

SOCIAL AND ECONOMIC IMPLICATIONS OF WATER
RESOURCES DEVELOPMENT ON ARIZONA INDIAN RESERVATIONS

by

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ABSTRACT

The San Carlos, Fort Apache, and Colorado Indian River reservations provide the setting for a study of the role of Arizona Indians in water resource development and management. This study indicates that Indian tribes and the Bureau of Indian Affairs are assuming an increasingly important role with respect to water planning within the State of Arizona. The study further suggests that Bureau of Indian Affairs planners emphasize development of physical assets involved with water while failing adequately to consider the sociological consequences such economic developments entail.

The Indian is often moved to protect his water rights via rapid development of reservation water resources. Because he lacks the managerial expertise needed to administer such developments, the Indian is further encouraged to engage in private long-term development leases. One unintended consequence of such actions may well prove to be the termination of federal trusteeship of the Indian's landed assets and his ultimate alienation from his land.

CHAPTER 1

ARIZONA INDIAN COMMUNITIES AND WATER RESOURCE MANAGEMENT

There are nineteen Indian reservations in Arizona with over 100,000 tribal members. The state contains not only the greatest Indian population, but the largest reservation lands of any state. Arizona's Indians possess about 29 percent of the state's land base. It is a paradox that Arizona's Indians are the poor landlords of a real estate vast in size, possessing resources that remain largely untapped. The nearly 20 million acres of Indian land for some 100,000 Indians may appear, at first, as a favorable ratio for reservation inhabitants. However, Indian land is often of poor quality, severely eroded, and located in extremely arid and isolated portions of the state.

These lands share with adjacent lands within the state a related ecological setting with common watersheds and groundwater reservoirs. In view of this shared resource, a study of water allocation, use, and policy in Arizona cannot ignore the Indian communities. As a consequence of both cultivating the resource potentials of these reservations, and enforcing Indian water rights, Indian cooperation and participation in determining and shaping state water policy is becoming more apparent.

The productive application of Indian water resources is inherently related to the over-all development of reservation natural resources. Development of this resource is essential in advancing the economic well-being of the Indian communities. The utilization of these resources will not achieve the anticipated benefit for the Indian community unless human factors are considered. For this reason, economic values dictated by standard efficiency models may be minimized or drastically altered, when necessary, to harmonize with cultural values and needs. Bureau of Indian Affairs' (BIA) agency administrators at the reservation agencies and tribal government personnel share in the decision-making responsibilities affecting the welfare of the Indian community.

These reservations represent considerable cultural as well as ecological diversity. The major Indian communities embrace the Athapascan, Piman, and Yuman speakers. The Navajo and Apache inhabited the mountain and plateau sections in central and eastern Arizona from the north to the south. They were primarily hunters and gatherers with minimal reliance upon agriculture.

The Gila River Pima resided in the arid country along the banks of the Gila and Salt Rivers just west of the central mountains from which these perennial streams originate. Their subsistence economy was the most agricultural of Arizona Indians, and contributed 50 to 60 percent of their food supply. The southern neighbors and cousins of the Pima, the Papago of the southwestern desert, depended more upon hunting, gathering, because a limited water supply restricted the role of agriculture to flood farming during the rainy season.

The River Yumans included the agricultural Mohave, Cocopa, and Yuma Indians who occupied the extremely arid southwestern portions of the state from Parker Valley in west central Arizona to the Colorado River Delta in the south.

Many students of ethnology have divided the major cultural areas of the Southwest by common geographical or topographical affinities. This concept has some validity when applied in a general manner because it supports the contention that environment may influence, limit, but not necessarily determine human behavior. Different cultural traditions and natural areas may share or overlap a given territory. For example, the sedentary Hopi farmers traditionally occupied a plateau region in eastern Arizona which also supported the semi-nomadic Navajo.

There are obvious relationships between resources and technology and the ". . . reciprocal relationship between these and the organization of societies for production and consumption (Beals 1954: 553)." The availability of an adequate supply of water was therefore a principal factor influencing many aspects of the Indian life way. The presence of water, to some degree, affected the settlement pattern, social organization, religion, and economic activities. Other related ecological features included temperature, soil types, plant cover, and elevation.

In Arizona and the Southwest, sedentary maize farmers were limited to areas which provided an adequate growing season and a sufficient water supply for domesticated plants. Sedentary agricultural communities were more restricted to certain geographical

areas favorable to agricultural pursuits than were the hunting-gathering peoples whose economy depended upon seasonal movement over a greater territory in the food quest.

Man, was, as he is today, a part of the environment. But, unlike the European descendant who now dwells in the semi-arid sections of Arizona, the Indian possessed a culture which was essentially a product of a semi-arid environment. His survival depended upon the ability to adapt to a way of life in harmony with the environment. For example, in times of drought in the Gila and Salt River Valleys, the Pima could no longer farm, but was able to exploit the flora and fauna of the region successfully.

Since the intrusion by Spanish and Anglo colonists in Arizona, the traditional land base of the Indian has been greatly reduced. But, for the most part, Indians have retained the general geographical areas where their ancestors lived at the time of European contact.

The European settlers brought with them an advanced technology which made them dominant in numbers as well as in economic and political power. The Indian became subordinate to the European, under European laws and became affected by a money economy instead of a subsistence economy. Before the entrance of the White Man, there existed more or less an ecological balance between man and the physical environment. The primitive subsistence economy, even with irrigation of the Gila River Pima, never disturbed this balance. The natural recharge was sufficient to meet the small amount of water withdrawn from the streams or from shallow wells for cultivation of

Indian fields. However, the European began to exploit the natural resources with the assistance of an advanced technology which was the product of a non-arid environment. The consequences of increased use of water for cultivation and livestock, soon became apparent. At first, the European utilized the limited surface waters of the rivers and water from springs. The livestock industry from the 1850's to the early 1900's cut away the plant cover, deteriorated the watershed. Wells for irrigation depleted groundwater reservoirs. The development of mechanized irrigation agriculture and growing rural and urban centers greatly altered the traditional ecological balance between man and his physical environment.

Arizona has great diversity in climate, elevation, and topography. Elevations range from 137 feet above sea level to 12,600 feet. This variation in elevation, of course, has considerable effect upon climate and ecology of a given area. The state can be divided into three major topographical provinces: (1) the Plateau Province in the north, (2) the Basin and Range Province of the southern portion of Arizona, and (3) the Transition Zone comprising the mountains and rugged Mogollon Rim in the central section of the state (Cross, Shaw, and Scheifele 1960: 74). Within each province, there is internal variation in climate, altitude, and geography. Arizona Indian reservations occupy all three major topographical provinces and all sections of the state except the southwest.

The Plateau Province is characterized by flat-topped mesas, desert valleys, isolated buttes, and several gentle-sloped mountains.

Located in the northwestern portion of this province is the Navajo Reservation, the largest in the United States. It encompasses some 15 million acres of which the majority is in Arizona, with some lands in southeastern Utah, southern Colorado and northwestern New Mexico. In the northeastern section of the Plateau Province is the Hopi Reservation, surrounded by the Navajo lands. Also, in the Plateau Province from the Colorado River in the west to the Verde River to the east are the Kaibab, Yavapai, Havasupai, and Hualapai Reservations. In fact, excluding the Navajo, reservation lands in this province total approximately 2,599,086 acres.

The prevailing vegetation types of this province are juniper, piñon, in the higher plateaus and mesas and sagebrush in the valleys and canyons. Pine forests are limited to the area from Defiance Plateau to the Carrizo Mountains (Sellers 1960: 7). Elevations in this province range from 4,000 to 10,000 feet above sea level.

Much of the precipitation is in the form of rapid run-off that is not collected by perennial streams or stored in groundwater basins, but lost by evapo-transpiration. With the exception of the main stem of the Colorado River, the majority of perennial streams of the Plateau Province originate in the mountainous Transition Zone. "The low yield of stream flow in this province is exemplified by the Little Colorado River which is an intermittent stream although its drainage area is more than 26,000 miles (Cross et al. 1960: 102)."

South of the Plateau Province is the Transition Zone which dissects the central portion of the state in a northwest to southeast

direction. This zone is more rugged than the Plateau Province with steep-sided mountains and deep canyons and gorges. A major topographical feature is the Mogollon Rim which extends more than 200 miles across the state, dividing the Little Colorado and Gila drainage systems. The two highest peaks in the state are located in the Mogollon Plateau. They are Baldy Peak at 11,490 feet, some 20 miles southeast of McNary, and Green's Peak, at 10,115 feet, 15 miles west of Springerville (Sellers 1960: 7).

In the Transition Zone are the headwater for many streams, including the Gila, Salt, and Williams River. Common vegetation to this zone are stands of piñon and juniper in the lower slopes and ponderosa pine in the high country. Scattered patches of chaparral and oak woodland are found on the south side of the Mogollon Rim. In the Transition Zone are major portions of the Fort Apache and San Carlos Apache Reservation which combined comprise about six million acres of valuable watershed composed of Range and forest land.

South of the Transition Zone is the Basin and Range Province extending from the Mountain Highlands to the valleys, mountains, and desert floor of the Sonoran Region. The Mountain Highlands include many irregular mountain ranges ranging from an elevation of several hundred feet to more than 10,000 feet above sea level.

The main river drainage in this section is the Colorado River which drains the Gila, Salt, Verde, and Agua Fria Rivers. Most intermontane valleys of the Basin and Range Province are dissected by drainage systems to the Colorado River.

The driest portion of the state is the Basin and Range Province. A large portion of this province is the Sonoran Desert, the most typically desert country of the state. Much of this area is made up of flat desert plains criss-crossed by many arroyos and washes. Here elevations over 500 feet above sea level are rare. Typical plant cover of this region includes palo verde, saguaro cholla, ocotillo, mesquite, and other plants of the desert floor. The most arid section of the state, receiving less than five inches of rain during an average year, is from the Colorado River at Lake Mead to Yuma and northwest along the Gila River to Gila Bend (Sellers 1960: 12).

The lack of water is a problem of this arid section of the state. The little precipitation that falls quickly evaporates. Water is from irrigation reservoirs or deep wells. Several reservoirs around the Salt River Valley have been constructed to supply this arid region with water for domestic and agricultural use. Thirty miles northeast of Phoenix on the Verde River is Lake Pleasant, and the Roosevelt Reservoir on the Salt, and three smaller downstream reservoirs on this river. Further south in the Florence-Casa Grande area, water is drawn from the Gila River by Coolidge Dam located on the southern edge of the San Carlos Reservation. Fifteen miles east of Casa Grande is Picacho Reservoir. The Yuma area is served by the Colorado River and Imperial Reservoir. The Parker Valley area receives water from Havasu Lake, formed by Parker Dam.

The Basin and Range Province is the largest agricultural section of the state owing to favorable soils, and a long growing season. The valleys and lowlands of this province contain the largest population within the state, in fact, some 80 percent of Arizona's population (Cross et al. 1960: 100). Within this province are many Indian Reservations. These include the Fort Mohave, Colorado River, Yuma and Cocopa Reservations along the Colorado River, and also the Salt River, Fort McDowell, and Gila River Pima in the Salt River Valley area, and Phoenix. To the west on the Gila River is the Gila Bend Papago Reservation and to the south is the main Papago Reservation at Sells and San Xavier just south of Tucson.

Regardless of how varied the cultural and ecological settings may be, all Arizona Indian communities share many related problems as well as common goals. They want to develop their human and natural resources to the fullest extent. All are cognizant of the value of water in realizing these objectives. Water is important not only for local domestic consumption, but to the entire reservation whether it be agriculture, mining, timber, livestock, or recreation.

Statement of Problems

While the reservation land base is essentially the same as it was fifty years ago, the population has not remained static. A decline in mortality rates, especially of infants, has been responsible for a population increase. Throughout the United States, the Indian population is expanding at a rate nearly double that of other Americans (Hagan 1964: 166). This increase has contributed to a problem shared by most reservations, namely, there is a limit to how many persons a restricted land base can support. This demographic situation suggests two alternatives: (1) relocation off the reservation, and/or (2) economic development on the reservation to provide for an increasing population.

In 1966, a Task Force for the Secretary of the Interior examined the many problems confronting the modern reservation community. This government fact finding commission issued a report suggesting that more emphasis be on reservation development than on termination of federal responsibility (U. S. Department of Interior 1961: 6). The majority of tribal governments favor reservation development as a substitute to relocation. Nevertheless, a demographic increment necessitates relocation despite economic development which has natural limitations and presupposes many things.

One obvious requirement is the presence of natural resources which can be utilized effectively for economic gain. However, physical resources cannot be exploited without the necessary capital investment. Economic development also implies that the Indian be adequately trained for the technology his employment demands.

Social-economic development is often a slow process based upon long-term goals and moderate successes. The Indian must have the necessary capital investment for economic expansion, the proper training, and community planning. The reservation must not only have the interest and cooperation of the residents, but assistance from a multiplicity of agencies including the BIA and other federal departments, state, and municipal agencies, as well as, the private sector.

Therefore, reservation planning is more difficult than might be initially conceived. Economic planning cannot envision technological innovation without regard to social innovation. Success in economic development cannot be accomplished unless economic planning is in harmony with the needs and attitudes of the Indian community. Commissioner Bennett remarked that "Planning for economic development must embrace planning for education, recreation, health, housing, and other related social programs (U. S. Department of Interior 1968c: 2)."

Economic development involves directed change and must take into account the various possible sociological consequences of change. For example, Indian work habits must be considered. Programs of economic and social change ought to be carefully designed and may require considerable time to initiate. These programs should provide not only manual labor, but administrative positions for qualified Indians. This latter recommendation may be difficult to implement as Indians are often reluctant to accept positions of individual responsibility that require competitive behavior. In some cases, economic development programs have generated confusion among Indians

involved as their respective roles have not been adequately explained. Perhaps, VII-THAW-HUP-EA-JU, the Gila River Pima development program, is sufficiently comprehensive as its planning includes four categories: economic, social, community development; and tribal government and management.

Most Indian communities throughout the nation are plagued by poverty conditions. The American Indian comprises the most impoverished segment of the country's population. Ninety percent of the housing is substandard, unemployment is about 50 percent, and the high school dropout rate is approximately 69 percent. The income of the reservation Indian is only one-third that of the national average (Oswalt 1966: 515). These problems are characteristic of all Indian reservations in Arizona.

Indian communities are sometimes characterized by conditions of disorganization. Symptoms of this condition are alcoholism, lack of parental care, and high rate of school dropouts. Such conditions are, in part, reactions to problems in adjustment to a dominant white society. Dr. William Kelly noted the following three major factors for this disruption:

The needless destruction of Indian values and customs when functional substitutes have not been provided.

The imposition of badly planned programs by administrators, and others, who are sincerely trying to help the Indians.

The creation of situations where whites have had an advantage, however morally and legally proper, over the Indian (Kelly 1955: 1).

Another obstacle to reservation development in Arizona is geographical isolation. Most reservations, especially the Navajo, Papago, and Apache Reservations, are situated in rural areas where permanent employment on or near the reservation is difficult, if not impossible, to obtain. Economic development on the reservation is often discouraged as a result of isolation from commercial centers, compounded by poor roads and inaccessibility to rail and shipping lines.

On the other hand, the close proximity of a reservation to an urban center may generate numerous conflicts involving land and water resources. Urban pressures upon reservation land may threaten Indian ownership. The Seventh Arizona Town Hall expressed concern that adjoining Indian reservations may retard or hinder urban development.

. . . many Arizonans are concerned with the future relationship, because of proximity of some Indian Reservation lands to urban growth. Should not this land be sold to private individuals? Should not urban government have police power and service jurisdictions over such land? (Arizona Academy 1965: 148).

One such example, involving the use of water on a reservation was the objection of the City of Tucson to the development and leasing of five thousand acres of the San Xavier Papago Reservation to private interests. The city feared that the reservation might seriously threaten its groundwater supply (Tucson Daily Citizen 1962).

Failure to develop reservation resources may mean continued reliance upon welfare assistance and government work programs. Non-

Indians may desire to claim the unused land and thus favor termination of the reservation from federal protection and trusteeship. As will be noted in the section concerning Indian water rights, the failure to utilize water resources may endanger Indian water rights. On the San Carlos, Fort Apache, and the Colorado River Reservations, BIA resource planners emphasize the importance of utilizing not only the water but land resources of the reservation to insure Indian ownership. The following quote by a Fort Apache Agency official expresses a common viewpoint among Bureau employees:

You know that all over the world, especially with Indians, that if the land was not utilized that another people would find some way to appropriate it. This could very well happen here if the Apaches fail to utilize the full potentials of this land. You know that if whites had the land that things would be different. The Indians cannot afford to be absentee landlords to their own land.

Failure to develop reservation resources, such as water rights, not only prevents economic utilization of these resources, but also may endanger Indian ownership. The opposite may be said, that is, that development of reservation resources may create conflict over these resources. This was true in several conflict situations involving Indian utilization of water resources. A case in point, already mentioned was San Xavier Reservation's attempt to develop agricultural land. Also, the development of reservation land for agriculture created conflict over water rights on the Colorado River Reservation. Before the water rights were adjudicated in 1963 by the Supreme Court, the right of the Colorado River Tribe to develop irrigated land on

the reservation was challenged by both the California and Arizona State Stream Commissions, and the Arizona Power Authority.

Another example is the development of the White Mountain Apache and San Carlos tribes in building multi-purpose recreation lakes to develop their tourist industry. These water impoundments provoked controversy with downstream users, the Salt River Water Users' Association. On the Gila River Pima Reservation, deep well drilling by private lessees on Indian land created conflict with the State of Arizona involving the state's groundwater code. A major source of all these conflicts is federal water rights versus state water rights. This will be discussed in this chapter in the section pertaining to Indian water rights.

Resource development, such as large scale irrigation development on Indian land, increases the pressures of the state to tax this property and the income derived from these resources. This will be discussed in the section on state taxation and reservation resource development.

The above example involving the controversy with the Salt River Water Users' Association involved not only basic water rights (state versus federal jurisdiction) but water use, and a conflict between upstream and downstream users.

If it were not for federal protection of Indian water rights, recreation development on these reservations might have been impossible. If deprived of federal protection, reservation Indians would exert

little, if any, political influence within the state compared to downstream water users that far outnumber the reservation population. If this were the case, the argument of the importance and value of water use for the greatest number would be of primary consideration. An interpretation based upon such principles might seriously affect Indian welfare and the multiple use practice within the watershed. "There is a tendency to assume that downstream water users are more useful and valuable to humanity without full consideration of the possible efficiencies of using water where it falls to produce timber, forage, wildlife, and to provide natural habitat for recreation (Hoover 1959: 200)."

Indian participation in watershed management programs has created conflict with conservationists. These programs involve the multiple-use concept and take into account all related aspects of watershed use such as water salvage, timber and range rehabilitation and improvement and wildlife. Conservationists maximize wildlife use, and criticize BIA watershed programs for failure to protect this resource adequately. Recent conflicts with such programs and conservationists pertain to phreatophyte clearing on the Colorado River and San Carlos Reservations.

Most Arizona Indian communities have long-range plans to develop their tribal lands. These plans frequently contain industrial and agricultural projects, as well as community and educational programs, involving millions of dollars through government loans,

grants, tribal funds, and private investment. If successful, these projects should decrease welfare expenditures, raise the economic and educational levels of reservation residents, and contribute to the over-all state economy.

Indian Role in Water Resource Management

The role of Arizona's Indians in water resource management and policy in the state has been, until recently, minimal with exception of two reclamation or irrigation projects under the BIA. However, as more reservation resources are developed, the Indian influence in water management and policy will increase.

Arizona Indians have encouraged water research on their reservations. These programs include water recovery studies, range improvement projects, and water surveys. In 1964, the White Mountain Apache Tribe welcomed a two year survey of water reservation resources by the Bureau of Reclamation. This study examined the possibilities of a water exchange program between eastern and northern Arizona counties (Fort Apache Scout 1964c).

In cooperation with the Navajo Tribe and the BIA, the U. S. Geological Survey conducted a groundwater study on both reservations. This study has proven invaluable to tribal planning as optimistic reports of abundant groundwater supplies encourage economic development upon these reservations (McGavock 1966). Other U. S. Geological Survey studies have been conducted on the Papago, (1961) and San Xavier (1965) Reservations.

The relationship of Indian to non-Indian land suggests that the federal government and Indians have an important role in water resource management. Arizona possesses more federally owned and controlled lands than any state with the exception of Alaska. Federal land within the state includes 52,188,523.60 acres or 45 percent of Arizona's land base. The largest portion of these federal lands, some 19,650,323 acres, are held in trust for the Indians (Arizona Academy 1965: 37). Arizona's Indians therefore constitute an impressive minority, approximately seven percent of the state's population, and own about 29 percent of the state's land.

Federal ownership of a large portion of land within the state, has hampered, to some degree, development of a uniform state-wide water policy. Cooperation between Indian and non-Indians and public agencies is imperative to reduce conflict, share in the allocation of water resources and development of a common resource plan.

Though millions of acres of reservation land within the state are arid desert and plateau country, Indians own thousands of acres of valuable watershed. In fact, the Fort Apache and San Carlos Reservations possess several million acres of watershed which the residents of the populated Salt River Valley depend upon for their very existence. Therefore, Indian watershed management can and does directly affect the non-Indian.

Indians and non-Indians alike benefit from Indian irrigation and reclamation projects. Development costs for these projects are

repaid under contracts similar to those for Bureau of Reclamation Projects. There are 64 irrigation systems on Indian reservations in the state ranging from several hundred acres on the smaller reservations to over 40,000 acres on the Colorado River Reservation.

The Colorado River Reservation Irrigation Project receives water from Headgate Rock Dam. The project is managed and operated by the BIA. It supplies not only water but hydroelectric power to the project area which encompasses the reservation. A few off-reservation users purchase power from this project. The Colorado River Tribe will receive control and management of this power facility in the future. Most of the irrigable lands within the project are leased by non-Indians. Therefore, the Colorado River Indians have become landlords rather than farmers. This project will be discussed in the next chapter.

The San Carlos Project is managed and operated by the BIA. The project, authorized by Act of Congress in 1924, was completed in 1929. This act provided for the irrigation of 100,000 acres, one-half for the reservation and the other half for the Florence-Coolidge-Casa Grande area for the benefit of white farmers (Hackenberg 1955: 66). The project was designed to store 1,200,000 acre feet, but water storage has been far below capacity due to drought conditions (Mann 1963: 174). Dean Mann noted that the BIA ". . . has come under criticism for inefficient administration, but it appears that the basic problem is a shortage of water rather than mismanagement (Mann 1963: 146)."

The Indians of the Gila Pima Reservation have a water right to the Gila River to divert 210,000 acre feet of water" . . . during each irrigation season, from the natural flow in said river at the Amhurst-Hayden and Sacaton diversion dams--as of an immemorial date or priority . . . (U. S. District Court 1935: 86)." However, the land within the San Carlos Project has never been precisely designated. It has been remarked that ". . . no Indian can be secure because an irrigable allotment may be at any time excluded from the San Carlos Project water supply by the same arbitrary means through which the land was included . . . (Kelly, Kunstadter, and Hackenberg 1956: 67)." The Indians have been incapable of appropriating all the water within the project area by underground wells for several reasons. They lack the money to purchase the equipment necessary for this undertaking; and they do not have the training modern agricultural technology requires. For example, the Pima canals within the San Carlos Project are in need of rehabilitation. In 1965 this area suffered a 40 percent water loss through seepage (Gila River Indian Tribes GRIIT 1966: 21). Development of irrigation facilities has been prevented by legal problems, and the refusal of the Indian Bureau to install wells within the project area.

Prior to the San Carlos Project, Pima agriculture was characterized by subsistence farming. However, Indian Service officials who considered the Pima economy in view of the San Carlos Project implemented cash crop farming. This resulted in a crop transfer from wheat to alfalfa or barley. The Bureau actively entered the farm management business, selected the crops, and planted them without cooperation

of the Indian. "It meant that the farmer was removed from his field and placed in the position of an absentee landlord (Hackenberg 1955: 88)." Not only did the Bureau overextend itself in farming activities without cooperation of the Pima, but credit was inadequate. The Indian was not trained for modern agriculture to compete successfully with his white counterpart. Therefore, when the San Carlos Project was completed, many Pimas had lost interest and knowledge of farming.

Today the Pima farm only 15,000 acres of the estimated 41,224 acres of the San Carlos Project (GRIT 1966: 9). In contrast to the Pima dilemma, neighboring white farmers, by application of the water from the Coolidge Dam and deep wells, have developed about 200,000 acres of irrigated land (Brophy and Aberle 1966: 91). The distant and recent past of the Pima Maricopa Indians embraces an epoch from prosperity and wealth to disparity and poverty. Today the Pima and Maricopa Indians possess a sufficient land area, but an inadequate water supply.

Tribal leaders of both the Fort Apache and San Carlos Apache Reservations have discussed the possibilities of construction of multi-purpose hydroelectric dams which would benefit the tribal economies. BIA planners recommended in an economic development plan for the Fort Apache Reservation: "Survey and feasibility studies for development of hydroelectric and steam generating plants (Fort Apache Agency [FAA] 1961: 41)."

A future Indian reclamation project, the Navajo Indian Irrigation Project, approved by Congress in 1962, will develop over 100,000 acres of reservation land (U. S. Department of Interior 1963: 29). This project will benefit the economy of the Four Corners Area by providing employment for thousands of Indians and non-Indians and by developing a large-scale agricultural project. The Navajo economy will also benefit from a thermo-hydroelectric facility, the Navajo Plant, to be located at Page, Arizona. This \$300,000,000 project will be operated by the Salt River Project and other participating power companies. Coal deposits on the Navajo Reservation will be used to generate power for this plant (Arizona Daily Star 1969a).

Tribal leaders are conscious of the importance of remaining independent of state laws and directives in resource management. For this reason, Arizona Indian tribes have not accepted Public Law 280 which would extend state civil and criminal jurisdiction to Indian reservations. Also, Indians refuse to abide by state demands that drilling in "crucial water areas" is unlawful, or that reservation water impoundment on high elevation watershed is illegal.

While attending a tribal resource meeting of the San Carlos Apache Tribe, the writer made the following observations. A discussion ensued pertaining to the necessity of conducting a fish and game survey to assist recreation planning. Indian committee members unanimously rejected a proposal to have the tribe conduct this survey

because sufficient tribal funds for the undertaking were lacking. A BIA Spokesman suggested that the tribe request the Bureau of Sports Fisheries and Wildlife to conduct the survey. He emphasized that it would be poor policy to allow the State Fish and Game Department people to conduct the survey because this would, in effect, give them some measure of influence in determining reservation resources policy and could endanger Indian water rights. The committee agreed, and passed a resolution requesting federal assistance for the proposed survey. The opinions expressed by this committee illustrate the view held by tribal leaders throughout Arizona that reservation resource programs ought to be, where possible, free from state influence and control.

The BIA and Arizona Indians desire that Indian reclamation and irrigation projects remain under the control and management of the BIA. In the past, it has been suggested that these projects be placed under the Bureau of Reclamation, or under state control, managed and operated by local water users' associations. Tribal leaders, BIA officials, and legal advisors contend that this would threaten Indian lands and water rights as land under the Bureau of Reclamation may be subject to state or private ownership and control.

Conflict and Cooperation in Water Management

Federal and state water laws basically differ as the former is based upon the reservation doctrine, and the latter upon principals

of prior appropriations and beneficial use. In some instances, conflicts have arisen due to utilization of reservation water resources such as water impoundments in the Salt River Watershed or drilling of groundwater wells located in "crucial water areas".

Some Indian legal advisors consider the Federal Water Pollution Act, Senate Bill 178, a threat to Indian water rights. One tribal lawyer provided the following analysis: "This gives the state rights to regulate water on reservations. We shall wait until anything happens to directly threaten us, and then we can act and go through the courts as this act is obviously unconstitutional."

The state, counties, and municipalities have sometimes neglected to obtain a right of way from the Indian reservation for roads and water lines. Failure to do this has created some ill feelings and generated conflicts which resulted in court action settlement.

The Navajo Irrigation Project would have never been possible if Section 9 of the Navajo-Hopi Rehabilitation Bill had not been vetoed by President Truman in 1950. This section would have given the state civil and criminal jurisdiction on the Navajo Reservation. President Truman refused to sign the bill because ". . .the Attorney General was unable to assure him that in the event of litigation over water rights, he would be successful in removing the case to the federal courts where the doctrine of paramount Indian water rights would prevail (U. S. Department of Interior 1961: 67)."

Legal conflict can and has been avoided by establishing common lines of communication. The Salt River Project-Apache water controversy evidently has been settled by mutual agreement between all parties concerned. Another conflict which was averted by mutual agreement involved the San Carlos Apaches. The tribe obtained the right from the San Carlos Project to establish a recreation center on San Carlos Reservoir within project lands. There are several other instances of cooperation between federal, state agencies, and Indian communities.

The Arizona Commission of Indian Affairs was created in 1950, then known as the Governor's Interstate Indian Council (Kelly 1955: 54). Its main purpose is to provide an effective communication link to tribal problems as they related to state government. It also serves Arizona Indian communities by supplying them information gathered from all reservations within the state, pertaining to Indian programs.

Important examples of cooperation between federal, state, and tribal governments are the watershed management programs conducted on Indian reservations. The State of Arizona has taken an interest and has supported watershed treatment programs, such as Cibecue Project and phreatophyte removal programs on the Colorado River and San Carlos Reservations.

The Central Arizona Project will benefit non-Indians as well as Indians. The Pima, San Carlos and White Mountain Apaches Tribes view the Central Arizona Project as reducing the legal pressures

pertaining to their groundwater and surface water supplies. The chairman of the White Mountain Apache expressed this opinion in the following:

We would like to create more such lakes for public use. Though we are many miles from the valley below where the water of the Central Arizona Project would be used, by the water being taken from the Colorado River and transported to the Central Valleys users in the Phoenix and Tucson areas would be supplied, their needs for water fulfilled, the long struggle we have had with these users would be eased, and use of the water would be released to us for such future lakes (Fort Apache Scout 1966).

In fact, some of the land for the Central Arizona Project may be located on Indian land. The Montezuma Project, a pump and storage facility for the project, will be located on the Gila River Pima Reservation. The Arizona Power Authority (APA) has signed a contract with the Pima Tribe to secure all the necessary land and water rights required for this facility (APA 1965: 12).

Land on the Fort McDowell Reservation may be acquired for the proposed Orme Dam and Reservoir of the Central Arizona Project. Indian land for these facilities has been valued up to \$2,000 an acre or up to \$24,000,000 for the total 12,000 acres. The tribe would receive some 2,500 acres of public land in a land exchange to add to the reservation in addition to paid compensation for the full value of the land (Yuma Daily Sun 1968). The tribe will be granted the right to develop water-based recreational facilities on land adjoining the project.

The Hualapai Tribe supported the Central Arizona Project and endorsed federal and state construction of the Hualapai Dam or Bridge Canyon Dam which was to be located across the Colorado River at the Bridge Canyon Site on tribal land. The Hualapai tribal chairman said that construction of the dam would help curb the serious unemployment problem of his reservation, and encourage Indians to fight for protection of Indian water rights (Arizona Daily Star 1967). It was estimated that the project would require some 20,132 acres of Indian land. The tribe expected to receive a federal land exchange for this loss plus financial compensation to develop proposed recreation and commercial support operations at the project site (U. S. Government 1964b: 575). However, federal passage of the Central Arizona Project failed to include construction of the Bridge Canyon Dam which was vigorously opposed by conservationists.

A proposed bill known as the "Pacific Southwest Water Yield Improvement Act" includes the Forest Service, the Bureau of Land Management, and the BIA in projects of management of watershed lands. This program follows the pattern in the cooperative watershed treatment projects of the Forest Service and Salt River Valley Water Users' Association on the Tonto National Forest.

A unique feature of the bill makes it possible for these federal agencies to enter into agreements with on-site users of the lands, such as grazing lessees and Indian tribes, and downstream beneficiaries, such as farmers in irrigation districts, to share in the costs and benefits of any projects (Arizona Interstate Stream Commission [AISC] 1967: 44).

Reservation Administrative Problems

In Arizona, the BIA is responsible for almost 20 million acres (the largest land area in the state) on 19 reservations with over 83,000 tribal members. The Secretary of the Interior is the trustee of all Indian land, tribal and allotted, where fee simple titles are not held. This trusteeship refers only to property. This responsibility grants the BIA control and protection of all Indian lands. Related to this trusteeship, is federal jurisdiction over Indian affairs in which federal sovereignty supersedes tribal authority.

The trusteeship position of the BIA was established by federal legislation in the 1934 Indian Reorganization Act. This act radically altered BIA policy by protecting Indian land and encouraging Indian participation in reservation affairs.

The Indian Reorganization Act (IRA) of 1934, also known as the Wheeler-Howard Act, was designed to safeguard Indian lands and resources. It officially terminated the Allotment Act which resulted in the loss of millions of acres of Indian lands. Included within the IRA was restoration to Indian ownership of reservation land previously classified as "surplus" land under the Allotment Act. The IRA permitted the purchase of additional land for Indian use. This legislation granted reservation Indians the right to set up local government and formulate tribal constitutions. Incorporated within this act was provision for a revolving credit fund of \$10,000,000, later increased to \$30,000,000, to encourage Indians to improve their land holdings and supply them with the necessary equipment to accomplish this objective.

Of particular importance to reservation resource management was the authorization of conservation of soil and timber resources.

The Indian Reorganization Act

. . .required the groups accepting the act further to conserve their soil, water, vegetation, and timber resources; and it directed the Secretary of the Interior to inform them of all estimates of the cost of federal projects for their benefit before submitting the figures to the Bureau of the Budget (Brophy and Aberle 1966: 21).

The BIA is under the Department of the Interior which has direct control of programs. The direction and financial allocation of BIA policies as well as those of the Department of the Interior are under Congressional control. However, officials of the Department of the Interior can influence Congressional decisions, as do tribal officials. Congressional hearings with BIA and tribal representatives are frequently conducted to improve reservation programs, and to establish communication between legislatures and Indians.

The commissioner of Indian Affairs is a presidential appointee, confirmed by the Senate. The authority of his office is delegated to him by the Secretary of the Interior. The Commissioner is assisted by a deputy commissioner, an associate commissioner, four assistant commissioners, two assistants to the commissioner, and an information officer. The deputy commissioner supervises three divisions, each under an assistant commissioner; these include the following:

Administration (Branches of Budget and Finance, Plant Design and Construction, Plant Management, Personnel, and Property and Supply).

Community Services (Branches of Education, Employment Assistance, Law and Order, and Welfare).

Economic Development, (Branches of Agricultural Assistance, Credit, Forestry Management, Industrial Development, Real Property Management, Real Estate Appraisal and Roads (Brophy and Aberle 1966: 120).

In the field are ten administrative area offices, some 60 Indian agencies and major field installations such as boarding schools and irrigation projects, and 450 minor installations. The regional area office is patterned after the main office in Washington, D. C. In Arizona, the area office is located in Phoenix. The heads of the area offices are known as directors. There is an assistant area director for each of the three administrative branches.

The BIA is conscious of projecting a favorable image, one that depicts "progress". Progress means achieving the successes sought in reservation programs such as the goals and objectives of a watershed program, or reservation housing program. These objectives can usually be quantified in terms of miles of roads constructed, or acres of range denuded of piñon-juniper infestation. It is more abstract and difficult to correlate such projects with human consequences and reactions. For example, one BIA officer said that it is easier to build a bridge than effectively cope with a school dropout problem.

Progress according to the BIA, also means making the Indian truly independent to manage his own affairs and to provide him with the proper education to do this. The BIA is attempting to relinquish some of the traditional responsibilities that it has created, that is,

the basic dependency of the Indian upon this governmental agency. The objectives of the BIA include the following: "The main objectives of the BIA's program are: maximum Indian economic self-sufficiency; full participation of Indians in American life; and equal citizenship privileges and responsibilities for Indians (U. S. Government Manual 1967: 258)."

So-called "instant Indian experts" are overabundant with a variety of opinions, solutions, and innovations to reservation problems including health, education, and economics. They are, however, in common agreement that there are problems, although they may disagree as to what these problems are and how to remedy them. This paper does not intend to present a compilation of "expert answers". However, it does attempt to define some of these problems and will include the opinions of some BIA personnel and Indians who freely expressed their views.

The BIA has become a convenient "whipping boy" for Indian problems. This is both with and without justification, depending upon the specific problems. In some cases, the BIA has been a scapegoat of some tribal administrators to mask their own shortcomings or failures.

The BIA is a government bureaucracy, with good intentions and without a distinct personality. Indians may complain about the BIA but admit that if it were to be removed without adequate protection that they would severely suffer. As one tribal member put it:

"I now have mellowed towards them (BIA). They are like an old enemy that you sort of feel sorry for. The BIA is an impersonal thing just like other government agencies. They exist with all their blunders and yet we know that we cannot do without them."

A common criticism by both Indians and BIA officers is that BIA personnel are too often transferred from one reservation to another, without having an opportunity to become sufficiently acquainted with a particular reservation, its people, and their problems. One tribal officer complained about this practice stating: "We are going to die here and so will our children. This is our land. They (BIA) come and go and never know what the situation is here or about the people."

BIA resource planning is frequently very general and with long-range projections. One agency officer announced the following complaint before a BIA gathering:

Planning should naturally be on an individual reservation basis and be as specific as possible even during the preliminary stage. Generalization on conservation practices and expectations are abundant in other Bureau publications and correspondence. Specifics are what is needed if there is to be hope of a program that will have the element of continuity.

A tribal member also remarked " . . . these plans (BIA resource development programs) are vague and not really well planned and never take into account details and the reactions it will have on the Indian."

Long-range planning, commonly prepared in "Ten Year Programs" by the BIA must be, of course, by nature general in scope, but its

design is most grand and optimistic. Some BIA administrators have questioned the lack of specifics in long-range programs.

Some BIA staff members and Indians have complained that BIA reports are too optimistic and emphasize the successes of a program rather than mention the failures. BIA officers are reluctant to admit or record failure as this, of course, might influence their professional rating and ability to advance. A few disgruntled BIA officers (whose names obviously remain anonymous) complained that with the stress upon the self-reliant Indian, that some agency officers have created "the window-front Indian" who is "paraded around" before various committees and conferences. In some cases, a tribal representative has been known to read speeches that were written for him by BIA administrators. However, it will be noted in the next section concerning the tribal government, that a growing independence of Indian leaders, at last, is slowly evolving.

Many problems beset tribal governments. In most cases, traditional Indian political organizations have either eroded or completely disappeared. However, too often, they have been only partly replaced by an ineffective tribal council. The Indian Reorganization Act presented Indian reservations with the opportunity of instituting tribal governments. This act allowed Indian tribes to formulate constitutions for self-government. The following Arizona tribes have adopted constitutions: White Mountain Apache, Papago, Salt River Pima Maricopa, Yavapai Apache of Camp Verde, and the Kaibab Band.

The standard self-governing body, the tribal council, is democratically elected by the adult Indian community. Too often such governing bodies receive poor or unenthusiastic participation by tribal members. This results in a lack of support of the council by the community.

Tribal councils may be dominated by the local BIA agency, or tribal legal advisors. Dependence upon the non-Indian is slowly being replaced by a more responsible tribal council on several Indian reservations within the state. Sometimes, tribal officials feel unqualified to accept decision-making responsibilities, and rely too heavily upon non-Indians for advice and assistance.

A common criticism of tribal government is the practice of nepotism. Some tribal leaders may select or favor their own kin for special positions. The current practice of nepotism, to a degree, reflects traditional kin orientations of Indian society. Nepotism, or at least charges of this practice, have created conflicts within tribal government.

For example, on one reservation, an elected district representative (tribal council member) who is also a respected leader of the local community, complained that the tribal chairman had discriminated against his relatives by employing a large number of the chairman's relatives for a Community Action Program phreatophyte removal project. This person's major concern was not so much that employment should have included an unbiased sample of individuals from all districts, but that his relatives were discriminated against.

A problem not only of tribal chairmen and council members, but of Indian managerial committees and appointees is the refusal or apprehension of accepting individual responsibility for reservation programs. This condition will be noted in discussion of both the Colorado River and White Mountain Tribes. It is generally true of most Indian communities within the state.

One prominent Indian leader of the White Mountain Apache Tribe remarked that it is very difficult to produce Indian managers for several reasons. There are very few Indians who are adequately trained for managerial positions. An Indian manager cannot afford to fail, for if he does, then his people will never forget it. Hence, it is a liability to assume managerial responsibilities. Indians, as previously mentioned, find it difficult to be competitive or accept roles that demand competitive behavior.

Occasionally, potential lessees have encountered difficulties in business relationships with tribal councils. A prospective lessee usually negotiates first with agency personnel. Such plans are often concluded with the realty and industrial development branches of the agency. At the agency, provisions including the development plans, expenditures, and rent payments will be incorporated in the design proposal. The potential lessee may be assured informally by agency personnel that the proposal will be passed by the tribal council as if it were a mere formality. However, a plan presented before the tribal council may be rejected, regardless of BIA sanctions. Such events, though unusual are not uncommon occurrences. Such

rejections, embarrass, if not anger BIA personnel. Refusal by the council may simply indicate council disapproval of such a program, or it may be due to other factors such as failure of the council to comprehend the program fully. In some cases, BIA officials neglect to explain details of such programs.

In some instances, a proposal may be rejected because the council does not wish to project a rubber stamp image of BIA dependence. In some cases, the same plan will be presented at the next meeting and approved. In one case, a seemingly feasible development program was rejected which startled BIA officials. This rejection was because council members did not wish to create competition nor any way damage commercial operations of a long established local businessman who they felt a loyalty to, in contrast to a large firm from a major west coast city.

A lessee may discover that when a new tribal administration is installed that his relationship with the tribe is radically altered and poor working relations may result. Brophy and Aberle noted that reservation development may be hindered by tribes who have not accepted the Indian Reorganization Act, and fail to uphold business contracts.

. . . those which rejected the IRA or put themselves under it without obtaining charters continue to be exempt. This situation has unfortunate results, for when leases or contracts with tribes cannot be enforced in an outside court, a brake is put on much needed investments in the Indian country. Such groups can be prosecuted only if Congress so legislates in each particular instance (Brophy and Aberle 1966: 45).

The Indian Reorganization Act granted Indian tribes the right to set up tribal business organizations to be chartered as federal corporations. This made possible tribal business operations such as tribal farms, livestock cooperatives, stores, and recreation enterprises. Usually, profits from these enterprises are not distributed among tribal members, but are reinvested into the business activity, or go towards the cost of operating tribal government. Tribal enterprises are generally managed by non-Indians who are either agency personnel, or non-Indians employed by the tribe. "The theory of the operation is that Indian 'directors' of the 'corporation' will learn the operation and eventually take over actual control. Thus tribal employees of these projects will replace their non-Indian managers (Kelly 1955: 37)." However, in view of the reluctance of Indians to assume managerial responsibilities, it is doubtful if this replacement will take place, at least in the near future.

A tribal enterprise is not always a financial success and may be subsidized from tribal funds. A tribal store at one reservation has been a financial failure due to poor management. The Colorado River Indian Tribe's recreation enterprise has been subsidized with tribal funds. Some Navajo enterprises are not operated on a profit basis, but to provide needed services and employment for the Indian community (Kelly 1955: 37). The four enterprises of the White Mountain Apache Tribe are all successful financial operations. These include: (1) livestock, (2) timber (Fort Apache Timber Company), (3) White Mountain Recreation Enterprise, and (4) White Mountain Apache Enterprises.

Industrial, Agricultural, and Recreational Development

Present BIA policy places considerable emphasis upon reservation economic development not only as a substitute to relocation, but to provide employment on or near the reservation, and to develop reservation resources. In the past, development was by two means-- either by a tribally owned or operated enterprise, or through the efforts of the tribal council to attract non-Indian industry to the reservation. These two approaches produced slight to moderate economic development, but far less than most tribes anticipated.

The Revolving Loan Fund of the BIA was established by the Indian Reorganization Act of 1934. Its purpose is to provide credit for individual Indians and Indian tribes. Some \$25,000,000 has been appropriated for this fund and all of this amount has been loaned up to 1967. The fund is limited and not enough credit can be extended to meet current demands. Commissioner Bennett remarked that "The revolving fund is woefully short of the amount needed to enable the Indians to participate more fully in American social, economic, educational, and political life and permit them to exercise greater initiative and self-determination (U. S. Department of Interior 1968a: 1)."

In 1958 the BIA created an Industrial Development section. This division was designed to encourage and assist an Indian community in attracting industrial and other business enterprises on the reservation. It also encouraged the founding of Indian development corporations. In July, 1965, with the aid of this agency, the first

industrial development corporation in Arizona was formed. This was the San Carlos Apache-Globe Development Corporation. An Indian development corporation operated by leasing Indian land for a nominal amount, and then subleases it to industry with a high percentage from the lease going to the tribe possessing the land. The remainder goes to the development corporation to cover management and operating expenses.

The Public Works and Economic Development Act of 1965 has stimulated economic development by providing grants and loans. This measure is anti-poverty act administered by the Department of Commerce, designed to aid communities in chronically impoverished areas. The 1967 Annual Report of the Arizona State Employment Service noted that "All of the Indian reservations in Arizona should be classified as depressed areas under the Economic Development Administration's (EDA) definition in Arizona... (ASES 1968: 9)." EDA Public Works Grants cover 80 percent of the total project cost, with the Indian tribe supplying the remaining 20 percent. EDA may make Public Works Loans to a tribe, in addition to the main grant or loan to Indian communities in desperate financial condition (Hough 1967: 260).

EDA funds have made significant contributions to both tribal enterprises, and Indian industrial development corporations. These corporations are state chartered, non-profit organizations with boards of directors composed of Indians and non-Indians. EDA assistance to Indian development offers enticements to private industry that few

non-Indians can offer. A private firm involved in Indian development may qualify for EDA business loans and borrow up to 65 percent of the capital required for its land, buildings, and equipment. Interest rates are minimal and the loan may be as long as 25 years.

A major feature in Indian economic development is the Indian Development District of Arizona (IDDA) chartered in 1967. It is basically a corporation promoting industrial development on all reservations and contiguous areas in the state. Under IDDA, reservations are grouped into a state-wide corporation to enable tribes to qualify for EDA funds.

Sources for funding Indian economic development projects include tribal funds, the BIA revolving credit funds, EDA loans and grants, Small Business Administration loans, and private assistance. Tribal government, the BIA, and Indian development corporations are involved in promoting such programs to stimulate reservation economy. Vocational training for economic development projects is provided for in the following legislation: the Manpower Development Act of 1964, Public Law 959, and the Economic Opportunity Act of 1964.

The largest industrial development program on any reservation within the state is located on the Gila Pima Reservation. This reservation was selected by the Small Business Administration for a pilot project known as "Operation Impact". The objective of the over-all project is to generate hundreds of jobs for unemployed Pimas and non-Indians near the reservation.

Four corporations or industrial parks have been established on the Gila River Pima Reservation to lease Indian lands for industrial use. Some of the parks will have their own water and sewage systems. The largest project, the 700-acre Pima-Coolidge Industrial Park will have a 250,000 gallon water storage tank and its own sewage system, supplied by two deep wells (U. S. Department of Interior 1967b: 6).

This project will cost \$1,600,000. It is financed by the City of Chandler and the Gila River Reservation through Chandler municipal revenue bonds of \$916,000 and \$757,000 worth of grants from the Water Pollution Control Administration, U. S. Department of Housing and Urban Development, and the Economic Development Administration. The Pima-Chandler Industrial Park will use about 1.2 million gallons per day. The park will include a water treatment plant to salvage and reuse water. This operation will comprise an open lagoon and employ an aeration process with a chlorine contact chamber located at the outfall (McCleneghan and Gale 1968: 7).

There are several attractive aspects to private investment on an Indian reservation. These include nominal lease payment, a favorable tax environment, an adequate labor supply with government vocational training programs, and attractive government EDA loans with moderate interest payments.

The relationship of water resources to industrial development is yet to be seen. Industrial development requires an adequate water supply, but in most cases this may be far less than required by

irrigation agriculture. However, problems may arise where a large quantity of water is necessary such as in mining processes, or in areas where water is in short supply such as "crucial areas".

Throughout the United States, the reservation Indian is using less than half of his irrigated farmlands, and only about three-fourths of his range lands, with the remainder being either idle, or leased to non-Indians (Brophy and Aberle 1966: 77). In addition to this utilized resource, undeveloped lands could be put into production, if development capital were available.

About 200,000 acres of the total 21.5 million acres of Indian reservation lands in the state are developed for irrigation. At least, an additional 100,000 acres are scheduled for development during the next two decades (AISC 1967: xxii). Of all Indian lands within Arizona, less than one percent was developed for irrigation in 1960. Total Indian lands for irrigation amount to 200,872 acres (AISC 1967: xxii). The average annual irrigated acreage differs from year to year, depending upon the water supply and other conditions.

The two major irrigation projects on Arizona Indian reservations are the Colorado River Indian Irrigation Project and the Navajo Indian Irrigation Project. These projects are designed to benefit only Indian-owned land. The Colorado River Indian Project will be examined in the next chapter. Both projects are dependent upon government funding. Present conditions, inflation and the Vietnam War have reduced the amount of annual expenditures for these projects.

The Navajo Project, passed by Congress in 1962, will provide the tribe with 508,000 acre feet of water a year from the Navajo Dam to irrigate some 110,630 acres in the Four Corner Area of the Reservation. This project will be of great importance to the tribe as it is estimated that upon completion that it will support as many on as off the reservation (Navajo Times 1968).

Reservation agricultural projects incorporate, where possible, the multiple use concept. For example, the water impoundments on the Fort Apache and San Carlos Reservations are designed to serve not only livestock but recreation. On the Colorado River Reservation, the main irrigation canal is stocked with fish by the tribal game department and the Bureau of Sports Fisheries and Wildlife. A recently announced EDA funded project for a \$2,444,500 dam across the Black Canyon on the Navajo Reservation will create a 1,600 acre lake to benefit both recreation and agriculture (Arizona Republic 1967).

Arizona Indian tribes, especially the Navajo, White Mountain Apache, San Carlos Apache, and Colorado River Indian Tribes, have been active in recreation development since the 1950's. There are many reasons for the establishment of tribal recreation programs in Arizona. The rugged, scenic, and sparsely populated reservations offer superb areas for many recreation activities, including hunting, boating, camping, and fishing. Greater access to the reservation by new and improved roads, and development of commercial and private airport facilities have "opened up" the reservation to recreationists.

Climate is an important factor conducive to reservation tourism. The warm winters of the Colorado River Reservation attract water sportsmen. The winter months on the Fort Apache Reservation will soon allure winter sports enthusiasts to the tribal ski resort. During the summer months, the cool White Mountains attract city dwellers from the urban areas of Phoenix and Tucson who vacation on the reservation to escape the valley heat.

Of course, one factor drawing tourists to the reservation is an interest in Indians. Tourists have the opportunity to attend Indian rodeos and special events, and visit historical and archaeological sites. They enjoy meeting Indians and obtaining Indian arts and crafts. Tourist brochures, prepared by several Arizona Indian tribes, welcome visitors to the reservation and ask that they abide by the fish, game, and camping regulations. These pamphlets also request that visitors respect not only the reservation lands, but members of the Indian community. For example, one such pamphlet, states that if a tourist desires to photograph reservation residents, he is to ask them for permission. By the same token, tribal leaders have asked cooperation of the Indian community to assist tourists when necessary, and extend to them reservation hospitality. The meeting of the Indian and non-Indian on the reservation (frequently a product of tribal recreation development) has proven, in many cases, a valuable experience to both parties concerned.

The rapid increase in the state's population, especially in central Arizona, has intensified demand pressures of existing

recreation facilities and encouraged new recreation development to meet this requirement. Arizona's resident population has burgeoned during the past 18 years from 749,587 in 1950 to 1,690,000 in 1968. By the year 1985, the projected population growth estimate is 2,847,000 (ASR 1968: 5). Tourism in the state is an advancing economy. In 1960 tourism grossed some \$290,000,000 and in 1967 had increased to \$480,000,000. In this year (1967) amusement and recreation alone amounted to \$260,000,000 (Arizona Statistical Review [ASR] 1968: 2).

Access to water resources is often a vital factor influencing recreation development, particularly in this arid state. In part, because the Fort Apache Reservation is endowed with some 300 miles of excellent trout streams, a recreation enterprise was developed to realize the recreation potentials of this reservation. Lake development on the Fort Apache Reservation was the key development factor in creating the White Mountain Recreation Enterprise in 1954. Because the Colorado River Reservation possesses over 60 miles of the Colorado River with numerous lagoons and lakes, reservation recreation development (private and tribal) was most favorable.

Arizona Indian recreation areas include over 90,000 acres and comprise more than 24 individual recreation developments, and three wilderness areas of nearly three million acres. Recreation is becoming an increasingly important contributor to some reservation economies (Fort Apache, San Carlos Apache, Colorado River Indian Reservation, and Navajo). In some cases, the potentials are very great.

For example, on the Fort Apache Reservation, cattle and agriculture represent static economies while timber and recreation offer greater returns and an expanding economic future, and a means to meeting existing wide scale unemployment.

The agencies of the federal government manage most of Arizona's recreation lands. The National Park Service is responsible for some 2,805,282 acres comprising two national parks, 15 national monuments, two national recreation areas, and one national memorial. The seven national forests in the state include some 11,343,974 acres with 13 wilderness areas, three nature preserves, and 167 recreation developments. The Bureau of Sports Fisheries and Wildlife has five national refuges (1,596,429 acres), and six recreational developments and one nature preserve (U. S. Department of Interior 1964a: 355).

The State of Arizona has only recently become actively engaged in recreation programs. In fact, Arizona was the last state to adopt a state park system. The Arizona State Park Board was created in 1957, following a history of opposition of state involvement in recreation planning by cattle interests and some irrigationists (Nann 1963: 196). There are now nine state parks of which three are water recreation related: Buckskin Mountain State Park and Lake Havasu State Park located on the banks of Lake Havasu, and Lyman Lake State Park in the White Mountains. Indian recreational facilities such as parks, campsites, and recreation support facilities far surpass the limited activities of the state in recreation development and planning.

To be introduced before Congress in 1969 is a bill to set up an Office of Tourist Development within the Department of the Interior. Secretary Udall said that the first objective of this proposed agency ". . . will be to develop a program to increase tourism on Indian reservations (Tucson Daily Citizen 1968)." This office would promote all recreation programs and tourist facilities on federal lands.

Reservation recreation development projects are financed by BIA appropriations, revolving credit loans, EDA grants and loans, tribal development funds, or by private investments of lessees. The BIA aids individual tribes by identifying and evaluating recreation potentials of the respective reservations. The BIA may receive, upon request, assistance in recreation planning and development from other government departments and agencies. The BIA may contract with a private firm (business consultant) to research recreation potentials and prepare a feasibility report.

The BIA may assist tribal recreation development by providing financial aid for farm (fish and stock) pond construction, fish and wildlife habitat enhancement projects. In some cases, if an individual tribe cannot afford to develop such programs, then the BIA pays for the total development if the plans are desirable.

A common loan source for tribal development projects (recreation included) is the revolving credit fund of the BIA. Terms of these loans are for periods of up to 40 years with interest rates varying by loan purpose from two percent to five and one-half percent simple interest per year. Recreation development on the Fort Apache Reservation is funded by BIA appropriations, BIA revolving credit loans, EDA loans,

and tribal funds. Since the creation of the Economic Development Administration in 1965, EDA loans and grants are becoming a major financial source in recreation development.

Applicants for BIA revolving credit loans must demonstrate that funds are unavailable from private sources. "Loans are available for recreational and tourism attractions and facilities such as establishment of Indian villages, campgrounds, picnic areas, and swimming pools, motels, restaurants, and tourist lodges (U. S. Department of Interior 1968b: 115)."

Under an interbureau agreement, the National Park Service assists the BIA in the areas of outdoor recreation, natural beauty, and historic and archaeological sites. The Park Service aids the BIA by developing program methods, guides and standards, rendering technical assistance; and helping in the review and appraisal of proposed projects (U. S. Department of Interior 1967a: 69).

The Bureau of Sports Fisheries and Wildlife works in close cooperation with Indian reservations in maintaining and improving existing fish and game programs on the reservations. This paper will examine the cooperative relationship of this federal agency with the Colorado River Indian Tribe (Tribal Fish and Game Department). Also this study will include the relationship between this agency and the White Mountain Apache Tribe (White Mountain Recreation Enterprise) which work together on game and fish management programs. On this reservation are located two national fish hatcheries.

Grants to individual tribes from the Office of Economic Opportunity have provided funds for not only community improvement projects, but for recreation development. On the Fort Apache Reservation, the Community Action Program provided work crews to clean recreation sites and construct picnic and campground facilities for the tribal recreation enterprise. Also, the Job Corps located at Poston on the Colorado River Indian Reservation assisted the tribal recreation enterprise by clearing a site and constructing an amphitheater for water sports shows at Blue Water Marine Park. The Job Corps on the San Carlos Reservation helped clear and develop a recreation site at Point-of-Pines where a multi-purpose recreation lake has been constructed.

EDA loans are important sources for funding recreation development projects on several Indian reservations within the state. The White Mountain Apache Tribe has recently received approval from the EDA for a loan to develop the \$2,500,000 Mount Ord Ski Resort and Snake Creek Lake recreation complex known as Sunrise Park. The EDA has approved a \$457,600 grant and a \$114,400 loan to the San Carlos Apache Tribe for development of recreation facilities for Soda Springs at San Carlos Lake. This project will be owned and operated by the tribe and is expected to provide employment for 46 Indians (Tucson Daily Citizen 1969a).

The San Carlos Apache Tribe also will receive a \$433,600 grant and a \$108,400 loan from the Economic Development Administration

to develop the recreation potentials at Seneca Lake on Highway 60, just south of the Salt River Canyon. This project is expected to generate about 45 jobs (Arizona Daily Star 1968b).

Construction and development of a 135 acre recreation lake, eight miles west of Chandler on the Gila River Indian Reservation will be financed by a \$536,000 grant from the Economic Development Administration. The tribe is to provide \$134,000 for well construction and labor costs (Arizona Daily Star 1968a). The tribe plans to develop a recreation enterprise known as Sun Valley Marina.

State Taxation and Reservation Development

In Arizona, reservation Indians are subject to federal income tax, but do not pay property taxes on the reservation. Indians pay federal income, excise, and other taxes, and state levies on salaries, off-reservation earnings, purchases, and property. Indians also pay gas and auto license fees. Both the Papago and Navajo Tribes have challenged the right of the state to tax automobiles contending that this is a property tax and therefore illegal. Production of gas, oil, and minerals from allotted land is taxable under state law. A state can tax mineral output, Indian rentals, royalties, and bonuses from executive order reservations (Brophy & Aberle 1966: 131).

Lease land interests on the reservation are taxed on the basis of property improvements by the state. It is possible that Indians might challenge this improvement tax. The possibility has been

discussed by BIA officials at the Colorado River Indian Agency who complain that such a tax inhibits development of the reservation. Cases are pending concerning Southern California Indian tribes and the California lease back tax. This will, of course, affect the Colorado River Indian Tribe's lands on the California side which include such private (lessee) developments as the Big River recreation lease.

Non-Indian lessees of homesites at Smith Park (Fort Apache Reservation) were assessed by both the county and state for physical improvements. Several years ago the lessees challenged the right of the county and state to levy improvement taxes. They formed an organization known as "The Hawley Lake Home Owners Association" and hired a lawyer. However, their challenge was not recognized in the courts.

The neighboring State of New Mexico levies four kinds of taxes upon royalties received from tribal trust property (oil, gas, and minerals). These taxes included severance, conservation, ad valorem and special school taxes (Brophy and Aberle 1966: 130). Arizona is considering levying similar taxes.

The State of New Mexico has attempted to tax Indian income derived on the reservation. This was recently upheld by the New Mexico Court of Appeals in February, 1969 (Arizona Daily Star 1969c). However, earlier U. S. Supreme Court decisions affirmed authority to collect federal taxes on reservation income, but refused the states authority to levy property taxes on Indian lands or sales taxes on

goods sold on the reservation. Legislators in Arizona have informally discussed the possibility of taxing the reservation income in that state, but this has never been formally submitted in the form of a bill.

In response to discussion concerning taxing reservation income and property, Secretary Stewart Udall remarked that benefits from federal expenditures to the reservations in the areas of health, education, welfare, and development funds far outweigh the burdens that individual states assume. He noted that if the "Indian States" (Western states) were to provide Indians with current services that the federal government furnishes, that new taxes would be necessary to meet this load. He gave the following example:

. . .for instance, in my own State of Arizona, Federal expenditures on behalf of the Indian Tribes in fiscal year 1963 added up to almost \$64 million. If the State assumed the responsibility for these services, it would entail nearly a 20 percent increase in the current state budget (Arizona Academy 1965: 149).

There have been several attempts to tax lease-held interests on federal lands within the state. Thus far, these efforts have failed. Perhaps a major reason is because livestock interests have been influential in defeating such measures. Evidently proponents of lease-held taxation represent urban interests. Passage of legislation to tax lease interests on federal lands would seriously inhibit reservation development programs. The absence of such a tax has served as an incentive to private capital to invest on the reservation.

In 1966, the League of Arizona Cities and Towns passed a resolution recommending that leasehold interests on federal lands within the state be subject to taxation. The resolution stated the following: "Real property tax revenues are extremely limited because of government land ownership, therefore we urge and support legislation which would permit the taxation of leasehold interests (Arizona Cattlelog 1966: 4)." This resolution was strongly opposed by Arizona Indian Tribes and the Arizona Cattle Growers Association. In that year, a lease interest bill was introduced before the State Senate and was defeated.

Despite the 1966 failure of passage of a leasehold bill, proponents of such legislation have not been inactive. The Eleventh meeting of the Arizona Town Hall in 1967 recommended that the State of Arizona have the authority to tax private leasehold interests on federal lands within the state.

. . . as the panelists were concerned--all private property interests should be taxed wherever they are situated within the State of Arizona. Great inequities presently exist in the tax situation, particularly as it relates to privately used structures and improvements on municipal, state, federal and Indian land. These inequities often times provide competitive advantages for the lessee over his competitor. This, of course, is undesirable (Arizona Academy 1967: v).

In February 1969 a private leasehold tax bill was introduced before the Arizona State Senate but was narrowly defeated. This bill would have allowed the state to tax lease-held interests within the state, including federal lands. The livestock lobby was successful

to have an amendment included in this proposed legislation that exempted cattlemen under the Taylor Grazing Act (Arizona Daily Star 1969b). This bill, therefore, would have seriously affected (private) industrial, agricultural, and recreational development on Indian reservations.

Proponents of this bill argued that the proposed tax would help pay for education and welfare on Indian reservations. They contended that Indians ought to pay their "fair share". This bill received strong opposition from 18 Indian reservations and livestock interests. Indians considered the proposed bill a threat to tribal economic development programs, particularly in view of their efforts to attract new industry to the reservations. Edmund Kahn, Assistant General Counsel for the Navajo Tribe stated, "Indians are now paying more in general taxes than comes back to them in the form of services (Tucson Daily Citizen 1969b):"

Establishment of Indian Water Rights

Dependence upon an adequate water supply has always been of primary importance to the economic development of the Southwest. In Arizona, within the last 30 years, agricultural, industrial, and urban expansion have exerted strains upon this supply. During the same period, economic development on Indian reservations within the state has been minimal. Development of reservation water resources has, in several instances, precipitated conflict with off-reservation

water users. The procurement and use of this limited resource by non-Indians has created concern among officials of respective tribal governments and the BIA. They desire to protect and define Indian water rights, believing that the preservation of these rights is contingent upon the exercise of these rights; hence utilizing this resource to expand the reservation economy.

Federal and state water law basically differ and have generated some discord in management of Arizona water resources. State water law is based upon the doctrine of prior appropriations and beneficial use, contrary to the reservation principle of federal water law.

In Arizona the doctrine of riparian water rights was never applied because in this arid region the doctrine would have encouraged a monopoly of agriculture by relatively few landowners (Mann 1963: 30). Here the doctrine of prior rights was applicable, defining the validity of water rights only if it does not interfere or damage the rights of a previous claimant.

According to the State Water Code, all surface and groundwater pertains to the public and is subject to appropriation and beneficial use applied to domestic, municipal, irrigation, stock watering, water power, mining, and for personal use or transport to consumers. However, fish and game belong to a secondary position (Mann 1963: 38).

The power of the federal government in management of its water resources is based upon the constitutional authority to regulate interstate commerce, navigable streams, and the right to manage its own property (Cohen 1942: 316). Indian water rights relate to

federal rather than state law. These rights are derived from aboriginal ownership or from the United States via treaty or by federal law, and not by state law. "The water right (a vested property right appurtenant to Indian land) is implied and need not be expressly stated in the treaty, statute, or executive order (Brophy and Aberle 1966: 88)." Hence Indian water rights are reserved rights and do not depend upon beneficial use. The priority date is fixed from the time that a reservation is established.

Early treaties with Indians seldom mentioned and never defined water rights. Since the Indian reservation economy was, in many cases, dependent upon agriculture or fishing, it was essential to secure water rights within or bordering a reservation. Before the Winters case, it was already recognized that the federal government had the authority to reserve the waters flowing through the territories and except them from appropriation under state laws.

Indian water rights were first defined by the 1908 Supreme Court case commonly known as Winters v. the United States. This case concerned the right of the Fort Belknap Reservation Indians of North Dakota to water from the Milk River which flowed through the Reservation. Water used by Indian agriculturalists was threatened by diversion by white settlers upstream. The suit was filed to restrain Henry Winters, et al., from constructing dams or reservoirs to divert water from the Milk River. The court decided the intent and power to reserve water for Indian use. The court noted that the

extent of water rights depended upon an adequate amount of water for Indian farming, but acknowledged that these rights could be forfeited if the water was not utilized (Cohen 1942: 317).

The United States Government requested water for 30,000 irrigable acres, but the court allowed sufficient water for 5,000 acres which was based upon the amount the Indians were using at the time. "The extent of the reserved water right depends to a great degree upon the amount of water which the Indians actually use. The Indian water rights may be lost if the water is not used after a sufficient period of time and is needed by other elsewhere (Haas 1949: 13)."

The Winters Case involved only water for agriculture. Since then, Indian communities have developed water for other economic interests such as industry and recreation which is of equal value, and, in some cases, more so than agriculture. These new uses, not related to agriculture, are creating new conflicts over water rights with both non-Indian users and state agencies. Most legal counselors for the Indian communities suggest that Indian land should not remain undeveloped; water should be used to the fullest extent to protect Indian water rights. An obvious example of failure to develop or fully utilize Indian water resources was the Gila River Reservation. In this case, the Pima-Maricopa Indians did not obtain necessary legal action to protect their water right nor did they develop their land during the crucial period from the 1880's to the construction of

the San Carlos Project in 1929. Certainly, water in arid states like Arizona is nearly as great an asset as the land itself, and protection of Indian water rights is absolutely necessary, though difficult and costly. Legal costs depend upon available tribal funds and BIA allocations.

The Open End Decree

Many of the decrees which have employed the Winters doctrine have been "open ended" and therefore have not specified the amount of water for Indian use. In the past this uncertainty created problems which meant that a water user with a priority date later than that of the Indian was not assured that his water appropriation was secured. Future Indian needs might require more water to meet the increase in Indian population and expanded reservation economic development. The 1963 Arizona-California decision removed the "open end decree" by establishing a water right based upon the potential irrigable acreage of the reservation.

Dr. Robert E. Clark remarked that the Arizona-California case may have hopefully established a precedent by specifying a water appropriation for an Indian reservation determined by the agricultural potential of the land (Clark 1967: 386). He stated that the "open end decree" may hinder water use and economic development of those individuals who hold related water rights with a later date of appropriation to those of the Indian reservation.

By applying the 'irrigable acreage' standard perhaps the 'open end' nature of the decrees can be 'closed.' It is desirable that this be done; otherwise, if water for Indian use can be reserved to meet all needs of the Indian in perpetuity as these needs develop, expand, and grow, then the Indians, under the doctrine of implied reservation, could forever hold a cloud over all water rights on and near the reservations; this would be a serious and unnecessary impediment to non-Indian development and use of the surplus (Clark 1967: 386).

As previously remarked, Indian water rights traditionally have been based upon agricultural and domestic use. With recent economic development on Indian reservations in Arizona, industrial and recreational uses of water are becoming more and more apparent. A specified water right for Indian reservations ought to include not only domestic and agricultural, but industrial and recreational uses. The 1961 Task Force on Indian Affairs, authorized by President Kennedy to examine reservation problems and offer possible solutions and alternatives to current conditions, emphasized the relative importance and responsibility of the BIA to safeguard Indian water rights. The following quotation from the 1961 Task Force Report explicitly mentioned the significance of Indian water rights. "The Bureau of Indian Affairs bears a heavy responsibility to be at all times a vigorous defender and developer of what is perhaps the most valuable of all Indian assets (U. S. Department of Interior 1961: 68)."

The Doctrine of Reserved Rights

The 1963 Supreme Court Arizona-California decision awarded the Colorado River Tribe a 107,588 acre-feet water right based not

on prior use but on the doctrine of reserved rights. The Court based its decision concerning the reserved water right, in part, upon the historic Indian water right decision, the *Winers Case*. The issue of the government's implied reservation of water rights upon an Indian reservation was before the Supreme Court in 1908 in *Winters v. United States*. The Court rejected the argument ". . .that Congress had created an Indian Reservation without intending to reserve water necessary to make those reservations livable (U. S. Government 1964c: 49)."

The Court maintained that the United States reserved water rights for the Indians since the time the Indian reservation was created. The reserved water right for the Colorado River Indians was established upon the basis of water for agriculture. The Court stated, "We have concluded, as did the Master, that the only feasible and fair way by which reserved water for the reservations can be measured is irrigable acreage (U. S. Government 1964c: 49)." The Arizona-California decision established reserved water rights for other federal lands as a result of its opinion pertaining to Indian water rights. These lands included: Lake Mead National Recreation area, the Havasu Lake National Wildlife Refuge, the Imperial National Wildlife Refuge, and the Gila National Forest (U. S. Government 1964c: 51). However, it is interesting to note here that these reserved water rights include water for recreation and conservation. The Court agreed with the Master ". . .that the principle underlying the

reservation of water rights for Indian Reservation was equally applicable to other federal establishments such as National Recreation Areas and National Forests (U. S. Government 1964c: 51)." This case may have established a precedent which may have an important bearing on future water cases involving Indian water rights.

At a symposium held by the Arizona Land Department and Arizona Water Resources Committee in September 1967, Elmer Bennett, Chief Counsel for the United States Public Land Law Review Commission, discussed water rights of federal lands within the state. He based his interpretation upon the 1963 decision of the Arizona vs. California case. He contended that a withdrawal or reservation of public land includes a reservation of water rights for use on that land, and that the priority date for such water rights is the date of the creation of the withdrawal or reservation.

As defined by the Supreme Court, federal water rights reserved under this reservation principle are absolute and are not subject to any limitation because of failure to put the water to beneficial use within a reasonable time. The reservation principle confers on the federal government a proprietary control which means that anyone who has put reserved water to use since the establishment of the federal reservation or withdrawal from which the water has come, has done so at his own peril and has no assurance of continued legal right until and unless the Congress elects to confirm his appropriation of the water he puts to use (Bennett 1967: 30).

Mr. Bennett's interpretation of reserved water rights on reserved lands was based primarily upon the Arizona-California Supreme Court decision. It is important to examine the principle of implied reservation water rights on reserved lands. Reserved lands include

not only Indian reservations, but other federally withdrawn lands. The reservation doctrine may have great consequences upon water rights within the state because federal lands within the state comprise about 45 percent of the state and almost 100 percent of the watershed. There is a basic distinction between public and reserved lands. Public land includes lands that are subject to private appropriation and disposal under public land laws. Reservations or reserved lands are not subject.

The distinction between public and reserved lands and their relation to federal water rights was recognized in the Pelton Dam Case, decided by the Supreme Court in 1955 (Supreme Court 349, U. S. 435 in Beuscher 1967: 301). In this case, the State of Oregon, the Fish Commission of Oregon, the Oregon State Game Commission and the Oregon Division of the Izaak Walton League objected to a license of the Northwest Power Company of Portland, Oregon (Beuscher 1967: 299). They objected on the basis that the Federal Power Commission has no authority to grant a license and protested the fish conservation measures in the project design.

The Pelton project involved lands under the status of reservations rather than public lands. Some of the lands in western end were within the Warm Springs Indian Reservation and tribal consent was received for the project. The State of Oregon argued jurisdiction by the Acts of July 26, 1866, July 9, 1870, and the Desert Land Act of 1877 which conveyed to the state the power to regulate the use of

waters. The Court reviewed the case and concluded that the above Acts "are not applicable to the reserved land and water here involved" (Beuscher 1967: 301). Thus, in the Pelton case, the Court ruled that reserved and not public lands were at issue and hence the State of Oregon had no jurisdiction.

Since the Pelton Case, the federal government "has been asserting pre-emptory rights over water on or under federal reservations consisting of lands never alienated from the public domain . . . (Beuscher 1967: 301)." Since this decision, the federal government has refused to submit applications to states for water rights on reserved lands. This reservation doctrine is important because the federal government possesses a large amount of headwater land in the major western states, Arizona included.

The doctrine of reserved rights was a relevant issue in the water right controversy between the Salt River Project and the White Mountain Tribe. The Salt River Project contended that the tribe could not legally construct dams or reservoirs on the reservation as this was in violation of the terms in the Kent Decree which established water rights in the Salt River watershed. The Fort Apache Reservation was created in 1870, some 40 years before the Kent Decree. Not only was the doctrine of reserved water rights discussed during this conflict, but also the "open end decree" as the Apache Indians impounded several mountain streams not for irrigation or domestic use, but for a new use--recreation. This water controversy will be examined in detail in Chapter 3.

Challenges to Indian Water Rights

There are several challenges to Indian water rights. It has been noted that Arizona water law basically conflicts with federal law pertaining to Indian water rights. This has been noted in the federal reservation doctrine which is in direct opposition to the state doctrine of beneficial use. The "open end decree" has yet to be fully defined in the courts although the Arizona vs. California case may have set a precedent. The lack of development or utilization of reservation water resources may also adversely affect Indian water rights. If Indian water rights are not legally supported by the tribe and the BIA, no doubt, these rights will be lost. Additional possible challenges to Indian water rights is Public Law 83-280 and termination of federal responsibility of the reservation.

Tribal and BIA officials have expressed concern about Public Law 83-280 and its interpretation to Indian water rights. This act grants to the states the option of extending civil and criminal jurisdiction to reservations. It states that nothing in the statute shall "alienate" existing Indian water rights (U. S. Government 1953: 589). However, it fails to define what these existing rights are and hence the degree of protection of these rights is subject to question. The Task Force on Indian Affairs noted that "Indians fear that if disputes over these rights were litigated in state courts, the doctrine of beneficial use would decide the issue. In such cases their only recourse would be prolonged and costly litigation in the federal courts (U. S. Department of Interior 1961: 68)."

The consequences of federal termination of the Indian reservation upon Indian water rights ought to be seriously considered. It is possible that if a reservation were terminated before its water resources are developed or fully utilized, that water rights might be lost or reduced. In reference to the development of water resources for irrigation on the Colorado River Indian Reservation, Aberle and Brophy noted:

It will take years to put the 107,588 acres under irrigation. If the federal-Indian relationship should be terminated before full development and if Arizona's law for withdrawing water rights unused for five years (or any other inflexible period) is applied, the Indians will certainly lose water rights (Aberle and Brophy 1966: 209).

Brophy and Aberle emphasize the great differences between state and federal water law. Because of these two contrasting legal interpretations, the authors express apprehension about the possible consequences that termination may have upon existing Indian water rights:

The purpose of reserving water for future Indian use is not consistent with state systems, which fix use as the basis and measure of water rights. Shifting property rights from one system of law to another is necessarily complicated, and all the consequences cannot be foreseen but irreparable harm will result if termination statutes allow states, by law or administration, to curtail historic Indian rights, which because of their early priority would be impossible to replace by purchase (Brophy and Aberle 1966: 208).

The Task Force on Indian Affairs examined the possible threat to Indian water rights of termination of federal responsibility and made the following recommendation:

In the opinion of the Task Force it would be improvident to remove Federal jurisdiction over Indian water rights until the irrigable acreage of a given reservation has been determined; until the quantity of water needed and its priority have been definitely fixed; and until Federal laws giving iron-clad protection against losses have been enacted (U. S. Department of Interior 1961: 68).

Groundwater and Indian Water Rights. In 1955, the State of Arizona attempted to halt drilling of a groundwater well for irrigation on the Gila River Pima Reservation. The well was to be drilled in a region declared by the state to be a critical area, and the state groundwater code prohibits drilling in such areas.

Douglas McKay, then Secretary of the Interior, advised Arizona State Attorney General, Robert Morrison, that state laws do not apply to Indian land (Arizona Daily Star 1955). The state threatened to legally challenge this interpretation, but the matter was dropped and several other wells have been drilled. The wells were drilled on agricultural land that was leased to non-Indian farmers. The state and those persons who agreed with the state's position charged that not only was this a violation of the state groundwater code but that non-Indians were to benefit from the wells and hence the drilling was by non-Indians for non-Indians.

There is no existing case law that decisively measures the rights of Indians to withdraw underground water on reservation lands. Of course, in some instances, such as subsurface pumping in the Parker Valley on the Colorado River Reservation, the amount withdrawn is charged against the Indian water right established in the Supreme Court (Arizona vs. California) settlement of 1963.

Summary

Arizona's Indians and their respective reservations possess cultural and ecological variety. Nevertheless, most Indians desire to develop their human and physical resources. In most cases, in addition to reservation economic development planning, actual and potential water resources play a vital role in achieving these economic goals. Because Arizona Indians represent an important minority occupying almost 30 percent of the state's land base, their role in defining and shaping a state water policy is obvious.

An expanding Indian population on a limited land area necessitates both off-reservation relocation and reservation resource development. While present government policy favors reservation economic development and relocation, the Indian places greater emphasis upon the former.

Reservation resource development usually depends upon protection and employment of tribal water resources. Development of this resource is vital to industrial, agricultural, and recreational economies. In order to develop tribal water resources, federal appropriations, grants, and loans are necessary. Successful utilization of reservation water resources demands the participation and cooperation of the Indian community. The implementation of Indian resource development programs must be cognizant of Indian values.

As tribal water resources are developed, the greater will be the role of the Indian community in influencing state water policy.

The development of this resource by some of Arizona's Indian communities has already generated conflict with the non-Indian and will continue to do so until Indian water rights are defined.

CHAPTER 2

WATER RESOURCE DEVELOPMENT ON THE COLORADO RIVER RESERVATION

Of all Arizona's Indian communities, no doubt the Colorado River Reservation has been most active in water resource development. This reservation, dissected by the Colorado River, has always been economically dependent upon the river.

Virtually all potential agricultural land of this reservation remained virgin desert until capital was available to implement modern irrigation practices. However, extensive Indian irrigation projects were discouraged and blocked by the States of Arizona and California and private non-Indian agricultural interests. The Colorado River Reservation became involved in the water right controversy pertaining to the water users of the lower Colorado River. The historic 1965 Supreme Court Decision adjudicated these water rights and guaranteed the reservation a water right based upon the potential irrigable acreage. This settlement may be of fundamental importance to all Indian water rights by establishing a precedent by recognition of the Doctrine of Reserved Rights.

History of the Use of Water Resources

The Colorado River Indian Reservation occupies a strip of land along the Colorado River some two miles north of Ehrenberg,

Arizona extending north to Monument Peak, seven miles west of the town of Parker, Arizona. The reservation comprises some 264,245 acres located primarily in Arizona within the fertile Parker Valley in west-central Arizona. The Colorado River flows through some 60 miles of reservation water frontage.

Parker and the general vicinity has a dry, warm climate with an annual rainfall of less than five inches during an average year (Green and Sellers 1964: 305). Hence water needs for crops must be drawn either by gravity flow from the Colorado River or by pumps. Almost all water for irrigation on the reservation is derived from an irrigation system commencing at Headgate Rock Dam, a BIA Reclamation Project. The reservation contains over 42,000 irrigable acres with a potential of 107,588 irrigable acres. The primary source of income in the Parker Valley is from agriculture, although recreation is becoming of increasing importance. Principal crops include cotton, alfalfa, feed grains, melons, and lettuce.

There are approximately 1,620 Indian residents on the reservation. They include mostly Mohave and Chemehuevi Indians and some Navajo and Hopi colonists. Several miles south of Parker, at Four Corners, is the tribal center where the tribal office, library, museum, and auditorium are located. The Colorado River Tribe has a nine-member council, elected by popular vote. The tribal chairman is selected by the council. The council has the responsibility of tribal business affairs and works in cooperation with the Colorado River Agency of the BIA located in Parker. The tribal council has been

conscientiously working to implement a resource development program to attract business, industrial, and agricultural leases to the reservation. The Parker agency of the BIA serves also the Fort Mohave, Chemehuevi, Quechan, and Cocopa Tribes.

Much of the history of the Colorado River Indian Reservation concerns the efforts of the Indian Service and the Indians to develop a water delivery system to irrigate the lands along the river. In 1864, Charles D. Poston, Arizona's first Superintendent of Indian Affairs for the Arizona Territory, visited the Indian groups living along the Colorado River. He noted the need to settle the Indians of the Colorado River (primarily Mohaves, Chemehuevis, Hualapais) to avoid conflict with whites who were gradually encroaching on traditional Indian areas. Poston based his selection for a reservation site upon an area suitable for irrigation agriculture. He realized that in order to have sedentary settlement for Indians that irrigation would provide them with a basic agricultural economy to replace the traditional subsistence pattern characterized by hunting, gathering, and seasonal flood river farming.

The Colorado River Reservation was established by the Act of March 3, 1865, for the Indians of the Colorado River and its tributaries. This reservation included some 75,000 acres from Halfway Bend to Corner Rock on the Colorado River. Additions and changes in the reservation boundary were made in subsequent years.

. . .an Executive order of November 22, 1873, added river bottom land to the reserve; Executive order November 16,

1874, enlarged the reserve again; Executive order May 15, 1876, corrected errors in the first two Executive orders and once more enlarged the area; the Act of March 16, 1908 (35 Stat. 43) allowed the Arizona and California Railway Company to buy up to 40 acres of land on the reservation for station grounds and terminal facilities; and the Executive order of November 22, 1915, corrected an error in the surveying and locating of the southern boundary, taking away from the Indians a portion of the southern end of the reservation (Fontana 1958: 22).

On December 16, 1867, the Grant-Dent Canal was begun with the assistance of enthusiastic Indian laborers. Five miles of the canal were completed by Indian workers using only shovels when the funds were exhausted and the work discontinued (Fontana 1958: 15).

Additional funds of \$50,000 were appropriated by Congress on June 27, 1869 and with this money the canal was deepened and extended and a headgate was installed. Water was first turned into the newly-completed canal on July 4, 1870 (Young 1961: 198). Due to the wide fluctuations in stage of the Colorado River, and faulty construction of the headgate, operation of the canal was not successful. More water was admitted than the canal could carry and the banks were washed out in several areas. The canal was then extended upstream about two miles to Corner Rock, the original northern boundary marker for the Colorado River Reservation. After construction of the canal headworks at this site it became popularly known as Headgate Rock.

The two miles of this canal extension included some 4,159 feet of tunnels, most of which was in loose sand and gravel. Materials for the tunnel lining comprised hewed cottonwood logs. This new portion of the canal was completed and water entered the system on

June 23, 1874. However, the tunnel lining was not adequate. The tunnel lining was replaced several times but without success and the use of the tunnel was discontinued about 1876. In subsequent years water was drawn into the canal at the original heading at high stages of the river (Colorado River Agency [CRA] 1964b: 3). By 1884, some 800 Mohaves and 200 Chemehuevis lived on the Colorado Reservation (Spicer 1962: 274). ". . .the irrigation schemes before 1900 were a complete failure, and by 1891 seasonal farming on a small scale was still the rule (Fontana 1958: 30)."

Between 1870-1918 various attempts were made, including the introduction of pumps, to increase the acreage of irrigable land. In 1918, \$50,000 was appropriated for irrigation planning and survey for a system to serve some 150,000 acres. In 1919, a similar amount was appropriated to continue studies of the proposed system (Young 1961: 198).

The potential irrigable lands of the reservation attracted the attention of white settlers and land speculators. On April 21, 1904, Congress passed an act designed to give each Indian five irrigable acres and made the provisions of Reclamation Act of June 17, 1902, applicable to . . .the remainder of the land irrigable in said reservations (Colorado River and Yuma) after there shall have been reserved or allotted to each of Indians belonging on said reservations five acres of irrigable land (Fontana 1958: 23)." The remainder of the land was to be opened for entry and settlement by non-Indians under terms of the Reclamation Act.

On March 3, 1911, Congress passed another act allowing the sale of surplus land to pay for irrigation costs and increased the five acre allotments to ten acres. The land was never sold although ten acre allotments were given to Indians. ". . .the authority given the Secretary of the Interior by the Acts of April 21, 1904, and March 3, 1911, was never exercised and the lands have never been thrown open to entry and settlement by non-Indians (Fontana 1958: 24)."

In 1916, the Second Legislature of the State of Arizona sent a memorial to Congress requesting that the Colorado River Reservation be opened to allow irrigation development and to aid the economic development of the town of Parker where non-Indians had purchased lots on the assumption that the surplus lands of the reservation would be sold to non-Indians. However, Congress never complied with this request.

In 1899, a centrifugal pump powered by a steam engine was installed near the original canal heading. This pumping operation served a small area of Indian farms and the Indian School and Agency Farms. During 1911-1912, a new steam pump plant, with a capacity of 50 cubic-feet per second, was placed in operation. A second unit, with a capacity of 75 cubic-feet per second, was added in 1918, and the canal system was extended. Between 1929 and 1933 the steam power pumping units were replaced by diesel powered pumps. "These works successfully irrigated a project of 7,576 acres (Colorado River Agency [CRA] 1964b: 3)."

With the completion of Hoover Dam in 1935, there was no longer danger of the Colorado River flooding. Subsequently, on August 30, 1935, the construction of the Headgate Rock Dam was authorized, a structure which was completed in June, 1941, at a cost of \$4,632,775 (Young 1961: 198). Construction of the main canal from Headgate Rock Dam to the existing distribution system was started on July 1941, and completed on June 1942 (CRA 1964b: 3). This dam was built for irrigation, flood control, and to supply electric power for the reservation. When the water was first diverted at Headgate Rock Dam, the old pumping operation was terminated. Both Parker and Headgate Rock Dams were authorized by the River and Harbor Act of August 30, 1935 (49 Stat. 1039-1040).

In May, 1942, without consulting the Colorado River Tribal Council, 20,000 Japanese and Japanese-Americans were located at Poston by the War Relocation Authority (WRA). "In all, the WRA took temporary control of about 25,400 acres of land (Fontana 1958: 35)." During this period, irrigation systems were developed on over 1,000 acres of WRA land.

A major attempt to develop agricultural lands and extend irrigation systems on the Colorado River Reservation was the Navajo-Hopi Colonization Program. During the 1930's the Superintendent of the Colorado River Agency, C. H. Gensler, supported a plan to colonize the reservation with Indians from other reservations within the Colorado River drainage. Such a plan appeared reasonable since the 1865

Act established the Colorado River Reservation for the "Indians of said river and its tributaries (Fontana 1958: 8)."

Superintendent Gensler favored colonization as a means to protect Indian land ownership. The reservation contained over 75,000 acres of potentially irrigable land and it was feared that white pressure might obtain the land. Superintendent Gensler estimated that the Colorado River Reservation would support 2,896 families if the irrigation potential was realized (Fontana 1958: 40). The Chemehuevi and Mohave constituted a rather small population with a very large land base. "The question of ultimate water rights was immediately apparent, and the need was felt, to irrigate the Colorado River Reservation to protect the water rights for the land (Fontana 1958: 39)."

Congress believed that construction of another dam on the Colorado River would serve as a flood prevention measure and also as a source of power and irrigation. During the 1930's with the development of anti-depression programs such as Boulder and Parker Dams, and other conservation-reclamation projects along the Colorado River, the question of Indian water rights became apparent. The BIA favored development of the Colorado River Reservation to protect Indian water rights.

The BIA also noted the need to develop additional resources to help alleviate population pressures of the other reservations. This was especially true of the Navajo and Hopi Reservations where

stock reduction and other conservation programs were implemented to improve the overgrazed, depleted, range lands to provide better for a larger Indian population.

Ordinance No. 5 was approved between the Colorado River Tribal Council and the BIA to develop the irrigable portions of the reservation for colonist Indians and original residents. This agreement divided the reservation into two parts: a Southern Reserve of 75,000 irrigable acres for colonization by other Indians of the Colorado River drainage and a Northern Reserve of 25,000 acres for established residents, enrolled members of the Colorado River Tribe. Approximately 12,000 acres of land in the Northern Reserve was already under irrigation at this time (Fontana 1958: 36-37).

To compensate the established members of the Colorado River Tribe for loss of land in the Southern Reserve,

...it was agreed that 15,000 acres of land would be subjugated in the Northern Reserve, to be added to the 12,500 acres of land already developed there. At the same time, it was agreed that an equal amount of land would be subjugated in the Southern Reserve for the benefit of the Colonists (Young 1961: 201).

Congress passed the Navajo-Hopi Resettlement Program, authorized by the Long Range Act (P.L. 81-474). Initial colonization was slow because to establish land tenure, colonists had to forfeit their former tribal affiliations. Also, the question of land tenure was rather dubious and to secure tenure for colonists to the Colorado River Reservation it was necessary according to Ordinance No. 5 to become tribal members of the Colorado River Tribe and that the tribal council must accept such colonists. Those interested in

relocating did not wish to lose their assignments on the Colorado River Reservation.

Another reason for the slowness of the colonization program was the failure of Congress to appropriate necessary funds for the colonization program immediately following passage of the Long Act. "By April, 1948, only 7 Navajo families and about 16 Hopi families had settled on the project. By May 17, 1949, only 29 Hopi families and 14 Navajo families had relocated to the Colorado River Reservation (Fontana 1958: 53)." Not until June, 1948, did Congress provide large sums of money for the land development program of the colonists in the Southern Reserve (Fontana 1958: 53). "Two years later, Congress appropriated \$5,750,000 for relocation and resettlement of Navajo and Hopi Indians on the Colorado River Reservation (Act of April 19, 1950; 64 Stat 44-45 in Fontana 1958: 54)."

By 1950, 62 families had relocated on the reservation; and during the following year, some 145 colonist families resided on the Southern Reserve (Fontana 1958: 54). By the early fifties, the Chemehuevi and Mohave Indians, the enrolled members of the Colorado River Tribe, feared that with the growing number of colonists on the Southern Reserve that they might lose their dominant demographic and political position.

In 1951, the Colorado River Tribal Council rescinded Ordinance No. 5, but the Secretary of the Interior refused to approve the rescission. However, for all practical purposes, this act terminated the colonization program. The colonization program officially

continued from 1947 to 1957, a period in which many Hopi, Navajo, and Papago families were located on the Southern Reserve.

The tribal council then responded by altering Article IX of the tribal constitution, and by modifying the adoption clause to prevent colonists from participating in tribal government, declared the beneficial ownership of the reservation by the Colorado River Tribes. The tribes demanded payment of rental for lands used and occupied by the colonists. The modifications included: ". . . reserved 35,000 acres for use by members of the Colorado River Tribes and authorized the development of 65,000 acres under improvement leases to non-members lessees, whether Indians or otherwise, with rentals to be deposited to the credit of the Colorado River Tribes (Young 1961: 203)." It is interesting that this is the first proposed program by the tribes of improvement leases to non-Indians, a land development policy currently in practice.

The Solicitor for the Department of the Interior declared that the referendum did not invalidate Ordinance No. 5, which was an agreement between the BIA and the Colorado River Tribes and not an item of tribal legislation (Young 1961: 203).

"On August 11, 1952, the Colorado River Indian Tribes introduced before the United States Court of Claims a petition for relief of damages stemming from the colonization program (Fontana 1958: 58)." The tribes filed a petition before the Claims Commission which included relief in connection with the colonization claim (Fontana 1958: 59).

The Colorado River claims were settled by a mutual agreement between the United States Government and the Colorado River Tribe. The WRA claim was dropped including a claim against the Palo Verde Irrigation District which constructed an irrigation system on the river resulting in the inundation of some Indian land. These claims were settled on the condition that the Bureau of Reclamation develop a levee system on the banks of the Colorado River within the reservation.

Regardless of the many failures encountered during the Navajo-Hopi Colonization Program, a portion of the Southern Reserve was developed for irrigation farming and a water delivery system was constructed for this enterprise. The temporary establishment of the Japanese War Relocation Center in the Poston area and the colonization program helped develop the reservation beyond the traditional agricultural boundaries. The experience that the Navajo Tribe and the BIA received from the colonization program has been influential in development and planning of another large Indian reclamation project, the Navajo Indian Irrigation Project near Shiprock, Arizona.

Continued resource development on the Colorado River Indian Reservation, particularly reclaiming of desert lands for irrigation farming, has been a result of three important events. These include the following: (1) the tribes were granted permission to give long-term leases in 1955; (2) beneficial ownership was fixed for the tribes of the Colorado Reservation in 1963; and (3) the United States Supreme Court gave the tribes perfected water rights in 1964.

In 1955 Congress passed the Long Term Leasing Act. This provided for leasing Indian lands for periods of 25 years with a renewable option of an additional 25 years. Grazing lands are restricted to ten years, with provision for 25 agricultural leases only in cases that involve making substantial improvements on the land (U. S. Government 1955: 725). Some exceptions to the 1955 law have been granted by Congress in order to permit 99 year leasing for maximum development. On April 30, 1964 the Colorado River Indian Tribe obtained Congressional approval for a 99 year leasing authority.

The Reservation was established by the Act of Congress of March 3, 1865 for the "Indians of said (Colorado) River and its tributaries (13 Stat. 559 in Fontana 1958: 8)." This statement failed to designate a particular people, and extended ownership to all Indian groups of the Colorado River and its tributaries. However, the actual users and occupants of the reservation, the Mohaves and the Chemehuevis, long considered themselves as the legitimate owners of the land. The question of reservation ownership complicated and delayed efforts to implement a development program for the reservation. Until the title was settled, no long-term leasing was possible. However, permits could and were obtained for a period of one year and were revokable at will. These permits comprised agricultural, business, and residential leases. Before reservation title was established, the tribal council was reluctant to give grants to rights-of-way over reservation land because ownership was undetermined and proceeds might not be expended for their benefits.

On October 15, 1963, the Senate passed S-2111, a bill which fixed the beneficial ownership of the Colorado River Reservation (U.S. Government 1964a: 1). This gave title of the reservation to the tribes, the Mohave and Chemehuevi Indians, the original residents of the Colorado River Reservation, recognized by the 1934 Indian Reorganization Act. The bill provided also that colonist Indians be adopted by the tribe. Therefore, Indians eligible for land tenure had to be either enrolled tribal members or adopted members. This not only quieted the title and made land development possible, but ended the legal controversy created by the colonization program. This legislation included protection and ownership of all reservation land and water rights. A portion of the reservation in California was omitted from the bill because the boundary is subject to question due to changes in the course of the river (U.S. Government 1964a: 3).

Though a long-term leasing authority and the establishment of reservation title removed some of the hindrances to reservation development, the allocation of water for irrigation of newly developed lands might not have been possible without determining Indian water rights. In 1963, the Supreme Court of the United States gave the tribe a perfected water right for 107,588 acre-feet (U.S. Government 1964a: 2). This historic case culminated a long-standing water rights issue involving use of the waters of the Colorado River by the States of Arizona and California. Since this decision made possible large-scale subjugation of reservation land for irrigation, and is of

considerable importance to Indian water law, it will be examined, at some length, in the following section.

Arizona vs. California

For nearly 40 years, Arizona has contested with California to obtain what the State considered a fair and just share of the water of the Colorado River. A settlement was reached by the Supreme Court in 1963. It had its genesis in an attempt by Arizona to receive Congressional approval for the Central Arizona Project (CAP). However, twice the U.S. Senate approved the project, but twice it died in the House Interior and Insular Affairs Committee. The committee's principle objection to approving the project was because Arizona's legal right to the water of the Colorado River was not defined. On August 13, 1952 Arizona filed an action against California in the Supreme Court. Essentially it was a complaint against California and seven water-consuming public agencies of that State. The motion was granted on January 19, 1953.

It was really a suit to quiet title to a certain quantity of Colorado River water for beneficial, consumptive use by Arizona and to prevent California from taking more than its proper share. Two additional parties, the federal government and the State of Nevada, requested and received leave to intervene.

The court appointed George I. Haight, as Special Master to hear the case and submit a recommended decree. Later, the court requested that Utah and New Mexico should enter the case, however, only to the extent of their capacity as Lower Basin States.

Following the death of Special Master Haight in September, 1955, the court appointed Simon H. Rifkind to succeed him. The case took nearly two and one-half years--from June 14, 1956 to August 28, 1958. "All in all, the Colorado River case was one of the largest and most involved in the history of American water jurisprudence (AISC 1960: 6)." Judge Rifkind described the trial as, "The greatest struggle over water rights in the latter day history of the West (Mann 1963: 94)."

The material contained in the trial and the arguments of the respective parties is voluminous and therefore impossible to include in this study. Since our interest is Indian water rights, therefore, this will be examined in light of the Arizona-California Case.

The trial ended on July 1, 1959 and the matter was subject to consideration by the Master. On May 9, 1960 almost eight years after the start of litigation, the draft report was released. On June 30, 1960 Arizona and California had filed their comments on the Master's draft report. On June 3, 1963 the Supreme Court announced its opinion in Arizona vs. California in a decision that split the Court 5-3. The Court supported the main outlines of the position taken by Arizona, and adopted in general the recommendations of Special Master Rifkind.

The economic development and future of the Colorado River Reservation was enhanced by settlement of this suit. Prior to adjudication of water rights, expansion of potentially irrigable portions of the reservation was hampered. In fact, in 1957, six years before

the Supreme Court decision, the tribes attempted to lease some 65,000 acres of undeveloped land, to a private corporation, known as Colorado River Enterprises, Inc. of Phoenix, Arizona. The lessee was to relinquish all the lands back to the government within 25 years. However, the corporation lacked the necessary capital for this venture and the program was terminated. This proposed lease was protested by Arizona Interstate Stream Commission and by California through its Colorado River Board and its attorney general. The Arizona Power Authority opposed this development because it would result in loss of hydroelectric power from the Colorado River (Arizona Daily Star 1958).

Prior to the Supreme Court settlement, Arizona contended that the Federal Government had no right to make a reservation of navigable waters after Arizona became a State. Arizona also argued that navigable waters could not be reserved by Executive Orders and that the United States did not intend to reserve water for Indian Reservations. Arizona argued that the amount of water reserved for Indian reservations ought to be measured by "the reasonably foreseeable needs of the Indians living on the reservation rather than by the number of equitable acres (AISC 1961: 10)." Arizona contended that the judicial doctrine of equitable apportionment should be used to divide the water between the Indians and the other people in the State of Arizona.

Arizona's attorney contested the allocation of water for the various Indian Reservations as recommended in the Master's Report on the basis of the crucial need for the CAP in a "water-starved area" (AISC 1962: 17). It was argued that every acre-foot of water that is

reserved for the Indian--the Indian may never use and "is just an acre-foot less for the Central Arizona Project (AISC 1962: 18)."

The attorney argued that if Congress did not intend the reservations to be permanent institutions, then it should not have considered water rights to have been assigned to them in perpetuity.

During the trial, the attorney for the United States argued in favor of reserving water rights for potential irrigable lands rather than by present day use or needs. He added, "We would assert that the Indians should not be penalized because of their inability in the past to develop all of (their) irrigable lands or because of Congress' slowness to appropriate the funds necessary to accomplish full development (AISC 1962: 17)." Also, during the trial, the right of Indians to lease land for agricultural irrigation development was discussed. The government expressed the opinion that "Indians had the same right as 'any owner of real estate' to lease their lands and, with them, the appurtenant waters (AISC 1958: 61)."

Arizona had rested its case on the contention that the federal government had no authority, after Arizona became a State, to reserve waters for the use and benefit of federally reserved lands upon the statements in *Pollard's Lessee v. Hagan*, 3 How. 212 (1845), and *Shively v. Bowlby*, 152 U.S. 1 (1894). The court declared the following about the cases mentioned above:

. . .involved only the shores of and lands beneath navigable waters. They do not determine the problem before us and cannot be accepted as limiting the broad powers of the United States to regulate navigable waters under the Commerce Clause and to regulate government land under Article IV, 3, of the

Constitution. We have no doubt about the power of the United States under these clauses to reserve water rights for its reservations and its property (U.S. Government 1964c: 48).

Arizona also maintained that water rights cannot be reserved by Executive Order. The Court stated in its decision: "In our view, these reservations, like those created directly by Congress, were not limited to land, but included waters as well. Congress and the Executive have ever since recognized these as Indian Reservations (U.S. Government 1964c: 48)."

Arizona challenged the Master's Report by stating that there is no evidence that the United States intended to reserve water for Indian Reservations when they were established. The Court declared that:

Most of the land in these reservations is and always has been arid. If the water necessary to sustain life is to be had, it must come from the Colorado River or its tributaries. It can be said without overstatement that when the Indians were put on these reservations they were not considered to be located in the most desirable area of the Nation. It is possible to believe that when Congress created the great Colorado River Indian Reservation and when the Executive Department of this Nation created the other reservations they were unaware that most of the lands were of the desert kind--hot, scorching sands--and that water from the river would be essential to the life of the Indian people and to the animals they hunted and the crops they raised (U.S. Government 1964c: 49).

The Court maintained that the implied reservation of water rights pertaining to Indian land is related to the Indian water rights case, *Winters v. United States*. The Court stated that "The Government, when it created that Indian Reservation, intended to deal fairly with the Indians by reserving for them the waters without which their lands

would have been useless (U.S. Government 1964c: 50)." Further the Court remarked "that the United States did reserve the water rights for the Indians effective as of the time the Indian Reservations were created. This means, as the Master held, that these water rights, having vested before the Act was passed in 1929, are 'present perfected rights' and as such are entitled to priority under the Act (U.S. Government 1964c: 50)."

The Court agreed with the Master that "the principle underlying the reservation of water rights for Indian Reservations was equally applicable to other federal establishments, such as National Recreation Areas and National Forests (U.S. Government 1964c: 51)."

In this Supreme Court decision the government on behalf of five Indian Reservations (Chemehuevi, Cocopah, Yuma, Colorado River and Fort Mohave) in Arizona, California, and Nevada, affirmed the rights to water in the mainstream of the Colorado River. The aggregate quantity of water which the Master held was reserved for all the reservations is about 1,000,000 acre-feet, to be used on around 135,000 irrigable acres of land (U.S. Government 1964c: 46). The Indians, of course, had never used so much water beneficially. The doctrine of reserved rights allowed the court to award the five reservations a liberal apportionment. The Colorado River Tribe's water right was adjudicated for 107,588 acres, requiring a diversion of 717,612 feet. As stated by the Supreme Court: "The Master found both as a matter of fact and law that when the United States created these reservations or added to them, it reserved not only land but also the use of enough

water from the Colorado to irrigate the irrigable portions of the reserved lands (U.S. Government 1964c: 46)."

The Court remarked that the doctrine of equitable apportionment did not apply to Indian Reservations but "is a method of resolving water disputes between States (U.S. Government 1964c: 47)."

Furthermore, an Indian Reservation is not a State. "Moreover, even were we to treat an Indian Reservation like a State, equitable apportionment would still not control since, under our view, the Indian claims here are governed by the statutes and Executive Orders creating the reservations (U.S. Government 1964c: 47)."

The Court maintained that Indian water use is to be charged against the State where the reservation is located "We note our agreement with the Master that all uses of mainstream water within a State are to be charged against that State's apportionment, which of course includes uses by the United States (U.S. Government 1964c: 52)."

The Arizona California Supreme Court settlement has greatly affected the future of economic expansion of the Colorado River Indian Reservation by guaranteeing Indian water rights. This has encouraged private leasing of agricultural, recreational, and industrial lands and development of the tribal recreation enterprise. Both tribal and lessee advertisements which describe the economic opportunities of the reservation emphasize the fact that Indians have an abundance of water protected by the United States Government. ". . .the Parker area has in magnificent abundance what no desert place is supposed to

have--water (Brennan 1968: 8)." "Assured of adequate irrigation water by the Supreme Court decision for thousands of acres of highly productive land, agriculture has joined hands with science to transfer the brush-choked river bottom into a virtual Garden of Eden (CRIT 1967a: 2)."

The following is an excerpt from a newspaper published by the Big River residential development. It not only emphasizes the importance of the Congressional long-term leasing act, but the acquisition of guaranteed water rights: "Now an Act of Congress makes it possible for you to buy a lease-hold estate on land at Big River, California, with water rights secured to you by a Supreme Court decision (Big River Review 1968)."

However, the BIA and the Colorado River Tribal Council express concern that failure or slow development and utilization of this guaranteed water resource might jeopardize Indian Water Rights as this scarce resource is sought by the States of California and Arizona. The tribal newsletter remarked the following:

The above basis on which the Colorado River Tribes have won in the water case appears to be iron-clad, but this doesn't mean that the Colorado River Tribes should sit still and not make use of the water as fast as they can. Arizona, the State where the reservation is situated and where the Indians reside, raised many arguments against the Colorado River Indians on the Master's recommendation. This means that Arizona will continue to explore every possible means to take away some of the water that the Court has allocated to the Indians (Smoke Signals 1963).

In a recent edition of the newsletter it was stated:

During this past year we have gotten water on probably another four thousand acres. This means we are putting our water to use. We have been given enough water to irrigate around 107,000 acres and we better put it to use the best way we can, because if we don't do it soon we might lose it to someone else for not using it. I know of some other tribes with good water rights, but the river through the reservation runs dry. So the best thing is to put what you have to use, if not, someone else will get it (Smoke Signals 1968c).

Reservation Development and the Improvement Lease

Since the Colorado River Indian Tribe lacks sufficient capital to develop the agricultural potentials of their reservation, it is the policy of the BIA and the tribe to develop the reservation by improvement leasing to private individuals and concerns. There are basically two kinds of development leases: the agricultural lease and the commercial or business lease.

Although Congress granted a 99 year leasing authority, there are no 99 year leases because Bureau planners consider it as not only too long, but economically unfeasible. Agricultural development leases are for a 25 year period with requirements of improvements as stated in the lease every five years. However, the maximum time period for a lease in which the land is already developed is ten years and, even here, improvements are necessary and are stated in the lease. An exception to the 25 year agricultural development lease is the citrus lease which is for a 40 year period. Here the period is longer to accommodate the time required for growth and maturity of citrus trees. The 40 year citrus lease is an exception and therefore requires special approval of the Secretary of the Interior.

Business or commercial leases may be extended for a 65 year period. This maximum time period is considered necessary where considerable capital is invested on Indian land for large projects such as residential, commercial, and recreational developments. A large portion of commercial or business leases are within the town of Parker as the Indians own approximately 1,025 lots within the community. Of these town lots, only a few remain unleased. These lots comprise commercial, industrial and homesite leases.

All leases are bonded for the development; these leases may be agricultural as well as commercial. The lessee is bonded for one-fifth of the total development. According to the Colorado River Agency Realty Officer, a guaranteed annual rental is slightly below economic rent. In addition to this, the tribe receives a certain percentage of the gross, and thus it is not necessary to adjust the rent, as this is done automatically.

All land from the river to the levee road is zoned for conservation, recreation, and commercial development. There are no agricultural activities within this area except that some Indians have tribal permission to run their stock in this region. There is no stipulated number of feet from the river bank as the levee road differs in the distance roughly 600 feet.

A lessee may sublease if he so desires. However, land speculation is not possible because the development lease requires so much in land improvement each five years; this, of course, is in the adjustment clause designed to conform with fair market value standards

for the time, place, and usages. An appraisal is first made upon a prospective plot of land to be developed. Then an offer will be made by the potential lessee. Appraisals are not made by local individuals as this would tend to bias their results. Therefore appraisals are made through the BIA Area Office in Phoenix. A proposed lease is studied by the Economic Development Board, a committee composed of Agency staff and tribal members. This board reviews all proposals to lease land.

An agricultural development lease contains a number of obligations relating to development of the land. Each lease differs according to the requirements and conditions of the lease. Within a specified period the land is cleared, leveled, and made ready for cultivation. The lessee usually is required to construct concrete-lined farm ditches, and even main laterals and drainage ditches.

Generally, a lessee of an agricultural improvement lease is expected to develop his land within a ten year period. That is, clear and level the land, and in accordance with the particular lease he must construct the irrigation ditches and drainage systems, establish a conservation-minded crop rotation program, and utilize proper farm equipment and build necessary sheds and living quarters.

Development costs and the general project design are included in the lease before it is signed. The project design specified that an agricultural lease must be in agreement with the irrigation system project standards. Before a lease is signed, the various restrictions and obligations are read into the lease; the costs of construction

are included in the irrigation design which the agency submits to the area office and the Secretary of Interior for approval. Clauses within an agricultural lease protect farm land and the irrigation system. Periodically, the BIA inspects the irrigation system to see if it is adequately maintained. There is some flexibility in working out a lease and changes may be made to adjust to reasonable demands of the lessee. Leases are under restrictions to prevent poor farming practices as one poorly farmed plot will endanger those around it. Weed control along ditches and canals must be adhered to according to the master lease.

A major development or improvement lease may be broken down by the use indicated. For example, the Bruce Church lease which is a major pioneer agricultural lease includes not only agricultural land but residential and commercial leases. Packing sheds may therefore be regarded as commercial. The ranch headquarters may be referred to as residential and are designated as such.

Shortly before the Bruce Church lease was concluded in 1964, bidding was a standard policy for leasing. However, bidding attracted a lot of people who were curious but did not make any bids. Now, bidding is not confined to all leases. The Realty Officer noted that more leases are now concluded without bidding procedures. In fact, negotiated leases often bring higher rentals than those by bids because the lessor is in a favorable position to bargain or demand a higher rent.

Individual lease rentals are a matter of confidence and privacy. Thus, the terms of individual leases cannot be made public, but Bruce Church was an early developer and the land was rented for a nominal sum. This was necessary to prove that reservation land could become valuable agricultural land, once it had been cleared and claimed. After Bruce Church, Inc. cleared and cultivated their leased land, other investors were attracted and the leasing program got underway. The agricultural development lease program was begun in 1964 with the "big lease" with Bruce Church, Inc. on 6,282 acres. Agricultural improvement leases now include over 23,000 acres and number 23 development leases. Lease payments have increased from 25 percent to 75 percent since the pioneer development lease with Bruce Church, Inc. (CRA 1968c: 10). In 1966, 534 agricultural leases converting 41,347 acres brought to the tribes and individual Indians a cash income of \$721,702.

During the summer of 1968, the Phoenix Area Office of the BIA examined current leasing policies on the Colorado River Indian Reservation and was very critical of the Parker Agency for allowing nominal lease rents. The agency was disturbed about the recent reevaluation by the Area Office that claims that Indians are not receiving the rent they are entitled to. To compound the problem, some lessees have concluded a development lease with the approval of the tribal council and have been allowed to clear and develop the land for cultivation without waiting for the official approval of the Secretary of the Interior. The agency fears that larger rent payments may force some

lessees off the reservation. According to an agency engineer, the Area Office investigators failed to recognize the total development costs necessary to put the land in use. He noted that they look only to the maximum rents of \$50.00 an acre and decry the fact that newly developed land may be leased for as little as \$5.00 per acre. Area Office economists believe that on most undeveloped lands the tribes ought to receive \$50.00 per acre by the 15 years as this compares well with the average lease payment within the Palo Verde District just north of Blythe, California and south of the reservation.

The Realty Officer said that it is the policy of the agency to give Indians job preference where possible in business leases. This is written in all business leases and not agricultural leases because agriculture has too many demands. The effects of lessee development upon Indian employment has been criticized by Indians. Indians are said to receive low-paying jobs and are not expected to advance or serve in managerial positions. Indian work habits are not considered and hence no adjustment is made to accommodate these patterns.

The Realty Department of the agency does not engage in advertising business and agricultural leases. There is no budget for this purpose, but appropriations are made to the tribe by the BIA pamphlets about the tribal leasing program and economic opportunities of the reservation are obtainable from the tribe.

Despite bringing thousands of acres of virgin land under cultivation through improvement leasing, the agency has complained that this was accomplished with an inadequate number of BIA technicians.

"Both our SMC funds and agricultural extension funds have been reduced. Basically, the soil and moisture technicians are used for these plans, and each plan has produced a return either in production, management, or capital improvement, and the majority has produced added income in the form of increased land rental (CRA 1967b: 22)."

The agency foresees that as more land comes into use that the demand for increased technical assistance to the farmer will be more apparent. The agency has requested additional technicians and greater operating funds to maintain a high quality program.

A decrease in SMC (Soil Moisture Conservation) funds will jeopardize the Indian leasing program because it will further limit the performance checks on leases. Enforcement of lease stipulations will further limit the performance checks on leases. Enforcement of lease stipulations will go unnoticed. The individual Indian will receive less assistance with his management and production (CRA 1967b: 23).

Problems Confronting Reservation Development

With exception of improvement leasing, the institution of most reservation development projects depends upon the ability of the tribe to obtain the necessary federal appropriations and loans. Other factors influencing reservation development are the reservation land policy, a boundary dispute, and tribal relations with state, county, and municipal governments.

BIA administrators complain that the patchwork of land holding practices on the reservation interfere with intelligent land planning. There are six distinct land classifications. These include:

(1) tribal lands; (2) allotments to individual Indians under trust patents giving them full ownership, control, and inheritance rights; (3) exchange assignments that permit the present operator to designate a single beneficiary for the assignments; (4) standard assignments that allow the operator control only during the life of the assignee; and (5) leased land (tribal, assigned, or allotted); and (6) land that is withdrawn by the federal government for such uses as the agency and Public Health facilities.

The Colorado River Agency endorses a plan to reclaim and consolidate allotted and assigned land. This system would transfer all lands, with exception of homesites, under tribal lands. Under this arrangement, lease payments derived from these lands would be distributed among tribal members on a per capita basis. A Tribal Land Committee is currently drafting a new land policy which will be put before the tribe in a general election.

Squatter Claims and Boundary Settlement

There are approximately some 900 settlers and their families along the lower Colorado River, from the Mexican Border to Davis Dam, 200 miles upstream. The government reserves a 200 foot strip on both sides of the river for river improvement work. This 200 foot strip is for flood control and wildlife use. "Squatters" in some areas claim not only this area along the river but other lands which the federal government has withdrawn. Land disputes along the Lower Colorado River involve thousands of acres and millions of dollars worth of realty in

Southern California and Arizona. The Lower Colorado River Land Use Office was created to investigate squatter occupancy and claims, and to develop a plan of use and development along the Lower Colorado River.

The BIA has noted that the squatter situation on Indian land has been a definite hindrance to reservation planning. The reservation boundary dispute has caused the Colorado River Tribal Council to prevent the Bureau of Reclamation to continue river retention work below Agnes Wilson Road. As will be noted, the boundary problem was a major reason the tribal council opposed a parkway proposed by the Lower Colorado River Land Use Office. As one BIA official remarked, "How can you use and develop the land unless you know that it belongs to you?" The Bureau is engaged with land and legal experts to establish boundary surveys, and to examine tribal claims that thousands of acres of reservation land is occupied by these squatters are claimed by the Colorado River Indian Tribes. The tribal attorney, Mr. Fred Kurgis, and the BIA (Parker Agency and Phoenix Area Office) are currently studying the squatter situation. Most of the lands are located on the California side below Wagon Wheel Camp. The tribes are now preparing to take this dispute to court in order to regain what they claim is Indian land and within the original boundary.

A BIA official remarked that in the beginning, the Indians were rather unsophisticated and not really sure of the boundaries nor how to protect these boundaries and the same may be said of the BIA which was at that time weak and too often ineffective. They both

allowed people to move in on reservation land, and in some cases, received some lease rental, but today these squatters now believe they possess the land by having occupied it for so many years.

Tribal officials expressing confidence in regaining this land, remark that it will not be settled with a money settlement as in aboriginal claims, because the land in question is included within the reservation boundary. The tribal chairman, Mr. Bill Alcaida, said,

If the tribes win in the courts over the squatters, and I know that we will, then we will go by the old meander line of the early boundary and gain all the land held today by the squatters, but there are some acres which are located on the Arizona side, which according to the old boundary, are outside the reservation, though today contained within the boundary. These acres will be lost, but the transfer of thousands of acres which the squatters occupy will more than compensate for this transfer.

It might be asked, providing that a settlement in the squatter dispute is achieved and the reservation receives additional land, if this would in some way alter the present allocation of 107,588 acre water rights. A BIA official remarked that he had no idea how, if at all, water rights would be affected, if additional squatter land were ceded to the reservation. Until recently, none of the squatters ever leased this disputed land from the tribes. However, one resort operator, whose lands are located below Wagon Wheel Camp at one time paid the tribes rent for a lease, but later under advice of a lawyer, refused to continue payment declaring that the tribes did not possess

legal title to the land. Later, this individual became convinced that his status was indeed that of a squatter on Indian land and attempted to obtain a lease. But the annual rent payment requested by the tribes seemed to him to be excessive, and he refused to accept the lease. He again claimed title to the land in question. He has estimated that he has spent over \$50,000 in development of his resort which includes a bar, trailer court, and boat landing. He now fears that he will eventually be evicted.

This individual claims that the government cannot evict him because the property in question is part of what is now dry portions of the bed of the Colorado River in areas where the river channel has moved and meandered, and hence belongs to the State of California as the owner of the bed of the Colorado River within the state's boundaries. The government contends that the lands are not a part of the river bed, and are dry uplands, along with land masses formed by accretion. A recent opinion concerning this dispute was written by Senior United States District Judge Harry C. Westover in the two test cases. "The defendants were described as 'trespassers'--either upon land belonging to the State of California (Parker Pioneer 1968)." Nevertheless, the State of California recently filed papers in federal court admitting that the federal government owns the lands occupied by the defendants in this case, and disclaims any interest in them. As pointed out by Assistant U. S. Attorney Coleman, the position taken by the United States in the test cases is now thereby vindicated.

The tribe expects that squatters upon reservation land will gradually be evicted. Much of this disputed land is already or could be developed for recreation and farming. Acquiring this land would certainly increase tribal revenue and employment, especially in recreation-based resources as it includes several trailer courts, and river resorts, and excellent farm land. The tribe is hopeful that it will not be a long-term legal battle as this would incur a financial burden of paying legal fees as experienced in the Arizona-California case. They hope that much of this problem will be resolved with the Federal government and the squatters in question.

The BIA has reported that reservation squatters not only occupy thousands of acres in the southern boundary on the California side, but in some sections of the northern boundary as well. In the latter location, the land held by squatters is less than that of the southern area in dispute. In the northern portion there is approximately one-half a section of land occupied by squatters. The tribal chairman estimates that some 8,000 acres claimed by squatters belong to the reservation.

Some years ago, the tribe and the BIA attempted to examine some of the disputed territory in the southern area of the Blythe Valley to determine the meander lines which date back to the 1870's and are the original boundary lines. They were greeted by squatters who farm the area. These squatters were armed with shot guns, and forced the survey party to leave the area.

Officials from the Area Office are attempting to establish the original boundary locations. Thus far, they have located the boundary from the top of Riverside Mountain down the river to township 5 which is almost to the Blythe Weir. The tribe has marked the western boundary to this location.

Many of the so-called squatters are not pleased with the tribe claim to the boundary. In September, 1968, a meeting was convened by the tribe and the BIA with some 20 squatters. This was done to discuss the problems and to establish better communication and understanding between the parties involved.

Mr. Heddon from the Area Officer, Mr. Artichoker, new superintendent, Mr. Fred Kirgis, tribal attorney, and the tribal chairman met with these squatters who have formed a group known as "The Pioneer Land Settlers." We have found a portion of our boundary below Riverside Mountains and have posted it. Your tribal council has entered into a lease with one of the people who have been using these lands and the Tribe has not been receiving any funds for it. We will be getting some of the others to lease as soon as time permits (Smoke Signals 1968c).

The Lower Colorado Land Use Office

The Lower Colorado River Land Use Plan was established in Yuma, Arizona on May, 1961 by the Secretary of the Interior to investigate illegal occupancy of reclamation, withdrawn and acquired lands. This office has developed a master plan that includes some 507 miles of river frontage for recreation use. This is essentially a long-range program that designates the river frontage for water fowl use, camping, picnicking, boating, cabin sites, and other public recreational uses (Bisbee Daily Review 1962).

The Colorado River Land Use Office has listed the value of public and withdrawn lands along the Colorado River in order of economic importance. According to this scale, the most important use is recreation, followed by grazing and mining. The office also notes that the commercial activities of the urban areas along the river is of considerable economic importance, geared to agriculture and tourism (U.S. Department of Interior 1964b: 17).

The planning area of the Lower Colorado River Land Use office includes the five Indian reservations of the Lower Colorado River Basin, which comprise 340,488 acres. With the exception of the Cocopa and Chemehuevi Reservations, the Colorado River, Fort Yuma, and Fort Mohave Reservations possess approximately 110 miles of river shoreline. Unlike the withdrawn public lands with which most of the plan deals, Indian lands are essentially the same as private holdings. Therefore, the Office notes that "The extent and character of development largely depends upon the wishes of the Indians (U.S. Department of Interior 1964b: 17)."

The Lower Colorado River Land Use Plan appears to be compatible with the plans which have been developed for the Colorado River Indian Tribe and the Mohave Indian Tribe on their respective reservations.

The BIA and tribal officials have remarked that the Lower Colorado River Land Use office has, on some occasions, failed to consult the Colorado River Agency and tribal council on matters pertaining to planning and development of the lower Colorado River Basin. A recent example of the lack of coordination is a proposed parkway to

be constructed along both sides of the river from Yuma north towards Lake Meade. The proposed parkway enters the reservation from the lower end on the Arizona side and continues upstream along the river to the Blythe Weir where it crosses the river and runs north along the mountains. It follows west of the Riverside Mountains and then returns to the river in the vicinity of Vidal and follows along the west boundary of the reservation to Monumental Peak and through Copper Basin, and crosses the river several times before entering the area of Davis.

The Colorado River Tribal Council has met with the Quechan, Fort Mohave, and Cocopa Tribal Councils to discuss the parkway and its effects upon the reservations. The Tribal Chairman of Colorado River Tribes remarked:

We opposed it for the reason we want our boundary cleared up once and for all. We have been asking for this for many years. We know Secretary Udall can help us in this matter very much, because he is sitting where he can do us a lot of good. He can give it to us without too many problems (Smoke Signals 1968b).

The Fort Mohave and Quechan Tribal Councils opposed the parkway because of similar boundary problems. The three tribal councils expressed their opposition to the parkway and criticized the Lower Colorado River Land Use office for failing to notify them of the proposed highway which would include lands of all three reservations.

County, State, and Municipal Levels

Within the boundaries of the Colorado River Indian Reservation are portions of two states and three counties. The latter three

include Yuma County in Arizona, and San Bernardino and Riverside Counties in California. On the west bank of the reservation are the two California counties, San Bernardino County with 33,336 acres of Indian land and Riverside County with 5,000 acres.

Yuma County contains the greatest share of reservation land, 225,836 acres. The State of Arizona has a good working relationship with the Colorado River Indian Tribe, and according to agency officials, has never discouraged reservation development since the tribe's water rights were adjudicated in 1963. For the most part, the relationship between the tribe and Yuma County has been good.

Nevertheless, the tribal chairman remarked that the tribe could receive better support from Yuma County in their efforts to obtain federal appropriations to extend the nearly half-completed Colorado River Indian Irrigation Project. He added, that active endorsement by the county might provide the additional influence to spur Congress into allocating the necessary funds. He suggested that this lack of response from Yuma County may be explained by the simple fact that county governments often complain that no property taxes are derived from Indian lands. He stated that this situation is especially true of the two California counties which are neither helpful nor interested in reservation development, particularly the extension of the Indian irrigation system, because California does not encourage Arizona to draw water from the Colorado River.

Agency spokesmen said that, under Public Law 280, the state may have jurisdiction to enforce its zoning and building ordinance

codes upon a reservation, providing that the respective Indian reservation has approved Public Law 280. The state may then delegate the enforcement of said codes to the county or a subdivision of the state government. However, the Colorado River Reservation has never approved this legislation. Agency officers noted that the tribe has, by consent, agreed to adhere to state building codes, but this in no way requires the Indian community to comply or recognize county codes.

Tribal and Bureau personnel have acknowledged that it has been somewhat difficult to develop reservation lands located on the California side, because county zoning regulations have halted or retarded commercial development. San Bernardino County has very detailed and stringent zoning ordinances. In fact, these codes are more restrictive than those of the State of California.

BIA administrators have contended that the county attempted to discourage and prevent development on the California side of the Colorado River Indian Reservation. County insistence of the enforcement of local ordinances on privately lease-held Indian land, on several occasions, caused postponement of reservation development of commercial and recreation facilities. The efforts to deter tribal development on the California side may have been, in part, due to the fact that the counties receive no property taxes from Indian lands. No doubt, another reason was that commercial and recreation development leases on the west bank of the Colorado River would subject existing and future tax paying businesses to compete with reservation developments. It is possible that certain private interests, located near the

Colorado River Reservation within San Bernardino and Riverside Counties, may have had some degree of political influence to encourage county governments to attempt to block private least developments on the reservation. There are several examples of a conflict situation arising from the county's rejection or review of construction and development upon privately leased Indian land on the west bank of the river.

A trailer park lessee on the California side of the reservation was in conflict with the San Bernardino County Health Department which sought a permanent injunction based on a complaint that wiring in the trailer lot was a health hazard. The lessee's attorney argued that the county has no authority to enforce county ordinances of the State Mobile Home Park Act on the property because it is located on Indian Reservation land. This injunction was dismissed on these grounds.

Another example is an individual lessee who invested his entire life savings developing a trailer court located on the northern portion, California side of the river. For some two years he has been approached by the county concerning his development plans which according to the county did not meet required zoning restrictions. He has leveled his land and put in foundations, but all subsequent development has been curtailed and this lessee is discouraged. Such experiences, of course, are harmful to reservation development and discourage potential lessees.

Also, another trailer court, gas station and post office have suffered setbacks in development due to restrictions in the county

code. Thus far, the tribe has not legally challenged the county, but has sent tribal and BIA representatives to the various hearings where the lessee presented his case.

Interestingly enough, a large development lease on the California portion of the reservation has encountered no interference from either state or county. This may be due to the fact that these lessees can easily afford to contest such matters, and perhaps have more influence upon county and state administrators than do small lessees.

A BIA spokesman said that "The efforts of San Bernardino County to interfere, confuse, and hinder development of Indian land has already been costly to the tribes." He believed that the tribes do not realize the extent of damage or income loss as a result of this policy to harass tribal planning. He enumerated some of these damages which include loss of potential lessees. This situation has slowed development and resulted in loss of revenue to the tribe.

The conflict with county codes and lease development on Indian land may recently have been settled. At a hearing at the San Bernardino County Office in May, 1968, a lessee argued that the county could not force closure of his commercial enterprise as it was on Indian land, and therefore not subject to county regulations. At this hearing, it was concluded that the county could not enforce its own rules and codes upon any development located within the reservation boundaries. Tribal and agency officials interpreted this decision as an admission by the county that Indian property rights are

exclusive of county laws. They also view it as a favorable indication of continued reservation development free from external harassment.

The principal commercial center for the reservation is the Town of Parker, Arizona. It has a resident population of approximately 2,000 and an estimated trading relationship with over 6,000 residing in the general area. Parker is located in the northwest corner of Yuma County, on the east bank of the Colorado River, opposite the small community of Earp, California.

The Town of Parker is almost totally economically dependent upon reservation development of agricultural, industrial, commercial, and recreational resources. Most Parker residents are employed in commercial and agricultural enterprises, and by government agencies. In fact, the economic future of the town is contingent upon continued reservation development and an expanding tourist economy. Parker residents are hopeful that the diversion point for the Central Arizona Project will be located on Lake Havasu, just north of town. They anticipate that construction and operation of this installation will be of considerable benefit to the local business community.

Aside from informal relations, the town and reservation interact through meetings of various governmental and community organizations. These comprise the tribal and town councils, the Parker Chamber of Commerce, and the Parker Development Board. Tribal representatives seldom attend town meetings. Likewise, town councilmen infrequently attend tribal meetings. The substantial Indian

population of several hundred within the town do not participate in civic government.

The tribe is a member of the Parker Chamber of Commerce. This organization has done much to promote reservation development by publicizing Indian development potentials. The tribe is also represented on the Parker Development Board, an organization of businessmen to promote the economic development of the Parker area. The informal meetings of the Board provide a successful means of communication between the tribe and the local community, where development plans and problems can be discussed.

The Town of Parker has consistently opposed those reservation projects which present a possible threat to the town economy. Naturally, the town council and local residents have actively supported those reservation developments which will benefit the town. Indian agricultural development within the last six years has made a notable economic impact upon the town. Essentially, this is a result of the establishment of Indian water rights by the Supreme Court in 1963, the subsequent extension of the Colorado River Indian Irrigation Project, and the subjugation of additional reservation lands for agricultural production.

Local businessmen endorsed and, in some cases, invested in a textile mill which was developed on Indian land. Following the initial failure of this economic venture, the combined efforts of the Mayor of Parker and the tribal council were successful in reopening the mill to industry. During the summer of 1968, a

representative of the Parker business community accompanied tribal leaders to the national capital in an unsuccessful attempt to obtain federal appropriations to extend the Colorado River Indian Irrigation Project. Many Parker businesses cooperated with the reservation by selling tribal fishing and hunting permits, and distributing reservation brochures which advertise the agricultural and recreation assets of the reservation.

Traditionally, Parker residents have contended that because the reservation surrounds the town, this condition has prevented normal residential and economic growth of the town. The townsite consists of 973.39 acres. Approximately 1,025 lots in the town belong to the tribe. As late as 1957, the local town newspaper printed an editorial endorsing the sale of town lots owned by the tribe contending that these parcels ought to be opened to "private enterprise" (Fontana 1958: 34). Tribal leaders countered by stating that the tribe is in the process of developing Indian land and these efforts constitute a form of private enterprise.

Power of sale of town lots was granted in 1939 (Aug. 5, 1939; 53 Stat. 1203 in Fontana 1958: 34). These lands cannot be sold without the authorization of the Secretary of the Interior and the written consent from the tribal council. The Colorado River Indian Tribe is, of course, opposed to releasing tribally owned town lots as they are currently developing them through improvement leases.

Parker residents, especially those involved in local commercial enterprises, fear that some development projects on the reservation

might offer some degree of competition to established business in Parker. Tribal council members have remarked that many Parker businessmen are not enthusiastic about the Big River and Parker Palisades projects which will, in a sense, be independent towns on the reservation adjacent to the Town of Parker. Parker's commercial interests suspect that these projects may have possible adverse economic consequences to the existing business community.

Several years ago, the former tribal chairman expressed his concern over the lack of town cooperation pertaining to reservation development. "Why does the Town of Parker seem to oppose some of the proposed development on Indian land? We certainly do not try to oppose any of their developments, in fact, we try to help in every way possible (Smoke Signals 1967)?" This reference concerned a major development lease, Parker Palisades.

Tribal planners desire to expand Fifth Street which would connect Parker Palisades with State Highway 95. However, the town council expressed objection to this proposal claiming that this would draw traffic off the main highway leading to Parker; hence, motorists might by-pass the town, and Parker would incur economic losses. This project, when completed, will be larger than Parker. It will have its own sewer and water systems, a residential area, mobile home parks, and a man-made lagoon for recreation activities.

A recent conflict between the town and reservation concerns a proposed city sewer system. The original design, endorsed by the town council, located the plant on the Parker Palisades Development lease.

Of course, the tribal council refused to place the plant on a development lease. The town consented to another location and selected the municipal recreation area, a city park, leased from the tribe. The tribe argued that the new design would mean that 140 tribally-owned lots would be excluded from the sewer system (Smoke Signals 1967). Furthermore, the tribal council demanded that if the plant be located on Indian land, a more than nominal rent ought to be received.

Irrigation Design and Tribal Agricultural Development

Headgate Rock Dam is located on the Colorado River about one mile north of the City of Parker. It was completed in June, 1941. It controls the surface elevation of a 16-mile long stretch of the river extending almost to the tail of Parker Dam. The dam is of an earth and gravel fill construction, 1300 feet at the crest and about 55 feet high. A reinforced concrete spillway was constructed on the Arizona side of the river. It includes ten spillway gates. The entire flow of the Colorado River passes through these spillway gates. The gates are operated automatically, maintaining a constant upstream water elevation of 364.4 feet, sea level datum (CRA 1964b: 3).

Two electrically operated gates, also located at the spillway structure, regulate the flow of water into the project main canal. The project main canal has a designed capacity of 2,100 c.f.s. and runs from the diversion dam 17 miles to the wasteway structure.

Construction of the power system was begun in 1940 and the system was first energized in April 1941. The present maximum power demand is approximately 4,000 KW (CRA 1964b: 4). The power system is

developed primarily by appropriated reimbursable money. Some private capital advances are accepted to be repaid by credits on future power bills. Presently, the BIA manages and operates the irrigation and power systems. It is under advisement that in the future, perhaps in 25 to 50 years, the Colorado River Indian Tribe will receive control of both irrigation and power systems.

The Colorado River Irrigation design includes eventual service of 98,333 acres of irrigable valley lands in Arizona within the over-all project by construction of 40.6 miles of main laterals. The design includes some 147.1 miles of sublaterals, 50 miles of drainage ditches, five pumping plants, and 15 miles of dikes (CRA 1964b: 15).

The project area covers Yuma County, Arizona, and Riverside and San Bernardino Counties of California. The project is made up of three physical separate geographical divisions, each to have separate irrigation distribution systems. The largest unit is in the Valley of the Colorado River in Arizona with an irrigable area of 98,333 acres, exclusive of rights of way. The second division covers the mesa lands in Arizona which lie some 60 to 250 feet above the level of the valley lands. This area contains a potential net crop area of 6,329 acres. The third division is located on the California side consisting of valley lands and a narrow strip of mesa, with a potential net crop area of 8,213 acres. The total net crop area for all three sections of the irrigation system includes some 107,588 acres or the entire water rights received from the 1963 Supreme Court decision.

Current irrigation charge to all water users within the project is \$9.00 per acre foot. BIA officials have remarked that this is the best quality and cheapest water in the Southwest. This charge includes the O&M payment. It therefore includes drain control, general maintenance, and weed control. Thus the lessee pays for the O&M assessment and the project pays for the power for the lift like pumping for flood water irrigation. The agency collects power and irrigation bills. Of course, the BIA does not pay for sprinkler irrigation.

Under the original development plan for agricultural land development leases, field ditches are to be a maximum length of 1320 feet. However, since 1966 it was learned that 880 or 660 feet would be more efficient and would better serve water conservation. There is no published standard which demands that field ditches be 880 or 660 feet but this has become, in the last two or three years, a general pattern because it is best suited for irrigation. It also controls drainage problems. These ditches are concrete lined and well sealed. If the area is sandy, then a sprinkler system is employed.

Irrigated agriculture is the principal industry on the Colorado River Indian Reservation. The main agricultural products are alfalfa, cotton, vegetables, and small grains. While cotton and alfalfa have been the greatest income producing crops to the present time, cantaloupes and vegetables are becoming of increasing importance. Cattle feeding also is becoming of importance and offers an increasing market for feed crops of the project.

The land use of the Colorado River Reservation land now being irrigated is approximately as follows: cotton 20 percent; small grain 16 percent; grain sorghum 18 percent; pasture 16 percent; vegetables five percent and farmstead five percent. Approximately 20 percent of the acreage is being double cropped each year. The cotton acreage is influenced by cotton allotments and would be higher without allotments and present income relationships between the crops. In 1967, some 42,075 acres were in irrigation within the reservation. Over \$25,000 of tribal funds have been spent to reclaim reservation land during 1966 (CRA 1967a: 18). In February, 1967, some 15 leases were engaged in developing over 17,000 acres.

Agriculture depends on irrigation for its water supply. Development of the irrigation project has been rather slow and is the chief deterrent to the continued development of agricultural lands. The adjudicate water right 107,588 acres will be irrigated upon completion of land development program. When the agricultural potentials of the reservation are fully realized, the reservation will be the largest and the richest agricultural project in all of Yuma County.

There are 93,046 irrigable acres within the Parker Valley. The remainder of the water right will be used on mesa lands. There are 6,046 acres of mesa lands and this sum does not include Bouse Wash which has considerable agricultural potential for citrus crops. Originally the BIA had believed that irrigation development of Bouse Wash would be excluded from the water allotment, but now it appears that Bouse Wash may be considered within the Colorado River watershed.

According to BIA officials, this poses a difficult legal problem to be solved. Indian employment is greatly influenced by irrigation farming and land development. The 15 agricultural lessees on the reservation employ more than 75 Indians full time and many more for seasonal labor. A BIA communication noted the following: "The local economy is greatly dependent upon the payroll from our irrigation activities and the project when completed will furnish employment, either directly or indirectly, to an additional 4,000 families (CRA 1967b: 20)." In 1967 the total net income of irrigated land amounted to approximately \$1,016,816 demonstrating the economic impact on the general area of the reservation land development program. In fact, the 1967 total tribe income was \$478,898 (CRA 1968c: 12).

The number of irrigated acres increased from 31,940 acres in 1965, to 37,547 in 1966, to 42,075 in 1967 (CRA 1968b: n.p.). The average market value of crops produced for 1966 per acre was \$246.81 and the total market value of all crops produced was \$10,384,808. In 1967 the total market value of all crops produced was only \$7,153,624. This decrease in 1967 was due to the heavy infestation of pink bollworm and abnormal weather during the growing season (CRA 1968b: n.p.). In June, 1968 the agency predicted, if the BIA receives sufficient funds for continued development of the irrigation system, that by 1970 some 65,000 acres will be in irrigation and that by 1977 some 95,000 will be irrigated (CRA 1968c: 11).

Physical land inventories have been conducted on the project area prior to 1964 and a land classification system was devised along

the lines of that employed by the Bureau of Standards of Classification. Four classes of land were mapped in the project area, from highly suitable for irrigation farming to land of very poor productivity.

The lands within the project area in the State of Arizona are composed mainly of recent alluvium occupying the bottom lands east of the river. This area consists chiefly of river flood plains, gently sloping in gradient, characterized by local occurrence of low swales, old sloughs, and occasional sand dunes.

Valley portions of the reservation are made up of water-laid sediments comprising large beds of sand, overlaid and inter-stratified with layers of finer materials, left by former floods consisting of parent materials from all ages including the Archean Age to recent alluvial deposits. These materials include igneous, sedimentary, and metamorphic types. Individual soils cannot be traced to the parent rock because many materials were included in the ancient construction of the valley floor. Thus, this development has produced a complex and heterogeneous pattern of soil materials.

Usually soils are young, being of coarse, medium, and fine textured materials. The soils range in permeability from very slow to rapid and very rapid. The moisture retention values vary depending upon the texture and structure of the soil and the amount with the depth of thickness of layers and the general profile composition.

Some soil problems exist within the project area. These problems are sometimes quite complex and are influenced by the kind,

distribution, and source of parent materials. One of the most difficult problems is that related to various texture extremes, that is, very fine clays to coarse sand lands. The soils extremes can be successfully farmed by using special practices and specialized crops. Some lessees, such as Bruce Church have conducted a successful re-distribution of soils to integrate the soil types on the land.

Salinity and alkalinity conditions exist in some local areas. This situation can be greatly improved by copious irrigation, leaching, and special cropping practices in the early phase of development. The Colorado River water contains an estimated one ton of gypsum per acre-foot of water. River water contains about 16 parts per million of potassium which is adequate for the production of various crops adapted to the project area. Other areas where there is a combination of physical and chemical problems, such as along with high concentration of salts, require special practices to improve soil conditions.

BIA soil experts remark that irrigation and cultivation problems exist on the very fine clays and with coarse sandy lands, due to air and moisture relationship. Usually the bottom land soils are inherently rich in minerals and require the application and addition only of nitrogen and phosphates for sustained yield of crops.

The greatest concern to economic development according to the tribe and agency is the failure to obtain adequate federal appropriations to extend the irrigation system on the Colorado River Indian Reservation. No funds are available for the fiscal year 1969. The

irrigation development program has never received the amount requested by the tribe. Agency requests for continued development of the water delivery system on the reservation have been somewhat less than expected. For example, in 1967, the BIA requested \$1,755,000 but received only \$135,000 (CRA 1967b: 17). A BIA planner emphasizes the immediate need for these appropriations, "It is imperative that additional lands be developed and utilized each year, as soon as possible to preserve Indian water rights (CRA 1967b: 16)." The tribe has sent, on several occasions, delegations to Washington, D.C. to present requests for irrigation funds to Arizona Congressmen and the Department of the Interior.

If funds were forthcoming, the tribe could extend the main canal to the southern portions of the reservation where new lands could be irrigated. Some land south of the present extension of the main canal has been leased for agriculture; and a few lessees have already cleared the land, prepared the soil, and now await extension of the main canal so that they may efficiently irrigate the land.

In some cases, the lessees on the southern section of the reservation below the present main canal are putting in the canal system, although it may be from five to ten years until water will reach their laterals. Presently, those that have cleared and developed this land, now pump from the river for flood irrigation, though costs are greater. A large tract of land southeast of the main canal is being cleared for farming. The lessee will not wait for the extension of the main canal, but will construct his own temporary dirt canal

from the main canal. This water may be more saline than desired, but it will be serviceable until the main canal is brought into the area. West of this tract is another large tract and a lateral canal is under construction to irrigate the land and this lateral will run southward and may be used by another lessee to irrigate his land. BIA administrators have noted that in some locations below the southern limits of the main canal that water could be pumped from subsurface, but this will not be done because it would require considerable expense.

Tribal officials have expressed concern that failure to obtain irrigation funds will result in economic loss by retarding land development and tribal income. They fear that some lessees and potential renters will lose interest in tribal agricultural development and terminate their leases unless, in the near future, water can be conveyed to their land through extension of the main canal. Tribal chairman, Bill Alcaida, remarked that a lessee of a large tract is demanding that the main canal be extended to his land as was expected when he concluded the lease with the tribes. The tribe had no recourse but to inform this individual that he will have to wait for a reasonable period until canal expansion can be undertaken. This period may be from two, three or more years, depending upon when the tribes will receive construction funds. This lessee will not clear and develop the land until he knows he has irrigation facilities. It is feared that he may terminate the lease with the tribe, and that others may follow.

An engineer for the Colorado River Agency complained about the inability of Congress to meet irrigation requests of the tribes.

He stated that the reservation irrigation project is the least costly of any irrigation development in the United States. He said that it costs only about \$450 to \$500 per acre to develop the reservation land for cultivation. He contrasted the Colorado River Indian Irrigation Project with the San Juan Irrigation Project of the Navajo Reservation. The latter program was funded by Congress in spite of the fact that it costs approximately \$2,500 per acre to develop for agriculture. He also noted that the climate is an advantage on the Colorado River where there is a ten month growing season compared to about three months on the Navajo Reservation. He stated that it is illogical that federal funds were easily obtained for the Navajo Project while appropriations were denied to continue development of the successful Colorado River agricultural development program. He believes that failure to obtain this money may be attributed to politics, as well as poor decision-making, and the Vietnam War.

Tribal councilmen remarked that federal monies were always easy for the Navajo Tribe to obtain, and complained about the lack of funds for the Colorado River Indian Irrigation Project. However, federal appropriations for the Navajo Project for 1969 have been drastically cut.

Termination of the construction of the Colorado River irrigation project has caused lay-offs and job losses for Indians and non-Indians alike. The longer these funds are denied, the more expensive will be extension of the irrigation system due to inflation, rising costs for labor, equipment, and materials.

Government appropriations to the tribe for irrigation development are charged as a lien against the land and never will the tribe have to pay for this investment. Although if the tribe were to be terminated the charges would be against the land and included in termination.

The project engineer remarked that to develop the irrigation system and hence to protect Indian water rights, the tribe may have to receive loans. However, he added, that if the tribe were to obtain an EDA or a small reclamation loan, they would be burdened by many responsibilities and be required to pay off these loans. Development costs under such conditions would be exceedingly high as one must consider labor, heavy equipment, and managerial fees. He remarked that loans with a six percent interest would contribute to making irrigation development a very expensive undertaking.

Though the agency opposes development of the water delivery system through loans, the Colorado River Indian Tribe is considering requesting a Small Reclamation loan through the Small Reclamation Project Act. A maximum loan is \$6,000,000. Tribal officers are investigating this as a means to extend the main canal and continue the land development program, but fear that such a loan may tie up Indian land for security.

It is estimated that completion of the Colorado River Indian irrigation project would cost about \$10,000,000. To use an analogy, an agency planner remarked, "It is like laying a \$10 bill end to end to complete the system."

At present, BIA administrators believe that the best way to complete the extension of the main canal of the irrigation project, if Congress fails to comply with the necessary funds, is to lower the lease rent and have the lessee develop the system. It is the consensus of BIA personnel that the rent would be very nominal but in the long run, this would be the cheapest approach. They emphasize that after the 25 year lease period expires, that the rent received would bring substantial returns to the tribe. The consensus expressed by agency officials was that present day adult Indians would complain about such a proposal, but the next generation would realize good returns from the leases.

The Decline of the Indian Farmer

There has been an increase in the number of native and colonist farmers since construction of Headgate Rock Dam and the land subjugation programs of the 1940's and 1950's. However, since 1952 there has been a decline in the number of Indian farmers and an increase in the acreage leased to Indians. In 1952 there were some 141 native (Mohave and Chemehuevi) farmers and 132 colonist farmers (Kelly 1958: 4). As of the fall of 1968, the Colorado River Agency estimated that there are some 25 Indian farmers. This number includes those whose primary income resource is derived from farming. Of the total 42,075 acres farmed on the reservation for the calendar year 1967, Indian farmers cultivated 1,124 acres (individual Indian farmers' allotments and assignments) and Indian lessees farmed 3,565 acres. Indians farm

only 12 percent of the reservation agricultural lands. Non-Indian lessees farmed approximately 37,386 acres (CRA 1968a: n.p.).

This reduction in the number of Indian farmers reflects, to some degree, the current policy of the BIA to develop the land by improvement leases to private individuals rather than through federal appropriations and loans. Hence, no longer does reservation development policy of the BIA place primary emphasis upon Indian farming. This is essentially an antithesis of long established governmental policies that sought to produce self-sufficient Indian farmers.

There are economic reasons for the declining number of Indian farmers. Today successful farming requires up-to-date and expensive equipment, knowledge of modern farming skills, and the ability to obtain credit. Also a successful farmer must have an adequate acreage to farm rather than a fractured allotment or even an 80 acre allotment or assignment. In the Parker Valley, like elsewhere, large industrial farms are replacing the traditional small farmer.

From discussion with some twenty Mohave and colonist informants, it is apparent that successful Indian farmers are those who have adapted well to the non-Indian way of life, hence the relatively acculturated individuals who are competent businessmen and know the technological skills required by modern farming. These individuals are often called by other Indians "the Mexican farmers" or "the quarter blood Indians" or "the mixed Indians". The "Mexicans" (usually part Chemehuevi or Mohave) all farm together and conduct their own management meetings at their homes. They share equipment and labor and even extend credit to each other when necessary.

Almost all Indians remarked that the decline in Indian farming was, in part, due to a cotton gin owner and operator who broke many Indian farmers by forcing them into debt. Perhaps, this was the failure of the Indian farmer to manage his business affairs properly and because he had little capital to successfully engage in farming. One informant remarked, "Mr. . . .just short-changed Indians and took advantage of them and they went broke right fast."

One Mohave, a tribal council member, who previously had farmed was bitter about the man who extended him credit. He said that he had once farmed over 300 acres but like most Indian farmers had become deeply saddled with debts to the gin for gin operations, seed, and equipment. He stated that most Mohave and Chemehuevis want to be farmers. However, the gin owner took advantage of the Indians and forced them into debt and hence out of farming. "Those poor Indians did not do anything about the way he (the gin operator) ran the gin. They never fought back, and he would take their farm equipment from them and just leave them helpless. That is the reason why there aren't many of us farming today."

He added that the gin operator had handled his account and collected from the Indians without showing them their records or explaining their financial situation. Some years ago, his grandson was killed while operating a Farmall tractor. Because of the association of the tractor with the death, he could no longer use it and desired to sell it as soon as possible. This gin operator offered him \$1500 for the Farmall tractor which the Indian farmer considered a good

offer so the tractor was sold. But the gin operator was to have subtracted the \$1500 from the Indian farmer's total debts to the gin, but the gin owner ignored this and demanded the return on the loan. The gin operator then sent his men to the farmer's home to repossess the farm equipment but the farmer ordered them off his land threatening to call the Indian police. The gin operator never again attempted to repossess his equipment nor discuss the payment.

The reduction of Indian farmers is not due to any one event or situation but a combination of factors including failure to obtain credit, lack of technical farming and business skills, and crop infestation by the pink boll weevil. This is summed up in the following BIA communication:

For a number of years prior to 1957 the local cotton gins have provided virtually all of the financial needs for farm operating expenses for Indians who are engaged in farming on the Reservation. Due to excessively generous advances in previous years and a sharp reduction production in 1966 caused by pink boll weevil infestation, two of the principal gins are now in a critical position financially. For that reason, if the Indian farmer is to remain in business he will have to look to other sources of operating credit (CRA 1967b: 3).

Today of the 44 colonists on the Lower Reserve who have 80 acre farm assignments, only four are full-time farmers. These full-time farmers are beset by many problems and are all in debt. In some instances, an Indian field is easily recognized as it is sparse and patchy compared to a rich neighboring field leased by a white farmer. This is not because the soil is poorer, but due to the lack of fertilizer, leeching, and the care necessary to obtain a successful crop.

Mr. Hugh Beeson, a member of the Colorado River Tribal Council and a Hopi colonist discussed the problems of the colonist farmer. He remarked that the old tribal constitution encouraged Indian farming. It specified a charge of only \$2.00 per acre-foot of water for Indian irrigation, instead of the standard \$9.00 fee which everyone pays today. When he first arrived in the Parker Valley in the late 1940's, Indians could lease land for the nominal sum of \$4.00 per acre. Now the tribe leases agricultural land on a competitive basis. He was told that this was done because the land is worth more nowadays, and that the tribal council decided to obtain the highest price possible to increase the tribal treasury. Mr. Beeson said that putting the Indian farmer in competition with the white farmer has contributed to discourage Indian farming.

Mr. Beeson said that during the 1940's and 1950's when the Indian colonists were settled on the Colorado River Reservation they were not adequately trained by the BIA for farming and thus many failures resulted. Each colonist received an 80 acre assignment of newly developed land on the Lower Reserve. However, while he was critical of the shortcomings of the BIA, he added that everyone shares the blame including the Indian colonists. He noted that some colonists were too dependent upon government assistance and did not want to become hard working farmers.

Many colonists could not adjust to the new surroundings and missed the old reservation. "They just got homesick and missed their relatives and friends. They still go back today, and the main thing is that they got to go to those dances and they can't miss them."

Mr. Beeson and the few remaining colonist farmers have found it difficult to obtain credit to farm their land properly. Too often, they neither can afford to fertilize, nor reseed their fields. They have to rely upon another cutting of alfalfa when it should be plowed under. They have all gone into debt to acquire seed and equipment.

Generally Mohave, Chemehuevi, and colonist farmers who have leased their fields for a five year period will not return to farming their own land. Most leaseholders refuse to lease land for less than five years. Indians who have given up farming have found employment, usually in agricultural work either with reservation lessees or off-reservation farmers.

Mr. Beeson, several of his fellow colonists, and the regional director of the Indian Development District Association are considering forming an agricultural cooperative to improve and encourage Indian farming in the Lower Reserve. They wish to pattern this proposed enterprise after the successful cooperative at Ak Chin.

Mr. Beeson believes that, if Indians give up farming their own land, they will be in immediate danger of termination:

There are too many articles about how successful we are; how rich we are; and some people are thinking that we should be terminated, because we are now independent. You know, if we were terminated, we would lose our land and everything would be destroyed like it has happened with other Indian people. My friend, a now deceased colonist, warned me and my colonists friends never to lease our land; and to do our own farming because if we don't do this, we will never be able to support ourselves. It is a bad attitude to just let the land be leased out and live on the payments. We came here to farm and we must work our land, that is what I have always said.

Mr. Beeson is against the proposed share system, favored by the BIA, by which all lands, with exception of homesites, would be tribal and subject to leasing. Under this system, lease payments would be paid to tribal members in per capita payments of dividends. "With the share system, many Indians would not want to work their land and they would be idle," remarked Beeson.

Tribal Recreation Development

Recreation development on the Colorado River Indian Reservation, though no longer ignored, is low on the list of development priorities of the Colorado River Tribe and the Colorado River Agency. This is not a result of neglect of the tribe nor the BIA. It reflects the major concern for economic development mainly by agricultural development leases. The BIA and the tribe have adopted a development policy of reservation resources stressing those areas providing the greatest investment returns. More attention is being given to economic diversification, though agriculture will remain a paramount interest.

There are several reasons why agricultural expansion is a major part of the reservation development program. The BIA and tribal council favor extension of the arable portions of the reservation to insure and protect Indian water rights adjudicated in the 1965 Arizona-California Supreme Court decision. Furthermore, long term agricultural development leases provide good returns. The BIA also stresses immediate development of potential agricultural lands because

of the rising costs of labor and materials, equipment in construction of irrigation systems.

Many conditions and events have contributed to recreation development on the reservation and in the general area. The recreation potential of the lower Colorado River was greatly enhanced by construction of several dams along the river for flood control, irrigation, and hydroelectric power. These dams cleared silt from the water which improved fishing and enhanced water-based recreation. These dams and reservoirs include the following: Hoover Dam and Lake Meade, Davis Dam and Lake Mohave, Parker, Dam, and Lake Havasu, and Headgate Rock Dam and Lake Moovalya. The reservoirs have become popular centers for water recreation including camping, swimming, fishing, and hunting.

Federal, state, and private developments have developed several recreation areas. There are a number of federal and state parks along the river in California, Nevada, and Arizona. Buckskin Mountain Park, officially opened in October, 1967 is a 1300 acre park and the first to be completed under the Lower Colorado River land use program with the land leased to the Arizona State Parks Department by the U.S. Bureau of Reclamation. This recreation facility is situated some 11 miles north of Parker on Arizona Route 95. Private capital has developed numerous recreation enterprises along the lower Colorado River.

River recreation facilities attract vacationers and retirees from primarily the heavily urban populated areas of Southern California, especially metropolitan Los Angeles and San Diego, and the Phoenix area. Since construction of Parker Dam, in 1941, Parker has become a

water recreation center. Parker is accessible to Southern California by State Highway 95, and is 268 miles from Los Angeles and 168 miles from Phoenix. The Parker community airport is located some two miles east of town on the Colorado River Indian Reservation. There is commercial air service between Parker, Phoenix and Las Vegas, with flagstops at Wickenburg, and Bullhead City. Parker is also served by bus and railway.

The climate of Parker is another factor for the attraction of recreation enthusiasts to the area. The average yearly temperature is 71.5 degrees (CRA 1963: n.p.). Despite the hot summers, the area is busy from spring to fall. In fact, the hot summer months are the peak season for recreation in the Parker area. The river and Lake Moovalya are frequented by water skiers, and fishermen. Modern innovations such as the power boat, the travel trailer and the air conditioner have also encouraged development of tourism in the area.

Another factor increasing the number of visitors to Parker and the vicinity has been the stocking of catfish, trout, crappie, and bass in the river, lakes, and canals by the Department of Sports Fisheries and the Colorado River Indian Tribe, and the States of California and Arizona. To develop water recreation activities, the City of Parker and the Chamber of Commerce, the Parker Development Board, and the tribal council of the Colorado River Indian Tribe coordinate their efforts and resources to encourage economic development of the area. This includes advertising the recreation resources of the Parker Valley and Parker Dam area. In the last few years, the

influx of visitors to the area has been, in part, due to improved and greater facilities such as boat marinas, sport shops, restaurants, motels, trailer courts, and residential projects.

The Colorado Indian Reservation offers considerable water recreation potentials. The BIA has estimated that some 62 miles of reservation river frontage may be developed for a recreation plan. Though tribal recreation development is yet limited, the tribe has created a tribal recreation enterprise, developed recreation sites for water sports, and picnicking along the river. The tribe has also encouraged long-term commercial recreation development leases.

It is predicted that by the year 2000 the total visitor use on the reservation will be approximately 12,000,000 visitor use days (CRA 1967b: 16). To meet the demands of extended recreation development, the tribes has increased the number of game wardens and utilized well-trained personnel with proper equipment to protect and develop tribal resources and to aid and assist visitors to the reservation.

The BIA has estimated some 20,000 acres could be used for recreation development; this will be included in a master plan, yet to be completed. There is no zoning policy on the reservation. However, a number of BIA plans have expressed some specific land uses for some areas. All land from the river bank to the levee road is zoned for recreation, wildlife conservation, and/or commercial uses. There are no agricultural activities within this area with the exception that some Indians may have tribal permission to graze some stock in this region. There is no stipulated number of feet from the river bank as

the levee road differs in the distance from the bank at various locations, but the average minimal distance is roughly 600 feet.

The tribe has barely realized the recreation potentials of the reservation. However, the recent economic impact of tribal recreation projects has generated enthusiasm among tribal members. Only in the last two years was access developed so that an evaluation could be made of some of the more select areas for development planning. The tribal council conducted a tour of the total length of the river front to determine the recreation possibilities of the reservation.

The tribe has held a number of meetings to discuss recreation development on the reservation. The tribe has had meetings with the Lower Land Use Office, the States of California and Arizona, and one meeting with the Bureau of Outdoor Recreation. Also the tribe has invited and participated in the "Secretary's Advisory Group, Colorado River Management Program" meeting at Boulder City, Nevada.

The BIA realizes that expansion is needed in the recreation program to increase tribal income. They note that recreation development is extremely lacking. In a program memorandum of 1967, the Bureau noted that "If the Tribal Recreation Program is extended to permit a greater income to the tribe, it must be started within the next two years (CRA 1967b: 28)."

As late as 1963, the BIA sponsored a professional study to investigate the tourist potentials of the reservation. The study stressed the growing attraction of the area to recreationists. It

stated that there are two main assets favoring the development of tourism to the reservation. These are: "Its proximity to the growing Los Angeles market, and its ability to offer tourists water-based activities in a water-scarce region (Checchia and Company 1963: 1)." Tribal funds were employed in 1964 to construct Blue Water Marine Park, the tribal recreation enterprise. Also in this area, the tribe has developed through residential leasing, the Blue Water subdivision.

Lake Moovalya (Blue Water) formed by Headgate Rock Dam (Squaw Dam), 14 miles north of Parker, offers recreational potentials of considerable magnitude. Lake Havasu, formed by Parker Dam, is not within the reservation boundary; its contribution to the over-all economic development of the area will be important in the future. Lake Moovalya, some 17 miles long, is a popular area for water sports, particularly water skiing, boat racing, and fishing, attracting thousands of sportsmen the year around.

Development of recreation potentials on the reservation have necessitated the cooperation and assistance of several federal agencies. These include the Bureau of Reclamation, the Bureau of Sports Fisheries and Wildlife, and the Lower Colorado River Land Use Office. These agencies have given general approval for the basic plans of front and levee work on the reservation. Specific approval from the tribal council is given to the Bureau of Reclamation for each contract segment of the development.

Tribal recreation activities are advertised with a minimal amount of commercial promotion. The tribe distributes pamphlets

describing the tribal recreation enterprise and subdivision. These are available at the tribal office, the recreation enterprise, tribal game personnel, and from many restaurants, motels, and sports shops in the reservation area.

Since 1967, the Colorado River Indian Tribe has participated in the Annual Los Angeles Sportsman's Vacation and Travel Show. The tribe also is represented at the Salt River Indian Arts and Crafts Show, the State Fair in Pheonix, and the Northern Yuma County Fair in Parker. At these events, the tribe has an information booth with pamphlets, maps and postcards of the reservation. Through these outlets, the tribe has received considerable publicity.

The Tribal Game Department provides news releases concerning fishing and hunting conditions on the reservation and adjacent areas for the Parker Pioneer, Smoke Signals, the Lakeside paper, and the Palo Verde Times in Blythe. Once a week, the chief tribal game warden collects fishing and hunting reports from the various resorts along the river for these papers.

Tribal Fish and Game Department

The tribe recognizes that the fish and game resource must be included in the over-all reservation development program. Preserving and developing this natural resource is viewed by the tribe as not only a necessary conservation practice, but as a potentially important source of revenue. Development of this resource attracts sportsmen to the reservation and creates Indian employment.

Since 1953 the tribe has engaged in various projects to improve and maintain its wildlife environment. These activities include patrolling the reservation to protect tribal property and resources, and a growing participation in public relations to promote hunting, fishing, and other recreation activities on the reservation.

The Tribal Game Department with the cooperation and assistance of the BIA and the Department of Sports Fisheries and Wildlife, have developed tribal game and fish programs. The Tribal Game Department is independent of the BIA and operates through tribal funds. This tribal agency received advice and cooperation from the Department of Sports Fisheries and Wildlife. Both departments share the same office in the Town of Parker. A new tribal game office will be included at the new Poston Community Center to give this agency a more centralized location. The relationship between the Tribal Fish and Game Department and the Bureau of Sports Fisheries and Wildlife is excellent as indicated by their ability to coordinate their activities, and implement successful fish stocking programs. The Colorado River Tribe works with the Parker office of the Bureau of Sports Fisheries by special agreement to help manage and assist in fish and game operations. The local office of the Department of Sports Fisheries also works with the Quechan, Peach Springs, and Fort Mohave Reservations.

Recreation activities have significantly increased since the founding of the Tribal Fish and Game Department. According to the Tribal Game Warden, more and more people are attracted to the

reservation each year to engage in fishing and water-related activities. To meet this increasing demand, the Tribal Game Department has enlarged its operations as well as its staff. There are now five persons employed by this agency. Tribal development planners cognizant of the growing pressures on reservation recreation resources remark that the Tribal Game Department needs more men, and equipment. They need four wheel drive trucks and at least one river patrol boat to operate properly.

The chief game warden has recommended that the tribe supply his department with the necessary funds to obtain a raceway to retain fish delivered by the Department of Sports Fisheries. This device would be a convenience as tribal game personnel could withdraw fish at selected periods to plant where desired. A raceway would also accommodate the tagging of fish for experimental programs. The chief warden has four assistants and, of these, two are being trained under a job training program financed by an Office of Economic Opportunity project known as "Operation Mainstream." The Game Department has three new trucks equipped with radios. Presently, they use a boat for river patrols loaned by the Department of Sports Fisheries. However, the tribes will soon purchase a patrol boat for the Game Department.

In a prepared memorandum dated February, 1967, the Colorado River Agency made several suggestions to enable the tribe to cope better with the increasing demands on tribal recreation resources. This report recommended that two recreation development specialists

be placed in the Branch of Land Operations at Colorado River Reservation with operating funds to help the tribe in development of one of its greatest economic potentials. Estimated funds needed for a five-year period (1968-1972) total \$425,000. Agency planners remark that special program funds for the Branch of Land Operations would assist the tribe in the following recreation projects: (1) controlled parks, (2) fishing camp areas, (3) hunting camp areas, and (4) development of wildlife habitat (CRA 1967b: 33). However, these funds have not yet been released.

The Tribal Game Department has numerous functions which encompass three major areas: management of fish and game resources, protection of tribal property, and public relations. A primary responsibility is management of wildlife resources, wildlife resources, with greatest emphases upon tribal fish programs. This operation includes all canals, ponds, lakes, backwaters, and river areas of any consequence to fish resources within jurisdiction of the reservation.

A fundamental feature of the fish management program is to plant frequently or regularly so that fishing is always favorable. This is important as good, near, permanent fishing conditions attract sportsmen the year around, insuring adequate returns from recreation resources.

In 1962, the tribal council expressed concern over the poor fishing conditions between Headgate Rock Dam in the north and the Palo Verde Weir Dam to the south, a 45-mile stretch of river. The tribe requested and received assistance to improve fishing conditions

from the Department of Sports Fisheries and Wildlife, the Arizona Game and Fish Department, and the California Department of Fish and Game. The tribe organized a joint three-year research project to determine the present fish population; the type fish most suited to those waters; the effect of dams on the fish population; the reproduction potential, if any, in these waters; why the fish do not grow and multiply; and a management plan designed to restore fish population in this stretch of the Colorado River. This program significantly increased the fish population in this area of the river.

The total amount of revenue to the tribe from the sale of hunting and fishing permits in calendar year 1966 was \$10,922. Revenues from fishing and hunting have increased from approximately \$1,800 in 1961 to \$14,000 in 1965. The gross potential of direct revenue is estimated to be about \$90,000 per year (CRA 1967b: 32). The BIA has estimated that, "If one dollar could be collected as tribal revenue for each visitor day, the income in 1969 would be approximately \$1,250,000." However they state, ". . .that the best projection that we can make from our present program for 1969 income is \$75,000, or less than 10 percent of the potential (CRA 1967b: 29)."

The BIA reports that in 1964 the total net income for outdoor recreation and tourism on the reservation was about \$20,000 (CRA 1968c: 9). Since 1964, the economic impact of recreation-based activities has increased and the BIA estimated the 1967 income from outdoor recreation and tourism to be some \$67,400 (CRA 1968c: 11).

The Tribal Game Department has actively participated with the Department of Sports Fisheries in fish management and development programs. The Bureau of Sports Fisheries designs the fish planting schedules for the reservation. Trout, catfish, and other game fish are transported via truck by the Sports Fisheries Department from various national fish hatcheries to the reservation where tribal game personnel and a local representative of the Sports Fisheries Department assist in the planning. Usually trout are transported by truck from the Willown Beach National Hatchery (Arizona), and catfish often from the Dexter National Hatchery (New Mexico).

Experimental fish stocking and feeding programs have greatly improved reservation fishing and have helped bring greater financial returns to the tribes from recreational activities. The local representative of the Bureau of Sports Fisheries stated that the number of visitors to the reservation has significantly increased since stocking programs were instituted in 1962. In fact, the increase of fishermen to the Parker area is about three percent which compares well within the national average of two percent for National Recreation Areas. Tribal waters have the best catch rate on the river according to the BIA (CRA 1967a: 11). "For 1966, it was 1.31 fish per hour as compared to a normal catch for other parts of the river of 0.5 fish per hour (CRA 1967a: 11)."

The tribe assists different hatcheries by marking or tagging fish for management studies. Every two days, the Tribal Game Department take a creel count of all fishermen on the reservation wherever possible.

They record the type and size of fish caught and the name of the fisherman, his residence, etc. Because the Tribal Game Warden and his staff have so many duties to perform during the day, it is difficult to obtain an accurate creel count, and only an approximation can be achieved. The success of experimental stocking programs depends upon public cooperation, as it is vital that fishermen return the fin tags in order that an adequate count can be obtained.

The Tribal Fish and Game Department take water samples from various reservation canals, ponds, and sections along the river. This is a preventative measure to safeguard fish and wildlife. Fish and game deaths are recorded and investigated to determine if the kills are a result of disease or insecticide poisons. The Bureau of Sports Fisheries, the Arizona and California State Game Commissions are notified of wildlife deaths caused by unnatural agents.

Lessees or those responsible for insecticide kills are subject to notification and fines. The Tribal Warden has stated that there is a great need to promote and develop the recreational potentials of the reservation. He complained that the reservation is not adequately advertised and that many visiting fishermen have told him that for years they by-passed Parker and Ehrenberg in favor of other recreation areas because they had no knowledge of the hunting and fishing activities on the Colorado River Indian Reservation.

The Tribal Game Department has jurisdiction involving fishing along the river and waters within tribal boundaries, but cannot regulate boating on the river. Tribal hunting and fishing permits

may be purchased in several stores in Parker, Poston, and Ehrenberg in Arizona, and in Blythe, Earp, and Crossroads in California. All fishermen must observe tribal and state regulations. A recent change in Arizona regulations now requires that non-resident anglers have a non-resident Arizona license when fishing on canals or drains on the Arizona side of the reservation. A tribal fishing or entry permit is also required. A joint use license can be purchased to allow fishermen to fish from either the California or Arizona bank. Under the use policy, the license fee is split by both states. Seasonal permits and special fisherman-hunter permits with combined seasons are available from the tribes. All revenue from sale of permits is used in wildlife management programs.

The Tribal Game Warden remarked that it is the policy of the Tribal Game Department to maintain favorable relations with all reservation visitors. His staff provide tourists with directions, maps, and general assistance. They inform sportsmen of tribal hunting-fishing regulations and give helpful advice such as what kind of bait to use and where the best fishing areas are located.

If sportsmen do not possess tribal entry permits, tribal game personnel politely request that these permits be purchased either from tribal game wardens or at stores which sell permits. According to the game warden, some fishermen arrive early in the morning to hunt or fish before stores which sell the permits are open. In this case the game wardens request that the permits be purchased when convenient. Most sportsmen are honest and will do so. He added, "If we were to become

angered at them, then the word would get around how we treat non-members, less people would come here to enjoy our reservation and we would lose their respect and their money."

There are no designated camping areas on the reservation and it is prohibited by tribal regulations for non-members to camp overnight or bring trailers on the reservation for that purpose. The only exception is the tribal enterprise, Blue Water Marine Park, which has camping and trailer facilities. However, it has been the unofficial policy to allow overnight campers on the reservation, as long as they respect tribal property.

The only other tribal recreation commercial activity other than the Tribal Fish and Game Department, and Blue Water Marine Park, is Blue Water Subdivision, located on the east bank of Lake Moovalya several miles up the river from the recreation enterprise. Future expansion of this subdivision will include the now undeveloped California side. Tribal zoning regulations are flexible and house plans must be submitted to the tribal council for approval. Leasing for Blue Water Subdivision is arranged through the Realty Office of the Agency in Parker.

Tribal Recreation Enterprises

In the 1950's a boating club in Parker had planned to construct a marina on the reservation where Blue Water Marine Park is located, just northeast of Headgate Rock Dam on Lake Moovalya. But some tribal members foresaw the economic potentials of recreation development of

the area and through the efforts of Pete Homer, former Tribal Chairman, the tribal enterprise known as Blue Water Marine Park became a reality. Construction of this recreation project began late in 1963. It was officially opened in October of 1964. This enterprise was financed solely by tribal funds and is the only commercial recreation enterprise of the tribe. The first phase of construction included a restaurant, 20 cabanas, boat racing platform, and 26-pad trailer park. There have been many improvements and additions to the enterprise since 1964.

The enterprise includes a restaurant with a view of the lake. Here are sold some grocery items, sporting goods, and Indian arts and crafts. Within the restaurant complex is a beer parlor and outdoor patio. The complex also contains a gas dock with three pumps, a marine shop, a 300-foot boat ramp, and a large section for parking cars and boat trailers. On a slope of a hill, overlooking the lake just south of the complex, is a concrete stadium with a seating capacity of 800 persons. This was constructed by the Job Corps to serve for special boating events, such as regattas and boat races. Adjacent to the restaurant and across the highway is Blue Water Marine Trailer Park which has 53 trailer spaces.

Future improvements for the enterprise area have been discussed by tribal and BIA planners. Of major concern, is proposed dredging operations at Blue Water, opposite the enterprise on the California side of Lake Moovalya. This would create a deeper lake bed to facilitate more water skiing and speed boating. A deeper and wider

lake at Blue Water would permit larger-sized speed boats and hence major boat racing competitions. It would provide access to the California side which planners have considered for recreation development. This lake improvement would, of course, enhance tribal income. However, a BIA staff member cautioned that dredging operations in the area might generate legal conflicts with the State of California which claims submerged lands on the west side of the river. The dredging proposal was presented before the members of the Parker and vicinity business community where it was warmly received. Final decision now is the responsibility of the Phoenix Area Office where the possible legal consequences will be considered.

The main season for Blue Water is from Easter to Thanksgiving when warm weather attracts water recreationists. This is also the period when boat races are held on the river.

The former group are attracted to the area, in rising numbers each summer to water ski, fish, swim, and participate in boat races. They are a low-spending group who utilize cabanas, camp grounds, and the generally marginal river resorts. Retirees, who live primarily in trailers, represent a major share of the winter population (Del E. Webb Corporation 1964: 13).

Besides retirees, the other resident trailer owners at the park are those who work in the Parker area.

Major water recreation activities at Blue Water Marine Park and area are swimming, boating, boat racing, and water skiing. Boat races draw the largest crowd. In fact, racing events are very important to the enterprise as sometimes during a weekend the tribes obtain a net profit of some \$3,000 or more. A nine-hour "enduro race" is

held each spring at Blue Water where participants from 11 states compete. Also, the Parker Regatta is held in the spring conducted by the Southern California Speedboat Club. The major activity in this event is the kilo race.

The enterprise is managed by a hired general manager. A recreation board comprised of tribal members is appointed by the tribal council to control major decisions and budget affairs. It was prohibited to observe the activities of this board, owing to the financial problems of the enterprise and the differences of opinion between the manager and the tribal council and recreation board. The enterprise employs 11 persons of which two are assigned to the trailer court. Two-thirds of the work force are Indians (laborers, cooks, waitresses, and a busboy). Indians have job priority over non-Indians. Tribal jail laborers are used for maintenance work at the enterprise.

Several members of the tribal council have complained that the enterprise has been poorly managed. They state that occasionally the enterprise is subsidized by tribal funds. The tribal bookkeeper has reported that, sometimes, especially during the winter months, the enterprise is as much as \$3,000 a month in the red. This situation is unfortunate, as many private recreation enterprises in the Parker Dam area are successful economic ventures. Blue Water Marine Park, trailer court excepted, was temporarily closed from November to February, 1967 because of lack of business. In view of this apparent financial failure, the manager was fired and currently the tribe has

acquired a temporary manager. The tribe now is considering leasing the enterprise rather than employ a manager and accept the financial responsibility.

During a recent shutdown of the enterprise due to a slack period, the tribal chairman noted that, "This facility, one of the best on the river, had to experience this rather sad desolation, for lack of activity causing this shutdown. By being closed down it gives us the feeling or impressions of being lost, deserted, or foresaken by people (Smoke Signals 1968a)."

The 1966 operating budget for Blue Water Marine Park was \$149,037 (CRIT 1965: n.p.). The 1967 budget included a cash requirement of \$168,684. (CRIT 1966b: n.p.).

Indians do not commonly frequent the tribal enterprise. There are, no doubt, many reasons. One basic one is that they are not active recreation enthusiasts who engaged in water skiing and speed boating. Some Indians have remarked that Indians avoid places where there are "too many whites". A few have complained that the former manager often accused Indians of loitering, and in some cases, with justification.

It is doubtful if the tribe will continue to operate or extend the recreation enterprise to other developments than Blue Water Marine Park. In fact, the Blue Water Complex may be managed by a lessee because the enterprise has not been a financial success. Tribal leaders are hesitant to involve the tribe in operation and management of tribally-managed and operated economic ventures. They evaluate

the success or failure of such enterprises not from a detached view of an economist, but hold themselves accountable to their community. They feel a very real commitment to their fellow tribal members and desire to live in the reservation community without the embarrassment or discomfort of past failures. Thus, future recreation development policy may no longer be that of combined tribal and lease development, but exclusively a leasing program which would allow tribal personnel to be freer from personal responsibility of economic consequences.

Thus far, the tribe has developed, without lessees, Blue Water Marine Park, Blue Water Subdivision, and a small park for picnickers known as Twelve Mile Slough. There is discussion of development of a motel or sportsman's lodge along the river on the southern portion of the reservation. This project may be developed by private capital, through long-term leasing. The local Office of the Indian Development District of Arizona, located at the tribal headquarters at Four Corners, is presently studying the feasibility of this development.

Recreation Improvement Leasing

A major lease and one of the pioneer development leases on the reservation is the Big River Project financed by the Central California Land Development Company of Azusa, California. It is commonly referred to as the Penn Phillips lease in reference to the founder of the company. This firm has developed several communities including Salton City, Hesperia, and Christmas Valley.

This lease comprises some 7,800 acres of reservation land on the California side just south of the bridge which connects Earp, California with Parker, Arizona. The Big River lease stretches some 13 miles along the Colorado River. It is the first large scale recreation-residential project ever undertaken on Indian land by a private developer. This 65 year long-term lease was concluded in February, 1964 by approval of the Secretary of the Interior. The master lease contains five year rent increment periods as by federal law for long-term commercial development leases on Indian land.

Development plans for Big River include residential and commercial projects comprising the following: homes, apartments, and motel sites; marinas, a golf course, parks, schools, a shopping center and other business enterprises. Leases vary from one-half acre and more for \$1,495 to \$8,000. Annual lease rentals to the tribe range from \$9.00 to \$120 depending upon the value of the land (Parker Pioneer 1968). As of August 1918, there were over 700 leaseholders. To better assist development planning of this large scale project, the tribes concluded a land exchange with the Metropolitan Water District, exchanging 240 acres for 249 acres next to the northern boundary (CRIT 1966a: n.p.).

The Central California Land Development Company leases land for development. It is not the policy of this company to construct or invest in residential and commercial projects. However, some homes are built by the company to attract leaseholders. These homes like the rest of the lots will be leased. The company has built a

sales office on water frontage land and boat ramp. This complex will later be transferred to the community to serve as a recreation center.

The project installs electric lines, paved streets, curbs, and a community water system. Therefore, with exception of primary physical improvements, the company develops the land through lessees rather than engage in construction of physical improvements. The master plan provides for an orderly growth and development of the project area with schools and various community services.

The company is not opposed to lot speculation, but desires to encourage actual development rather than to freeze construction. According to the tract manager of Big River, during the first year or two after the project was inaugurated, a number of leaseholders obtained lots for speculative purposes, but this is a common pattern among large-scale land developments.

Some areas are designed for specific development and are called "choice areas". These lots cannot be leased for speculation as they must be utilized for specific development as specified in the master plan. This includes gas stations, marinas, grocery stores, and other commercial projects. This will encourage further leasing and will meet the needs of the community. Systematic planning will include the proper number of businesses in a balanced relationship to the size and needs of the community.

Leaseholders include all kinds of people, those working, retired, and with families. Leaseholders may build their own homes, businesses,

and select their own contractors. All plans must be in harmony with the master lease and meet approval of the project's architectural planners. Some areas are designed for residential use while others are commercial lots.

The BIA Agency Office is advised of project development, and a copy of each lease is forwarded to the Realty Office of the agency. Electric power for the project is supplied by the BIA facility at Headgate Rock Dam.

The tract manager of the Big River Project noted that leaseholders are attracted to the area for recreational and financial reasons. Many leaseholders are from urban areas and desire a "smog free" place to live. In fact, the term "smog free air" is frequently used in project literature and on sign boards. The warm climate of the Parker area and the scenic attributes also influence prospective leaseholders. The recreation opportunities at Big River attract lessees. These activities include hiking, fishing, swimming, and boating.

According to the tract manager, riverside lots are expensive on non-reservation property, valued from \$15,000 to \$20,000 per lot. At Big River, waterfront lots are worth about \$7,000. Another factor favoring Big River is that there is no property tax. However, state and county taxes are assessed on the physical improvements of non-Indians on the reservation.

Penn Phillips advertises frequently in newspapers throughout the country, particularly in Southern California, West Coast urban

areas, and Phoenix, Arizona. Television is an important advertising media. Television advertisements are shown in Phoenix, Los Angeles, San Diego, Santa Barbara, San Francisco, and Seattle and several other West Coast cities. In some major urban areas there are representatives of the firm. Talks promoting Big River are presented to interested individuals and groups. The firm has an advertising department, staffed with writers and photographers, which produces newsletters, a newspaper, and pamphlets.

The Central California Land Development Company will assume responsibility for the community services of sanitation, street repair, water system, etc., until the project attains an adequate number of residents. At this time, community services will be transferred to the residents of the project who will form a Community Service District. Thus, the residents within the project will operate and manage community services as does a town council. This same program has been successfully implemented at Salton City, a former Penn Phillips project. It is anticipated by the Big River planners that transfer of streets for maintenance and upkeep will be received by the county. Big River development does not include a sewer plant as this would be too expensive and would have made development of the area impossible as considerable expense is involved in building a community water system and construction of curbs and streets. Individual lessees will therefore purchase and install their own septic tanks.

A community water system is being installed, and after it is in operation the tribe will take over the operation and maintenance. Penn Phillips will subsidize cost of operation and maintenance until the system has some 500 paying customers. " . . .all right, title, and interest in and to said water system shall be conveyed to the Tribes upon completion of the water system in each tract and as further described in said agreement (CRIT 1967b: n.p.)." The tract manager predicts that the water company will provide the tribe with additional revenue. Some BIA officials are concerned about this responsibility and the ability of Indians to manage the system. They believe that Indians ought to be well trained to operate properly and manage the water system. Training is expected to begin as soon as the system is in operation.

The tract manager stated that the Town of Parker has and will benefit from the Big River Project. He noted that some real estate people up the river, presumably the Parker Dam area, resent Big River competition. He noted that there is need to continue and improve good relations with the Town of Parker. He stated that "If unfavorable rumors about the Big River development circulate in the Parker area that this could hurt us, and to prevent this sort of thing we got to be in touch with the local community and have good relations with them." He remarked that there may be some local citizens in the Parker area who are suspicious of Big River and view it as a potentially serious competitor to the existing business community. Many thousands of dollars have been received by the local merchants since the inception

of the master lease in 1965. Some local citizens receive employment from the project. The tract manager stated that, "We have a standing annual lease of ten motel rooms at the Kofa Motel (a commercial town lot lease on Indian land) and these are usually filled during the weekend with our salesmen and visitors." Most salesmen, construction workers, and visitors to Parker and associated with Big River, spend their money in Parker for food, lodging, and shopping. He remarked that his predecessor at Big River was recently removed from the project as he had not been concerned about public relations with the Parker community. This created some lack of communication between the town and the project.

A BIA official remarked that the Big River project originally had not been viewed as directly affecting or relating to Indian water rights allocated by the 1963 Supreme Court settlement. Following the initial development of the Big River project, it was learned to the surprise of the agency that the total acreage of the Big River lease would be charged against the 107,588 acre water right.

The master Lease states that water must be accounted for as required by law:

To facilitate the accounting of the diversions, returns, and beneficial consumptive uses . . . of the water of the main stream of the Colorado River in accordance with the decision of the Supreme Court . . . the lessee shall maintain accurate and complete records of the sources and amounts of the water used on the leased area, shall furnish such records of the sources and amounts of water used on the leased area, shall furnish such records to lessor on request and shall install metering or measuring devices as may be called for by the Secretary of the Interior or his authorized representative (CRC 1964: 5).

The Big River Project has attempted to employ Indian labor wherever possible to contribute to the reservation economy. According to the tract manager, unfortunately many of the Indian men hired were not dependable, though good workers, and hence were fired. They worked only when they desired. The construction foreman had several Indians under him leveling the land and building roads. But Indians either would fail to show up for work on Mondays, or would be absent for three days to attend funerals. The superintendent discussed this problem with the foreman and told him that if Indians were paid by the week that their services would be more difficult to obtain. As it was, they received their checks twice a month. As of August 1968, there were only two Indians employed by the project, one secretary and one laborer. The tract manager remarked that there would be more jobs available for Indians if they were adequately trained and reliable.

Summary

Of all Arizona Indian reservations, the Colorado River Reservation has long been active in development of water resources. In fact, on this reservation was pioneered one of the first federal reclamation programs, the Grant Dent Canal. Tribal desire to utilize reservation water resources for large-scale agricultural development resulted in the important water right guarantee of the Arizona-California case. This conflict not only affected this reservation's water right, but the concept of Indian water rights, and therefore is of great importance to Indian water law. It reinforced the Winters

Doctrine. While it supported the doctrine of reserved rights, it removed the "open end decree" by specifying the amount of water for Indian use. It made possible development of the tribal economy in agriculture, industry, and recreation.

Federal approval of long-term development leasing and federal appropriations and loans have encouraged Indian water resource development and increased tribal revenues. However, Indian involvement and participation in reservation resource development programs have been somewhat limited. Indian farming is no longer encouraged and has been significantly reduced. The Colorado River Indian is becoming an absentee landlord removed from the productive land base. Too often, his economic dependency rests upon rent payments. What effect this situation will have upon the Indian and his reservation cannot be foreseen. It is possible that large-scale reservation resource development by non-Indians may result in the reservation's early termination before a truly self-reliant Indian is achieved.

This reservation may be in a predicament. Rushed development of the land to protect Indian water rights by utilizing water resources has resulted in limited Indian participation in planning and management of resource development programs. This situation reflects the policy of the BIA to stress physical resources rather than community development as the former is easier to implement. On the other hand, a slower water resource development policy might endanger Indian water rights. Indian participation has been limited by reluctance of Indian leaders to accept individual responsibility. This is most apparent in the failure of a tribally operated recreation enterprise.

Non-Indian competition over water resources was noted on the State level in the Arizona-California controversy. Difficulties in reservation resource development have been experienced on both county and municipal levels. Lack of communication among federal agencies was seen in the parkway conflict between the Lower Colorado River Land Use Office and the Indian tribes of the Lower Colorado River.

The Colorado River Indian Reservation is unique as non-Indians within the general area depend upon the economic resources of the reservation. However, private development of Indian lands has too often resulted in increasing dependence of the Indian upon the non-Indian.

CHAPTER 3
WATER RESOURCE DEVELOPMENT
OF ARIZONA'S APACHE RESERVATIONS

The preceding chapter dealt with development of water resources in the arid environment of the Colorado River Reservation. Here, wide-scale agricultural development was a direct result of an Indian reclamation project. This chapter will examine the uses of water resources on the Apache Reservations--the Fort Apache and San Carlos communities. Unlike the Colorado River situation, these reservations possess some three million acres of valuable watershed lands which are principally utilized for recreation, livestock grazing, and selva culture. More attention will be given to the Fort Apache than the San Carlos Reservation because this community has been very actively involved in watershed management, water-based recreation, and range improvement programs.

History of the Use of Water Resources

Both Apache Reservations are located in east-central Arizona and share contiguous boundaries along the Salt and Black Rivers. The Fort Apache Reservation, situated just below the Mogollon Rim, slopes gradually to the west and south draining the Salt River. It comprises 1,664,872 acres or 2,601 square miles (FAA 1964: 8). The terrain of the San Carlos Reservation slopes to the west and drains both the Salt

and Gila Rivers. The San Carlos Reservation contains 1,877,216 acres. Virtually the entire Fort Apache Reservation is included within the Salt River Watershed, while more than two-thirds of the San Carlos Reservation is part of the Gila River Watershed. The northern third of the San Carlos Reservation is drained by the Black River, with the exception of the Point-of-Pines area.

Elevations of both reservations vary from several thousand feet on the lower western portions which have semi-arid climate to 11,459 feet on Mt. Baldy. Precipitation occurs generally in the summer months of July and August, and during the winter months of January, February, and March. The precipitation for Fort Apache reservation ranges from 12 to 30 inches, depending upon the elevation (Green and Sellers 1964: 457).

Most of the 6,587 members of the White Mountain Apache Tribe reside in the eight communities located on the reservation. Most of the 3,960 members of the San Carlos Indian Reservation are located on the two communities on the reservation.

Both reservations were established by Executive Order as follows:

An executive order of November 9, 1871, established at Camp Apache, Arizona, the White Mountain Reservation, formerly set aside by the War Department as an Indian Reservation for Apaches. Executive order of December 14, 1872, added the San Carlos Division . . . An act of June 7, 1897, provided that the portion of White Mountain or San Carlos Reservation north of the Salt or Black River should be known as the Fort Apache Reservation (Kelly 1953: 23).

During the 1870's and 1880's, military and civil authorities located Yavapai and the former divisions of the Western Apache (they included the White Mountain or Coyotero band, Tonto Apache, and the Arivaipa and Pina Leno divisions) on the San Carlos Reservation at Old San Carlos, Dewey Flats, and the vicinity around Rice. At first, the Indians practiced their subsistence economy of hunting and gathering with minimal reliance on cultivation. But forced concentration within the boundaries of a prescribed territory made this traditional way of life impossible. Government rations were issued to the Apaches during this early reservation period.

The administration of Agent John P. Clum (1874-77) inaugurated agricultural development and irrigation construction. In 1881, Indian Agent J. C. Tiffany, reported that some 1,000 acres on the San Carlos Reserve was under cultivation compared to only 150 in the preceding year (Tiffany 1881: 7). Unfortunately, the farm land was insufficient and the water supply decreased owing to diversion upstream on the Gila River by white farmers. Up to this time, Apache farming had been quite successful and suggested a means to economic self-sufficiency. But on the eastern portion of the San Carlos Reserve, Anglos had discovered the rich copper deposits that were to become the Clifton-Morenci copper mines. To the west, silver, gold, and copper were found in the vicinities of the modern communities of Globe and Miami. Anglo discovery of these important natural resources resulted in the subsequent reduction of the reservation land base (Spicer 1962: 253).

West of Fort Apache, industrious Mormon farmers diverted the water of the Gila and seriously interfered with the irrigation operations of the BIA in San Carlos.

By 1875, the White Mountain Apaches were removed from the Camp Apache Reserve and relocated at San Carlos (Clum 1876: 10). During the 1880's, most of the eastern and western bands had returned to Fort Apache. Much of the agricultural activities at Fort Apache centered around the farms of the agency, school, and army which employed Apache labor. In 1874, some five miles of irrigation ditch was constructed at Fort Apache to irrigate 300 acres (Robert 1874: 286).

Aside from institutionalized agriculture under direction of the military and the Indian Service, most Apaches farmed their small traditional subsistence garden plots which were both dry and irrigated. This practice is illustrated in the 1898 report of Charles D. Keyes, Indian Agent, at Fort Apache: "The valleys are narrow, but fertile, and susceptible of a high state of cultivation under proper irrigation, along these streams are the settlements and in the valleys under a crude system all the produce except hay is grown (Keyes 1898: 116)."

Irrigation farming on the San Carlos Reservation was larger scale than at Fort Apache because of construction of several irrigation systems along the San Carlos and Gila Rivers on the former reservation. In the mid 1920's farming at San Carlos had reached a development peak

with some 860 acres cultivated by 100 to 230 families, a number representing approximately half of the reservation population. However, most farming activities were terminated by the late 1920's with the construction of Coolidge Dam on the site of Old San Carlos. During this period, most San Carlos men were employed in the construction of the dam. Coolidge Dam resulted in the removal of 149 families and submerged 535 farms within the Old San Carlos community (SRI 1954: 115). After 1930, the Apaches lost interest in farming, and either entered the wage labor market off the reservation, or were involved in livestock operation within the reserve.

The BIA developed new farm land for the former residents of Old San Carlos in the region of New San Carlos. But the project was a failure as it consisted of only two acre allotments per family, and the Apache was neither consulted nor asked to cooperate in the design and the development of this project. The consequences of this fiasco was that most of the land either remained idle or was worked by the Indian Service farmer (Spicer 1962: 258).

In 1872, some Apache groups received cattle from General O. O. Howard (Robert 1874: 290). Six years later, it was reported that Indians possessed some 521 stock-cattle and 760 sheep (Hart 1879: 6). By saving rations, some industrious Indians were able to receive a whole animal, and therefore built up cattle herds. In 1890 the superintendent purchased cattle for Indians. By 1899 Indians had some 9,396 animal units while non-Indians possessed over 30,000 (FAA 1963 n.p.).

In 1902 permits to non-Indians were first issued. In 1903, Agent C. W. Crouse at Fort Apache wrote the following: "But as the Indian here has not been able to sacrifice and take advantage of his natural resources by grazing the land himself, it appeared best to grant grazing permits to others who were glad to have the privilege (Crouse 1907: 148)." From 1902 to 1905, grazing fees were used to buy stock for Indians. However, non-Indian livestock outnumbered Apache stock until 1930.

In 1924 the first non-Indian range units were cancelled in an effort to improve the range and build up an all Indian livestock enterprise. By 1930, Indians began to occupy a major portion of the range with 19,834 animal units compared to 19,089 non-Indian units. Some Indians had become successful livestockmen. In 1931, on the Fort Apache Reservation, R 14's (BIA's designated tag band name) holdings were estimated at 2,500 head of cattle and some 75 horses (FAA 1963 n.p.).

In 1923 Superintendent Kitch at San Carlos initiated a program to reduce the lands leased by white cattle companies. He promoted Apache cattle operations to improve the Indian economy and to encourage Apaches to utilize their own land (Getty 1953: 24). At first, Apaches seemed indifferent but gradually became interested. At San Carlos cattle substituted for a declining agriculture.

Non-Indian lease-grazing permits were terminated on the San Carlos Reservation in 1932 (Getty 1953: 25). The last non-Indian

range units expired at Fort Apache in 1953 (FAA 1963 n.p.). Indians of both reservations have formed their own livestock associations to manage and operate the livestock industry. Range improvement programs have been initiated and stock units have been reduced to safe levels. However, today some portions of the San Carlos Reservation are overstocked, but the situation is not yet serious.

The White Mountain Apache and Water Resources

Today, both the San Carlos and Fort Apache Reservations constitute economically depressed areas. Tribal leaders are cognizant that economic development of reservation resources is necessary to alleviate this problem. In this section concerning the Apache Reservations, emphasis will be on the Fort Apache Reservation rather than the San Carlos Reserve because the former community has been most energetic in realizing the economic benefits of its resources, particularly water. Water is important to the White Mountain Apache in recreation, timber management and production, and range control programs. About 65 percent of the employables are without jobs and the average family income is only \$1,100 per year (U. S. Department of Labor 1967: 333).

Timber and forest products are the principal income sources. The reservation has an estimated four billion feet of commercial saw timber on 700,000 acres of timber land (FAA 1964: 17). In 1966 more than \$2,250,000 was received from annual sales of timber products. This industry employs 140 Indians and has an annual payroll of \$650,000. The forest industry is expanding. The tribal recreation-based

economy is also growing and in 1967 earned over \$1,000,200 and employs over 100 Apache Indians. Eight percent of the reservation is adapted to livestock raising. This industry is static, though an important income source. Some 500 Apaches receive their income, either in whole or part, from livestock. Annual cattle profits exceed \$40,000. Mineral resources have yet to be utilized or completely determined. These resources include asbestos, marble, iron, manganese, and cinders. Agriculture is minimal, consisting of small scattered garden plots for individual Indian families, but this activity is an important source to the Indian food supply.

The White Mountain Recreation Program

The recreation potentials of the Fort Apache Reservation were first recognized by the late Silas Davis, an employee of the Forestry Branch of the BIA. He noted that the Apache Indians not only owned the best trout fishing waters in the state but some of the choice big game hunting areas. He argued that the reservation, if made accessible to non-Indians, would attract the residents of the populated areas of the state, particularly Phoenix and Tucson, during the summer months. Davis maintained that development of these potentials by a tribal enterprise would be of great benefit to the tribal economy. He contended that it would help remove the isolation of the reservation and bring the Apache into contact with the non-Indian which would be invaluable to the Indian.

Nelson Lupe and other respected tribal leaders were also convinced that a recreation program would generate new jobs. However, some Apaches feared that such an enterprise would endanger Indian land holdings and, in a sense, open up the reservation to non-Indians. Others were skeptical that such a recreation program could be profitably operated. Notable among opponents of this proposed development were the older people, primarily those who held strong traditional values, and Indian cattlemen who feared that recreation activities would infringe upon their operations.

After considerable discussion, the Apache people approved by general election the creation of a recreation enterprise. The plan of operation of the White Mountain Recreation Enterprise was adopted in late 1954. Silas Davis was appointed manager of the enterprise. To develop a recreation economy, roads had to be constructed and existing ones improved to provide access to the streams and lakesites. Campsites were developed, the fish program was intensified, and commercial support facilities such as service stations, boat rentals, motels, a restaurant, and trailer courts were developed. The major reasons for this recreation development program was a return of the dollars invested and to provide employment opportunities for the Apaches.

A major project was the building of lakes. The first recreation lake, a \$200,000 project on Trout Creek, known as Hawley Lake, generated opposition from the Salt River Project that claimed that

Apache impounded waters belong to the Salt River Water Users' Association. Davis defended the necessity of lake construction remarking that most people prefer lake fishing, and that lakes would adequately meet fishing pressures in years when streams are low. In 1957, three years after the recreation program was inaugurated, he remarked that the enterprise had already proven a success. He noted that in 1957 the tribe sold 30,000 fishing and hunting permits compared to 880 in 1937 (AISC 1958: 100). In 1957, following the death of Mr. Davis, Mr. Sparks of Coolidge was selected as manager of the tribal recreation enterprise by the tribal council.

Prior to 1958, the reservation economy was based only upon timber and livestock. The economies were limited and could not meet the demands of the available labor force and unemployment was very acute. There was a need to diversify the reservation economy.

During the first two years of actual operation (1955-1956), time and money was devoted to development of campgrounds and roads. During this period, as previously mentioned, Hawley Lake was constructed as part of the Smith Park Recreation area. In the winter of 1957 it was filled and by the spring of 1958 it was open to the public.

In the summer of 1957, Honda Motel was opened at Indian Pine. Since its inception, the enterprise has developed some 700 individual camping units. Twenty recreation lakes have either been developed or improved since 1956. Every year since 1958 the recreation enterprise has made a profit. The enterprise has never been subsidized.

In the spring of 1958, the enterprise employed 12 persons on a permanent basis. The gross income for that year was some \$72,000 including fishing permits. By 1967 the enterprise employed 120 persons and realized a net gross in excess of \$1,200,000. The enterprise manages the largest privately-owned recreation area in the West. Because of its success, the enterprise has served as a model for other Indian tribes so that they may better realize the recreation potentials of their reservations.

Tribal income from timber aids the recreation program by providing funds for construction of dams and recreation facilities. The enterprise also receives funds from the BIA revolving credit funds at six percent interest. All profits of the recreation enterprise are reinvested into recreational development.

Though Hawley Lake was the first major recreation lake constructed by the White Mountain Apache Tribe as part of their recreation development program, the first man-made lake was built in 1941. This was Tonto Lake; it was built primarily to serve livestock and also recreation. Since it was a small lake it caused no concern among the Salt River Project. The tribe has constructed some 23 lakes principally designed for recreation use under the special development program. The tribe provides funds for lake development, and the BIA furnishes the technicians and the equipment needed for lake construction.

During the period from 1966 to 1967, the tribe spent \$265,000 for recreation water development projects by building four new dams

and improving an existing one. Of this money, 60 percent went to labor costs and thus was returned to tribal members employed on these projects (Fort Apache Scout 1968). As a result of the tribal recreation program, the BIA has added a hydrological engineer to the agency staff in Whiteriver.

Tribal and agency spokesmen have contended that the lakes are multi-purpose, that is, they serve such uses as recreation, livestock, and wildlife. However, most impoundments are located on the higher elevations and therefore are incidental to stock and are utilized mainly for recreation and wildlife. The depth of a lake is not important economically. The surface area is economically important because of fishing.

On May 11, 1967, the administrative structure of the White Mountain Apache Recreation Enterprise was altered because it had expanded its operations and had become too diversified, including numerous economic enterprises from boat rentals to homesites. The enterprise was divided into two separate entities. The White Mountain Recreation Enterprise was retained. Its operations were limited to recreation management, excluding commercial enterprises, such as the tribal game and fish department, campground maintenance and development, and recreation publicity. A newly created body, White Mountain Apache Enterprises, was instituted to include all retail activities such as tribal motels, trailer courts, boat rentals, gas stations, and other commercial support facilities.

Both organizations are subsidiary corporations of the tribe under a plan of operation. Each enterprise has a manager under contract to the tribal council. The manager has total responsibility of the operation (hire and fire). The tribal council appoints a board of directors composed of nine members for each enterprise. However, board members may overlap. The board is the policy setting group and the operating body for each enterprise. Each manager is directly responsible to the board of directors. There are now four distinct tribally-owned operations: (1) Fort Apache Timber Company (FATCO); (2) The ID tribal cattle herd; (3) White Mountain Apache Recreation Enterprise; and (4) White Mountain Apache Enterprises.

Planning and maintenance operations of the White Mountain Apache Recreation Enterprise utilize census materials gathered by tribal game wardens. This data includes visitor censuses and creel reports. In January, 1967, the White Mountain Apache Tribal Council adopted a new policy concerning recreation development, stating that no new recreational developments will be open to the public until total development is completed. This will allow for orderly development of recreation projects and exclude visitors from development sites to give construction crews "a free hand" in such programs.

The recreation enterprise plans to develop new recreation areas and facilities providing that tribal funds and federal loans are allotted. All such plans depend upon feasibility studies for given areas and programs. Examples of future recreation development are a

ski resort at Mount Ord, proposed golf course at Smith Park, a recreation-irrigation lake and lodge at Whiteriver.

An unfortunate aspect of the tribal recreation economy has been that its activities are restricted to the summer months. Hence, Indians employed by this enterprise rely upon unemployment assistance if they are unable to secure winter employment which is very difficult to obtain on the reservation. A ski complex would help provide year-round employment and boost the tribal economy. The tribe and the BIA, particularly the agency division-industrial development have been planning and promoting this project for some three years. The ski facility plan was originally rejected several years ago by the Economic Development Administration because it included too many employed persons and the construction budget was too large. This \$2,500,000 winter-summer recreation complex is expected to be funded in 1969 by an EDA loan.

The ski operation will augment the newly constructed Snake Creek Dam project developed by enlarging Snake Tank now nearing completion. This lake is locally known as "the monster" as it covers 857 surface acres and is the largest cold water lake in Arizona. The Mount Ord project will include a ski lift to the 11,335 foot mountain peak, a 75 room lodge at the 9,200 foot level with a restaurant lounge, heated swimming pool, and ski shop. This project should be completed by the end of 1969.

The White Mountain Recreation Enterprise is responsible for advertising the recreational developments of the tribe. Numerous pamphlets and maps are printed describing the recreation areas of the reservation. The importance of water to the Indian economy is particularly apparent from these pamphlets. "Hawley Lake is a product of Apache determination. The dam was constructed in 1957 in the face of strenuous objections and threats of legal action. The tribe maintains they have the right to develop water rising on their own reservation for recreation and other purposes (WMAT 1967:11)." Also mentioned in these pamphlets is the pioneering work in range improvement and watershed programs of the tribe. The enterprise also uses the film media to advertise the tourist facilities and activities of the reservation. The tribe produced a motion picture color film depicting, not only recreation, but describing Indian life on the reservation. These films are shown to interested groups (sportsmen clubs and other organizations) and, if possible, a representative of the enterprise is present at these showings to present a talk about the reservation and to ask questions from the audience. Television viewing time has been purchased for these films by the enterprise in several western urban areas. The enterprise is represented at the State Fair in Phoenix, sport shows in Phoenix and Los Angeles, and various outdoor shows and conventions throughout the State of Arizona. Advertising activities of the enterprise has been, in part, responsible for the increase in the number of visitors to the Fort Apache Reservation.

The recreation enterprise cooperates and works with the White Mountain Boosters. This organization promotes the recreation economy of the following White Mountain communities: Springerville, Eager, Greer, McNary, Showlow, Pinetop, Lakeside, and Whiteriver. It was founded in 1964 and is broader in scope than a chamber of commerce, as it includes the White Mountain communities and large and small businessmen. The tribe belongs to the Boosters and is represented by the tribal recreation enterprise. The tribe has aided the Boosters by obtaining considerable publicity for them, according to Booster President, George Harvey of McNary, Arizona.

Fish Management on the Fort Apache Reservation

Two national fish hatcheries, Williams Creek and Alchesay, are located on the White Mountain Apache Reservation. The grounds for both hatcheries were given to the U. S. Government by the Apache Tribe on a free lease basis. Thus, land and water for hatchery operations are provided without cost by the tribe. By mutual agreement, the tribe provides Alchesay Hatchery with a tribal employee of the White Mountain Apache Recreation Enterprise. The State of Arizona does not plant fish on the reservation or participate in the fish management program.

About 90 percent of the trout raised at these hatcheries are stocked on federally managed waters--national forest, military, and Indian reservations. Indian reservations supplied by these hatcheries comprise: White Mountain Apache, San Carlos Apache, Hopi, Zuni, and

when conditions are not too dry, the Hualapi Reservation. Under terms of agreement with the Bureau of Sports Fisheries and Wildlife, the White Mountain Apache Tribe is allocated two-thirds of the fish produced at Alchesay Hatchery. The trout varieties raised at these two hatcheries include rainbow, brown and brook. Rainbow make up about 95 percent of the trout raised at Williams Creek and Alchesay Hatcheries. However, the White Mountain Apache Tribe and hatchery biologists are interested in preserving and increasing the number of native Gila Trout which are raised under natural conditions, and stocked by the recreation enterprise in streams on the higher elevations of the reservation.

Hatchery personnel coordinate fish management programs with the White Mountain Recreation Enterprise. The manager of the enterprise does not make any decisions regarding stocking and hatchery management operations, but may make suggestions. Major decisions such as stocking schedules and procedures come from the regional office in Albuquerque, New Mexico. Stocking schedules are based upon data supplied from creel counts which indicate fishing pressure and catches in local areas. Another factor influencing stock planning is the availability and conditions of water in the fishing area necessary to sustain a fish population. Therefore, the regional office in Albuquerque designs annual stocking schedules based upon local hatchery reports. The two hatcheries divide fish management operations between two stocking areas. Tribal game wardens conduct creel counts during

the summer months. However, these reports are never completed because the work demands upon the wardens are such that they are sometimes neglected.

Williams Creek Hatchery located near Hawley Lake and constructed in 1940, hatches all the eggs because the spring water at this hatchery is of better quality than Alchesay. Williams Creek produces about 100,000 pounds of trout each year. The quantity of water at this hatchery has decreased in the last 20 years. The manager of both hatcheries remarked that this decline in quantity, not quality, is a result of many factors, particularly the construction and building in the general area. He noted that a diminishing water supply at Williams Creek creates potential problems in view of the ever-increasing fishing pressure in the general area. He stated that, "Our maximum production is based on minimum flow, if the water isn't there, how can we meet the demand?" He added, that natural reproduction cannot, of course, meet the fishing demand.

Alchesay Hatchery, some nine miles north of Whiteriver, receives water from a spring that is actually derived or fed from the White River. It contains a heavy silt load which is very pronounced during the annual spring runoff. Alchesay produces some 130,000 pounds of trout per year. During the year 1966, both hatcheries planted some 170,000 pounds of trout on the reservation.

Hatchery personnel noted that dam or lake construction on the White Mountain Apache Reservation has reduced the turbidity of the water, but has not noticeably affected the quantity of flow.

The two hatcheries are situated in the White Mountains because the area has an adequate water supply of sufficient quality to meet demands of a hatchery operation. The hatcheries are conveniently located to supply the surrounding mountain streams and lakes. The hatchery manager remarked that as fishing pressures increase, it will become more difficult to adequately meet the demands.

Since the tribe launched the recreation enterprise, fishing pressures on the reservation have greatly accelerated. At the same time the population in the state, especially in the Phoenix and Tucson area, has increased. Approximately 25 percent of the trout caught in Arizona are taken from the streams and lakes of the reservation (Fort Apache Scout 1967a). Prior to 1958, there was 20,000 man days on the reservation for a year. Man days is a count devised which is one fishing day per individual. Since 1958, there has been a 15 percent increase every year. For the year 1966, there was 370,000 man days. Also during this year one half million visitor days during the year other than fishermen were recorded. This includes hunters, campers, picnickers, photographers, and general tourists.

The BIA estimates that by 1974, the fish producing capacity of the two present hatcheries on the reservation will be reached and another hatchery in the area will have to be constructed to meet increasing demands. The tribe would like to employ a marine biologist in fish management for the recreation enterprise. The biologist would

cooperate with hatchery personnel in management programs and would help reduce the work demands of hatchery biologists and intensify the tribal fish management program. This position may be implemented in the future as at the present time the tribe cannot afford to hire a marine specialist.

To meet increasing fishing pressures, the tribe and the BIA have proposed the construction of a hatchery at Cibecue Springs, just north of the townsite of Cibecue. This project would cost approximately \$1,000,000. The proposal has never been accepted by the Bureau of Sports Fisheries and Wildlife. State politics may influence the location of another hatchery in the general area, and it is doubtful if the reservation will receive a new hatchery, despite inducements by the tribe such as free land and water.

The Salt River Project-Apache Water Controversy

In May 1957, while making a routine aerial survey of the White Mountain watershed area, the watershed supervisor for the Salt River Valley Water Users' Association and Salt River Project personnel were surprised to discover on the White Mountain Apache Reservation a nearly completed lake on Trout Creek near this stream's juncture with White River. The Salt River Project had opposed lake construction since the plan was first proposed in 1953. The Salt River Project succeeded in terminating dam construction by an off-reservation contractor in September 1956, by issuing an injunction halting construction (Fort Apache Scout 1964c).

However, the White Mountain Apache Tribe maintained it was legally justified in impounding reservation streams to develop lakes, and continued work on the dam at Trout Creek. Following discovery of the dam, an order signed by Superior Court Judge Charles Bernstein commanded the tribe to release any water stored in the dam (Arizona Daily Star 1957a).

Two Apache County Sheriff's deputies were turned back in their attempt to serve court processes to halt dam construction. According to the deputies, Indian policemen with rifles had an order " . . .to bar any law enforcement officers attempting to serve processes on persons employed at the damsite and were directed to use force, if necessary, to carry out said orders (Arizona Daily Star 1957b)." Superintendent Albert Hawley accompanied the four Apache officers who guarded the construction area and refused entry to anyone without a tribal permit. They were cited for contempt of court, but the charges were later dropped.

The Water Users' Board of Governors sought legal action following tribal refusal to release the impounded water. On July 5, 1957 U. S. Attorney Jack D. H. Hays and Irving A. Jennings, attorney for the Salt River Valley Water Users' Association, argued in U. S. District Court the question of whether state or federal courts have jurisdiction over water rights on the Apache Reservation (Arizona Daily Star 1957e). The tribe maintained that the state had no right to order release of water. Attorney Jennings remarked that the

water users had created a separate lawsuit and requested that the case involved expansion of the Kent Decree, a 1910 court order which determined water rights in the Salt River Valley.

The Water Users contended that they did not wish to prevent the Apaches from using water but were attempting to ". . .enforce a court determination of how much water the tribe is entitled to use (Arizona Daily Star 1957c)." Attorney Jennings argued that unlimited water impoundments would be detrimental to urban and rural water users in the Salt River Project. He stated that there are some 100 potential lakesites on the reservation. "They could impound 500,000 acre-feet of water, and that is more than is in storage in all of the dams of the Salt River Project today (Arizona Daily Star 1957a)."

The suit filed by the Salt River Project in 1956 asked the court to determine water rights among lands in the valley and lands on the Project watershed. This suit was dismissed without prejudice on July 7, 1966, by U. S. District Judge Walter E. Craig, "who stated that all interested parties, including those along the Verde River, should be joined in the action (Fort Apache Scout 1967b)." The Salt River Project was preparing a new petition in accordance with Judge Craig's instructions. This suit involved a title search of all land in the SRP's 13,000 square-mile watershed (Fort Apache Scout 1967b).

In 1967, upon notification of the impending action by the Salt River Project to reopen the Kent Decree, the following tribes:

White Mountain Apache, San Carlos Apache, Salt River Pima-Maricopa Tribes joined in preparation for legal action and hired Fred Kirgis, a water lawyer (SCAT 1967 n.p.). The BIA also cooperated with the tribes in gathering data to support Indian water rights.

Project attorneys argued that the Kent Decree legally established water rights within the Salt River Project watershed according to the principle of prior appropriation. However, the BIA, and the three Indian tribes involved in the controversy contended that the Indian reservations in question had prior water use rights according to the reservation doctrine. The interpretation of the Kent Decree and its relation to Indian water rights therefore became a focal issue in this dispute and it should be briefly examined.

The National Reclamation Act of 1902 made possible the creation of the reclamation projects of the Salt River Valley Water Users' Association. The Articles of Incorporation of this association recognized the appropriation doctrine but did not determine the prior water rights of individual members of the association. Hence, it was necessary to determine the basis for water rights in the flood water stored behind reclamation dams, and to quiet title to such waters.

In 1905, P. T. Hurley, an early irrigator in the Salt River Valley, initiated suit claiming his formerly appropriated water right and requesting that his title be quieted so that he might use sufficient water to cultivate his land. This historic suit known as Hurley vs. Abbott, was followed by other landowners who submitted to the

court evidence to establish their date of appropriation and secure their water right (Saylan 1968: 50). Because of this case, it was necessary to determine the water rights of all lands within the Salt River Valley. This resulted in the Kent Decree which determined the water rights of all lands within the valley.

Judge Edward Kent announced his decision on March 1, 1910 (Saylan 1968: 50). The court recognized the doctrine of prior appropriation giving priority of normal stream flow to those who had early rights in the stream (Mann 1963: 37). "The beneficial use of water concept was determined by the amount of water that the farmer could actually use for the necessary irrigation when he cultivated his land in the Kent Decree. The standard of 'beneficial use' set by the Kent Decree was 48 miner inches of constant flow of water for each quarter section of land (Saylan 1968: 51)."

However, to allocate the stored water, the court divided the land into three basic classifications according to their water appropriation: (1) Class A with preferential rights; (2) Class B with rights second only to Class A land, and (3) Class C with no established rights (Mann 1963: 37).

When the court considered the normal flow rights, the Salt River Indians were recognized as the earliest settlers of the Salt River Valley and received priority rights over all normal flow rights. "This normal flow right amounts to 700 miner's inches of water continuous flow (i.e. 35 acre feet per day), measured at the lateral ditch or ditches to land of the Salt River Indian Reservation at their point

of diversion from the Arizona canal (Saylan 1968: 51)." The Salt River Indians also received a right to 20 percent of the water stored in Bartlett and Horseshoe Dams in "return for contributing 20 percent of the total costs of building Bartlett Dam," but their share of stored water in the two dams cannot exceed a maximum of 60,000 acre feet in any one year (Ahmed 1965: 51). The Salt River Project paid the other 80 percent of the cost. The Kent Decree also stipulates that the Fort McDowell Indian Reservation is entitled to 390 miner's inches continuous flow, and the Gila River Indian Reservation to 324 miner's inches continuous flow.

The 13 year dispute over lake impoundments on the Apache reservations generated considerable controversy around the state. This conflict essentially involved the question of state jurisdiction over federal lands. Most of the 1.6 million acre White Mountain Reservation lies within the Salt River watershed system and some 312,000 acres of the 1.8 million acre San Carlos Reservation is also in the drainage system. The Fort Apache Reservation watershed contributes about 25 percent of the water that comprises the Salt River watershed system.

A major argument of the water rights conflict between the Salt River Project and the White Mountain Apache Tribe concerned the validity of the doctrine of reserved rights. The White Mountain Apache claimed a water appropriation date of 1870, from the year when the reservation was created. Salt River Project General Manager, Rod

McMullin, argued that normal flow water rights on project lands were established for the Salt River as early as 1869, and that surplus water rights for the Salt River in 1906, and 1919 for the Verde River (Fort Apache Scout 1967b).

This dispute over water impoundments on Indian Reservations was discussed during the trial of the Arizona-California case before the Special Master, Simon H. Rifkind, in July, 1957. Mr. David R. Warner, U. S. Assistant Attorney General, noted that there is the problem of placing a ceiling on water use because of changing needs on the reservation over the years. He cited as an example the use of water on the Fort Apache Reservation for recreational purposes. He added, that in the future the Apaches may decide to transfer their water use from recreation to industrial development to extract minerals from underground and that more water will be needed for this process (AISC 1958: 41). He remarked that to meet this sort of problem ". . . various decisions involving Indian water rights have contained 'open end' decrees, allowing the Indians to return and apply for more water if it is needed (AISC 1958: 41)."

Tribal Chairman, Lester Oliver of the White Mountain Apache Tribe, delivered an address before a national Indian conference in which he stated the problems and frustrations experienced by the tribe during efforts to effectively use their water resources to develop the economic potentials of their reservation.

Our enterprise advisors constantly recommend to us to develop our recreation potential; to develop our farming; and, in effect, put our lands to the best and highest use. Yet,

when we start constructing a recreational lake, certain powers that be in the State of Arizona immediately attempt to enjoin the construction thereof or put pressure on our congressional delegation and the Bureau to stop us from impounding any water. If some of us attempt to drill a well on our reservation to irrigate our lands, certain groups again do their utmost to prevent us from utilizing this water on our own lands. Again I say to you, unless we are able to develop our national resources on our reservations, our Indian people will be forced to leave the reservations and the use of our lands for all intents and purposes will be taken from us (Fort Apache Scout 1964a).

Newspapers in Arizona, particularly in central Arizona emphasized the threat of federal water rights over Arizona law.

Control of that water would effectively frustrate enforcement of historic state granted Arizona water rights . . . If the Indians win, it could mean that the already short supply of water in Central Arizona could be further shortened. The supply at Yuma could be affected, too; for the whole Colorado River Basin is one vast region of Indian Reservations and other federal domain. However, if the Apache Indians can build their dam, other Indians can build dams, too; and so could forts and other federal installations. Eventually a large portion of the water supply of Arizona's valleys might be cut off through the simple business of withholding it in the mountains on federal lands (Arizona Daily Star 1957d).

The Arizona Farmer-Ranchman was more outspoken in its criticism of lake development on the Fort Apache Reservation and recognized that this kind of water development or use is a possible denial of the prior appropriation doctrine and attacked the preserved rights doctrine for federal lands which ignore prior use.

The U. S. Dept. of Justice could not have picked an issue loaded with more dynamite than its contention that all water belong to the Federal Government and that Indian Tribes may, at any time, take over water appropriated generations or centuries before by prior users . . . If the Supreme Court upholds that doctrine, its decision simply cannot be enforced, white farmers and city dwellers alike will be fighting for their very existence, not merely for some sociological idea

. . .prior appropriation has been the law of the West ever since the Americans came. The Kent Decree and other judicial water-right decisions are written law and common law by which we live (Arizona Farmer-Ranchman 1957: 4).

Prior to the recent tentative settlement between the Salt River Project and the three tribes located in the Salt River watershed, it was the unofficial policy of the White Mountain and San Carlos Apache Tribes and the BIA to develop reservation water resources as fast as possible before the question of Indian water rights could be brought under litigation which might restrict Indian water use on these reservations. Therefore, lake development received prime attention on the Apache reservations in Arizona. It was the desire of the San Carlos Agency and Tribe to inaugurate a lake development project on that reservation similar to that of the White Mountain Apache, but funds for such a program were lacking. The San Carlos Agency estimated that this reservation has a potential of some 60 to 100 lake sites. The San Carlos Tribe built two recreation lakes, of which one is Seneca Lake (30 surface acres) near the Salt River Canyon, and the other is located at Point-of-Pines (35 surface acres) on Point-of-Pines Creek. Construction of both of these lakes was financed by the Branch of Land Operations through the BIA soil and moisture program.

The San Carlos Agency has made the following estimate concerning present and future needs of the Salt River watershed:

This watershed of 312,000 (acres) will produce approximately 14,500 acre feet of annual runoff. San Carlos Reservation's present use and future needs are less than half of this, which is probably all that can economically be diverted or stored for beneficial use. An undetermined amount of these

future needs will be pumped from wells, most of which will not be directly associated with surface runoff or stream flow and subsequently will not affect stream flow in the Salt River (SCAT 1967 n.p.).

The BIA and the Apache tribes argue that man-made lakes on the reservation are designed for a multiple-use concept for recreation, livestock, and wildlife. However, most individuals in the agency candidly state that since the lakes are situated at high altitudes in mountain cienegas that livestock seldom have access to them. Cattle cooperative officials agree with this view and add that when cattle are near a lake or pond frequented by recreationists that the livestock avoid approaching or feeding near the major impoundments (lakes) because of the recreation activity in the vicinity. The livestock manager of the White Mountain Apache aptly summed up this problem remarking:

There is a slight disagreement here between us. First of all, they (BIA) said that the lakes to be developed were to primarily serve the livestock and secondly would be for recreation. This has been anything but true . . . Let's face it, these lakes are not principally livestock lakes as designed . . . The lakes are used only in summer, and it's only during the summer months that we have cattle in the area. . . People are all over the place and our cattle are on the wild side and the presence of tents, camp stoves, archers, kids, fishermen, trailers, and the like scare the livestock and keep them from going toward the lake area . . . however, the cattle still use the streams that feed the lakes.

The lakes serve a single-use concept--recreation. They were constructed for this purpose; to boost the reservation economy by enhancing tribal recreation facilities. In a Ten-Year Program prepared by the BIA agency at Whiteriver was the insistence that Indian

water rights be protected and that recreation be recognized as a legitimate water use:

Of course, of utmost importance, all of the forces of the Bureau, the Justice Department and persons interested in helping Indians, should be martialed to insure that the Winters doctrine of water rights shall be made applicable to recreational uses as irrigation, and these rights should be held inviolate until our tribe has had a chance to put the waters to their maximum use (FAA 1964 n.p.).

Indian cattle association spokesmen not only complain about the single recreation use emphasis of the large impoundments but that, in some instances, recreation development of parks and lakes have resulted in a reduction of a district's range. The North Fork Association suffered the greatest loss, as within their range are several recreation developments, including Smith Park. The cattlemen of this association are among the most successful livestockmen of the reservation. They are commonly called the "Blue Eyed Indians" owing to some intermarriage with whites, and because they are more acculturated than other reservation Apaches. They are known as successful businessmen. Their association received financial compensation from the tribe for the land loss. There is little, if any, resentment concerning recreation projects within their district. This may be because they were compensated for the loss and recognize the value of recreation to the reservation economy.

Tribal and BIA officials also argue that the lakes contribute towards water conservation by storing water. The BIA has claimed that the lakes reduce the phreatophytic growth of the cienegas where they

are constructed and hence conserve water. It is doubtful if the removal of phreatophytes at the 20 some high altitude lakesites have increased the quantity of water in this watershed. Some hunters who frequent the reservation, both Indian and non-Indian, have complained that construction of lakes in mountain cienegas has limited the natural habitat (feeding grounds) of some large game animals, particularly the elk. The lakes are responsible for water loss by natural seepage and evaporation according to project spokesmen.

The Salt River Project claims that lake development increases evaporation, and upsets the hydrological balance of the watershed. The project argues that the Indians' water is for farming, not for recreation lakes. Not only has the Salt River Project been critical of reservation lake development, but of unauthorized storage of water by stock tanks. Salt River Project officials have remarked that the Project could lose all 375,000 acre feet of increased water yield due to watershed treatment program because of stock tanks and lakes on the reservation (Smith 1967 n.p.). Some 500 stock reservoirs have been made on the Fort Apache Reservation and over to stock reservoirs on the San Carlos Apache Reservation. Many of these reservoirs are unnecessarily large according to the Salt River Project.

Essentially, the conflict of the Salt River Project with the Apache reservations involves not only state jurisdiction over federal lands but the specific use of water, that is, for recreation rather than farming. According to the Salt River Project with the increase in recreation on federal lands; timber, livestock, and water users lose.

In 1965, the Salt River did not produce as much as the Verde; the Salt River Project contends that the Indians are to blame for this condition (Smith 1967: n.p.).

This controversy appears to be permanently or at least temporarily over as the Salt River Project, the three Indian reservations involved and the BIA are presently engaged in obtaining a mutual agreement to avoid litigation. It is possible that development of the Central Arizona Project, and continued economic expansion on the Apache reservations in the Salt River Project watershed, that the question of Indian water rights may arise again and be determined in court. However, the Arizona Republic noted that "The proposed agreement to settle the dispute between the three Indian tribes and project is expected to reduce the impact of any court action arising from the case (Arizona Republic 1969)."

In this tentative agreement, the three tribes would be assured of 50,000 acre-feet of water annually from the tributaries of the Verde and Salt Rivers. This proposal would guarantee yearly allotments of water to the following tribes in this order: White Mountain Apache with 36,500 acre-feet; San Carlos Apache with 13,000 acre-feet; and the Yavapai with 432 acre-feet (Arizona Republic 1969). The quantity of water to be used is to be determined by "a complex formula applying flexible terms to govern reservation uses of water as outlined in the agreement is based upon whether the water is used for irrigation purposes, stock tanks, municipal, recreation, or

industrial (Arizona Republic 1969)." The proposal will be effective if accepted by all related parties: the Salt River Project, the three tribal councils, and the Secretary of the Interior.

Watershed Programs and the Multi-Purpose Concept

Reservation watershed programs are designed for the multi-purpose concept of serving commercial timber harvest, preservation and improvement of the watershed, recreation, wildlife, fire prevention, and livestock. However, the major concern of a watershed project to both the BIA and the tribe is improvement of the livestock range as this benefits the Indian stockman and hence the tribal economy. Secondly, these projects are important to the tribe as they promote a favorable image of the reservation to the non-Indian. This is especially important in view of the recent controversy concerning water rights with the Salt River Valley Water Users' Association. In fact, tribal brochures for the tourist mention the Apache struggle to preserve reservation water rights and the White Mountain Apache Tribe's activities and cooperation in water conservation programs. Of course, another reason for Indian approval of watershed projects is that they provide employment for tribal members. In some cases, manual labor has been and is encouraged where possible to provide greater employment for the Indian.

The meaning of the term, "multiple use," as it applies to watershed programs of both the San Carlos and Fort Apache Reservations cannot be denied, but it ought not to be overemphasized. The Apaches

are primarily concerned about their own resources--cattle ranges and commercial timber forests. One agency official aptly remarked that it is good psychology to stress the multiple-use concept when planning a resource program. "Multiple use of a watershed program sounds impressive. It projects the idea of many uses; that it will benefit many, thus maximizes its importance and hence is attractive to those who provide the necessary appropriations."

Some BIA officials have remarked that in view of the watershed projects on the Fort Apache Reservation that little has been learned about water production. They noted that there is a need to know more about the results of these programs. This, no doubt, supports the view that the BIA and tribe are primarily interested in improving forage production. Despite watershed and range improvement programs there has been no increase in the range capacity within the last 50 years.

The Barr Report certainly had a tremendous effect by proving the value of watershed programs in terms of water conservation. As one agency official remarked: "Many of those departments and persons who had read the Barr Report believed it would solve all problems. It was a period when everyone jumped on the band wagon." The Salt River Project, the Arizona Land Department, the Arizona Water Resources Committee and others enthusiastically endorsed the Cibecue Project. Primary aims of the program were to increase water flow in the watershed and improve the range. The latter was of major concern to the

BIA and the tribe as this would improve the livestock industry. Preliminary research planning for this project included examination of the grazing history, soil and plant studies.

Range Improvement Programs

Reservation watershed planning must be cognizant of current conditions and use of the watershed as well as the history of the watershed. Vegetation zones on the Fort Apache Reservation are influenced by the order of descending elevation comprising fir and ponderose pine forests, piñon-juniper woodlands, chaparral, desert grassland, and southern-desert shrub. The piñon-juniper woodlands include about 80 percent of the reservation at intermediate elevations mainly between 4,500 and 6,500 feet (Arnold 1955: 3).

The grazing history is important in this respect as overgrazing has been a major contributor to such range damages as erosion, grass reduction, and infestation of juniper and pine thickets. The Fort Apache Reservation was lightly grazed until 1912 when the range capacity was fully utilized. In this year the gradual build-up of stock grazing on the Fort Apache Reservation caused concern over range conditions among agency officials (FAA 1960: 10).

Continued overgrazing deteriorated many portions of the range, denuding the grass cover, resulting in erosion, and infestation of juniper brush. The Fort Apache Agency reported in 1924 that overstocking had become acute. Apache frequently pastured their livestock near their camps. This practice encouraged overgrazing in some areas. Range abuse was severe where year-long overstocking was practiced.

In 1927 the Fort Apache Agency recommended an average reduction of 50 percent. In 1931 the agency reported an animal unit total of 34,979 of which 22,326 were Indian owned (FAA 1963 n.p.).

In 1941, Assistant Regional Forester, W. R. Centerwall expressed concern over juniper-pine thickets noting the following: "During the past six years, during which period the ranges of the Fort Apache Indian Reservation have been under close observation-- the effect of juniper and piñon pine range land invasion has been very evident and pronounced (Centerwall 1941: 2)."

In fact, the first juniper control project on the reservation was started in 1939. This received support from the various agency branches including forestry, grazing, and soil moisture conservation. These branches cooperated in field trials on various methods of eradication. This same area was retreated in 1948.

By 1945, horse and cattle reduction was evident. At this time, there were 4,000 non-Indian cattle, 5,000 Indian cattle, and 3,000 Indian horses. By 1953 the last of the non-Indian livestock permits had expired and now all reservation cattle ranges were exclusively used by Indian stockmen. In this year, the White Mountain Apache Tribal Council adopted a range ordinance. This authorized 18,170 animal unit capacity but 20, 136 were grazed. By 1958 the authorized carrying capacity was reduced to 16,959 animal units (FAA 1963 n.p.).

The U. S. Geological Survey is carrying out two small watershed studies on the Fort Apache Reservation: Apache Ponds, (two

drainages No. 1 and No. 2) and Cibecue Ridge (two drainages No. 1 and No. 2). The latter is a research study and part of the International Biological Program supported by federal funds. It is a five-year program begun in 1967. In both projects, one drainage is untreated and the other treated so that a comparison can be made from the calibrated data. The University of Arizona (Department of Watershed Management) is currently involved with a water recovery study in the vicinity of the Whiteriver airport.

Two major large-scale watershed programs on the Fort Apache Reservation are the Cibecue and Corduroy Creek Projects. By the efforts of the Arizona Water Resources Committee and Watershed Management Division of the State Land Department, \$100,000 was appropriated by Congress in the fiscal year 1959 to complete the Corduroy Project. The Corduroy drainage is approximately 25 miles in length located two and one-half miles northeast of McNary, Arizona, heading west then southwest until it meets Carrizo Creek west of U. S. Highway 60. The total drainage is 146,000 acres. Methods of control included hand cutting and burning, girding, mechanical control (chaining followed by burning), and grubbing and prescribed burning (confined to areas of dense ponderosa pine reproduction in logged-over lands).

The use of the bulldozer to eradicate alligator juniper has been subject to some criticism among personnel of the Branch of Land Operations of the Fort Apache Agency. Surface cuts by dozers have encouraged erosion in some instances. Less injurious to the land,

would be spraying oil upon the brush and later burning the dead vegetation. However, this operation would require considerable more expense by employing large work crews.

In many cases, juniper removal programs have been concentrated near roads. This has a possible "showcase" effect by promoting a favorable image to visitors. So-called watershed programs have been conducted in most Apache communities by the Community Action Program. This is really a beautification project within the community.

The Cibecue Project. The other watershed program undertaken on the Fort Apache Reservation was the Cibecue Project. This was begun in 1960 and completed in 1965. Special appropriations of \$500,000 were received by the federal government with some financial support from the tribe.

Much of this land comprised range controlled by the Cibecue Livestock Association. The association accepted the project and the non-use schedules which meant that the range was to be reduced in specific areas where watershed programs would be initiated. The BIA was impatient and ignored receiving official approval from the local livestock association whose range was to be affected. As one ex-livestock official from Cibecue reminisced:

The Cibecue Board was asked to cooperate and we agreed. But let me tell you this. They (BIA) had already moved in on the land and got things going without our consent which made me very angry and so were other members of the association . . . The BIA too often works this way and this sort of thing is harmful to the community which is put in a secondary position.

Both agency and livestock Indian association spokesmen remarked that the Cibecue Livestock Association favored the watershed project because they were primarily interested in improving the range, but unfortunately, they (the members) did not understand the terms of the mutual agreement they concluded with the BIA. "They were to help, assist, support, and maintain the watershed area. This really seemed foreign to them later when they were reminded of this, and many were quite upset . . . This happened because of the cultural gap, they just did not understand. They don't even know their own bylaws." According to a BIA official, association members did not abide by all the terms in the agreement but the agency is used to this and accepted the responsibility where possible.

Both the Fort Apache and San Carlos Tribes have sponsored summer youth camps for Indian boys and girls which have stressed conservation and development of reservation natural resources. Watershed management has been included in these programs.

The Watershed Management Division of the Arizona State Land Department produced the film "The Cibecue Watershed," which optimistically depicted the Fort Apache Reservation watershed improvement program.

Prescribed Burning. Prescribed, also called intentional or controlled, burning is now an accepted practice in fire prevention. This is a method whereby forest debris and non-economic fuels are eliminated by supervised burning under proper conditions with adequate

safeguards. In the southern United States controlled burning has been practiced with proven success. But in the western states, which possess the greatest public lands, state and federal forestry specialists were conservative and questioned whether maintenance of sufficient fire controls during prescribed burning could be insured. There are several reasons for this expressed apprehension. Natural conditions are radically different in the West than in the South. The forested terrain of the western states is more rugged and the weather more unpredictable and these factors can be critical in fire control operations.

The BIA has been the pioneer of prescribed burning in the West. Harold Weaver, a forester associated with the BIA in the Coleville region of Washington, advocated the use of prescribed burning in ponderosa pine country to reduce the wild fire potential. In 1948, prescribed burning was practiced on an experimental basis on the Fort Apache Reservation under the supervision of Harry Kallander, then Forest Manager at the agency (Knorr 1963: 37). The program was initiated as a result of heavy fire losses in the Southwest during the preceding years. In the White Mountains, during the summer months, particularly in June, (a period of severe electric storms), the forest fire potential becomes acute. Prescribed burning on the reservation is conducted during late fall and early winter when the fire danger is greatly reduced.

Between 1950 and 1960, about 151,000 acres of ponderosa pine land was subjected to controlled burning (FAA 1960: 10). The BIA

optimistically reported that in 1955 that ". . . prescribed burning was responsible for an 83 percent reduction in number of fires, a 94 percent reduction in area burned, and a 65 reduction in size over the three years (1951-1953) (Mann 1963: 242)."

A study conducted by the Department of Watershed Management of The University of Arizona established the effectiveness of prescribed burning as a means of fire prevention on the Fort Apache Reservation. This comparative study examined the fires before and after the 1954 prescribed burn on 42,500 acres of forest land on the reservation. This examination concluded that controlled burning reduced the average size of wild fires on the treated area. The study also noted, "It is also probable that the number of wild fires has been reduced slightly by prescribed burning procedures (Knorr 1963: 37)."

San Carlos Phreatophyte Removal Program. Reduction of phreatophytes, another form of vegetative manipulation, is an important means of water conservation or salvage. Phreatophytes are "well" plants, such as the salt cedar and arrowweed, with roots that extend into the capillary-fringe water above the water table. Phreatophyte removal provides one of the best opportunities to increase water yields in hot, arid areas. A phreatophyte problem exists on the San Carlos Reservation within the bottom lands on the San Carlos and the Gila River valleys.

The Gila River does not remove from the Gila Valley the salts which accumulate during the groundwater loss period from April to

November. Part of the salts remain in the soil, while the rest returns to the groundwater. Heinrich Thiele, consulting hydrologist for a reservation groundwater survey, noted that an increase in salts is caused by the presence of the salt-cedar which within the past 50 years has invaded the bottom lands of the Gila River Valley and is constantly spreading. He recommended that a phreatophyte removal program be inaugurated to reduce salt concentrations and salvage water consumed by these plants (Thiele 1960: 23).

The U. S. Geological Survey is currently involved in the Gila River phreatophyte projects. It has been estimated that if the upper Gila Valley were cleared on these plants, that 48,000 acre-feet of water would be salvaged. However, replacement grasses would use 12,000 acre-feet. Therefore, the net saving would be 36,000 acre-feet (Arizona Academy 1964: 108).

Several factors were considered in selection of locations for the Gila River phreatophyte projects. These included the geology, river discharge characteristics, the vegetative cover of flood plain, and land ownership. The project area selected encompasses a 15 mile reach of the Gila River flood plain from highway bridge on U. S. 70 near Bylas to a point four and one-half miles above the mouth of the San Carlos River. This includes removal of 14,000 acres of phreatophytes in the Gila and San Carlos River basins to increase water yield for irrigation. Thus, the project's goals are to improve water flowage and storage and to increase grazing lands. The main phreatophyte is the salt cedar on the San Carlos Reservation.

A mutual agreement for this project was concluded in May, 1962, between the San Carlos Tribe, the BIA, and the U. S. Geological Survey. In 1971 following expiration of this U. S. Geological Survey project, the tribe is to assume responsibility for maintenance of this phreatophyte control program (SCAT 1965: n.p.). The project area is being cleared and beneficial vegetation planted. The evaluation of evapotranspiration from the altered vegetation will be continued through 1970.

The project has created 35 jobs for Indians. Under the training program, sponsored by the Manpower Development Training Act, they are trained to operate and service heavy equipment. Phreatophyte clearing is done under a labor contract with the San Carlos Apache Soil Conservation District. This project benefits the reservation economy and provides technical training for those employed.

However, this joint program has encountered considerable vocal opposition from wildlife conservationists. They view the project as destroying some of the valuable dove nesting habitats in the state, which will be a loss to recreation and the economy. The Arizona State Fish and Game Department is attempting to have the clearing areas in the Safford Valley and the Phoenix-Buckeye area reduced to preserve some of the state's remaining dove habitats (AFGD 1968: 55).

Livestock Associations. The Fort Apache Indian livestock industry is composed of eight cattle districts or associations. Each district has approximately 2,000 head of cattle. Technically, each

division is an independent cattle ranch. Membership in each district varies from 35 to 114 persons. Each district is divided into subunits which are fenced off. Each subunit has a specific carrying capacity on its range and only during a said time of year. All districts are under the administration of the General Livestock Board. The General Board is responsible to the BIA and the tribal council. Livestock and range management by each district must concur with the ordinances and regulations established by the tribal council. BIA range technicians assist the General Board and individual associations. The board and associations cooperate and work together on range conservation and watershed programs. Each district president is a member of the General Board and thus each district is represented in matters of range policies, and livestock management.

The board may supply individual districts with the necessary funds for range improvement or maintenance. It also may arbitrate in disputes between and among individual districts. The manager of the board is responsible for all operations of the board, including livestock sales for all associations and the ID tribal herd.

Cattle association members pay a grazing fee of \$2.00 per head each year to the tribal treasury for use of the range which belongs to the tribe. No funds go directly to the General Board from the BIA or the tribe. The General Board is independent and operates from funds paid by the districts.

In some cases, a local cattle association may provide some funds for a watershed to improve the range land of the district and

hence result in economic benefits to the district. For example, Canyon Day Association has spent some of its treasury for this purpose.

Ditching and pipe line construction and maintenance is generally the responsibility of the local community organization. Among the Apache, agriculture is quite minimal and generally consists of small garden plots for family consumption. However, an exception is the Cibecue Livestock Association which has, at times, spent a small amount of their treasury to clean local irrigation ditches.

Poor communication between the BIA technicians and local Apaches has been discussed in the conflict concerning the Cibecue Watershed Project and the Cibecue Livestock Association. Agency technicians often complain about the inability of local livestock district to comprehend BIA range development policies and agreements concluded with local districts. One such example concerned an agreement concluded by the Branch of Land Operations with a local livestock district to drill a well on their range. During the local livestock association meeting, BIA representatives discussed the proposed project and displayed a map showing the location of the well. The association members voted favorably toward the project and signed the agreement. However, several months later when the BIA technicians began drilling the well, they were met by angry association members, and were accused of trespassing upon the district's land without authority. BIA range management technicians remarked that the entire cattle range could be significantly improved and the carrying capacity increased by temporarily reducing the present carrying capacity to

treat impoverished areas of the range and then reseed them. However, Apache livestockmen are opposed to this project because it would require cutting current stock numbers, even though the long-range effect would improve the range and increase the total carrying capacity. In reference to BIA watershed and range management programs, an employee of the General Livestock Board said the following about the lack of the BIA to communicate with the Indian:

The average range technician does not understand the Apaches. He may know about the soils, plants, and this sort of thing, but he knows nothing about the people and the way they think. They (the Apaches) are never consulted, but (only) advised. The only spontaneous enthusiasm has been on the outside by the Anglo, not the Indian.

The success of all reservation human and natural resource development will depend upon the ability of the Indian community to manage their own affairs. The long-established sense of dependence of the reservation Indian upon the BIA has been and still is a crucial problem to Indian self government. The problem is inherently complex and can hardly be simply glossed over. It has been discussed, at some length, in the introduction of this study. This dependence can be traced back to the establishment of the reservation system when Indians became wards of the government and their very survival depended upon government issuance of food and clothing rations.

The Indian livestock industry was intended to be primarily an Indian operated business. However, its success has depended upon non-Indian administrators (managers, bookkeepers, technicians). The manager of the General Livestock Board summed up this attempt in the following statement:

It is a shame that we do all the work for them (Apache cattle owners) manage the various economic operations and all they do is to pick up their cattle checks. You know, when this Indian operated cattle industry got underway, it was not intended that the Indians be in the background and let the White man operate, manage everything for them. They were to do their part. But, of course, you are running a business and if the people don't take their responsibilities this is the way things turn out. Yet of all the economic enterprises, on this reservation the cattle industry I think is important because the Indian comes closer here to operating himself than he does with the timber operation or the fish ponds.

The White Mountain Apache Tribe finances stock tank development. There are some 500 stock tanks or reservoirs on the reservation. It was mentioned previously in this chapter in the section concerning Salt River Project Water Controversy that these tanks were a factor in the water rights conflict with the Salt River Water Users' Association.

The old stock tanks constructed by the Indian Emergency Conservation Work (IECW) program during the depression era are gradually being abandoned. They are antiquated and frequently silt up and occasionally a cow becomes stuck in them and perishes. These old tanks are being replaced by spring development and some 80 miles of plastic pipe which runs from springs to steel drinkers. The tribe furnishes a bulldozer for this operation and the cattle board pays the operator and provides the necessary supplies. Technicians are furnished by the BIA.

In the case of spring development, the livestock board usually makes a request for this development and the Branch of Land Operations buys the materials and provides a crew. Traditionally, they billed the

board for the labor and these funds came from the tribal budget. The category is called "range water development". The materials for range water development came under the budget marked tribal development. However, the spring development program has been altered since the tribe began to develop recreation lakes. Now, spring development is under the Agricultural Stabilization and Conservation Service (ASCS) of the Department of Agriculture. All tribal range water development activities are now included under the program called "water development". Stockmen are mildly critical because the word "range" has been omitted and the program is now simply called "water development".

ASCS pays up to 80 percent of the cost of range improvement projects and for well development up to 50 percent. The remainder of the cost comes from the Livestock Board. ASCS may also cover fence building if the constructing is deemed a significant conservation measure. Here, ASCS pays up to \$1.50 per rod of the cost of fencing.

During the depression years under Emergency Conservation Work (ECW) a number of springs were developed on the reservation for livestock. Also fencing projects were established. Up to 1959 the General Livestock Board was under the BIA. Prior to 1959, a BIA extension agent was in charge of livestock operations for Indian livestock industry. Since 1963, the General Board has operated independently with its own manager. Since this year, some ten new springs have been developed on the reservation. The board of directors of the General Board have requested that these springs be developed. Tribal

employees are used for such projects. The local association then pays for the labor and the tribe provides the necessary materials. Maintenance of such spring development are assumed by the local district, but this is seldom ever an accepted responsibility. Here, the government must fill in and do the work.

Reservation Agriculture and Water Resources

Agriculture traditionally has been a negligible economic resource of the Fort Apache Reservation economy. However, to the average Apache family, subsistence farming has been, and in many cases still is, an important augmentation to the food supply. There are approximately 2,900 acres under irrigation on the reservation. Most of this land is held by assignment for small garden plots. Some of this land is idle and the assignees are reluctant to give up possession of this land because they are interested in protecting their inherent family claims.

The BIA supports a consolidation program to convert this land into economic sized units (40 acre minimum) to provide a source of income for an estimated 50 Apache families. This land is capable of producing fruit, truck, and bag crops (FAA 1964: 82). It is doubtful if most Apaches would relinquish their garden parcels, regardless of the economic potentials of a consolidation program. Subsistence plots are too highly valued by the Indians. If this plan is unattainable, the BIA supports placing the unused cropland into irrigation pasture to provide supplemental livestock feed.

The BIA has included in its Ten-Year Program, five major irrigation projects which includes: Gleason Flats, Mountain Meadows, Forestdale, Whiteriver, Cedar Creek, and Corduroy Irrigation projects to be supplied with water from wells and diversions from reservation lakes and streams. These projects would bring into cultivation an estimated 3,200 acres to produce livestock feed and other crops, such as sugar beets, Christmas trees, etc. (FAA 1964: 103). Total costs estimates are in excess of \$2,000,000. The projects would provide permanent employment for about 50 persons.

Summary

The two Apache reservations in Arizona share three million acres of valuable watershed drained primarily by the Salt and Gila Rivers. The economics of these reservations rely upon water resources not only in the traditional livestock and timber economies, but also in the development and expansion of a new water recreation economy designed to help alleviate Indian unemployment.

Since the inception of tribal recreation enterprises, the Apache tribes have become aware of the importance of protecting and defining Indian water rights. This has been a result of conflict with non-Indian downstream water users due to development of man-made lakes on the reservations. The Apache tribes neither wish to jeopardize nor endanger their water rights. Both Apache reservations and the Salt River Project apparently have demonstrated a willingness to negotiate, and a genuine concern in developing a program of watershed management and water conservation.

CHAPTER 4

AN OVERVIEW OF RESERVATION WATER RESOURCE DEVELOPMENT

The active role of Arizona's Indians in influencing state water policy is a recent phenomenon. This is a result of the insistence of Indian leaders to develop and utilize reservation water resources to safeguard Indian water rights and expand the tribal economy. It is also a consequence of a new federal policy of the BIA to develop reservation resources. As Indian communities continue to develop their water resources, the greater will be the collective role of the tribal council, the BIA, and tribal legal representatives in shaping Arizona's water policy.

Aggressive resource development on Arizona Indian reservations promoted by the federal government has been implemented by generous federal grants and loans, and made possible by congressional authority for private long-term leasing. It is the thesis of this paper that, while development of Indian water resources may often encourage conflict situations, it nevertheless defines and protects Indian water rights.

The allocation and use of water resources within the state is competitive. For this reason, resource programs on Indian reservations have precipitated several conflict situations. Basic disputes

involving Indian water rights have been related to the allocation, the quantity, and the specific use of water. A principal issue overlying these disputes is the conflicting State and federal interpretation of Indian water law. The two major Indian water rights issues in Arizona involved the Salt River Water Users dispute with the Apache Reservations, and the Arizona-California controversy between the Colorado River Indian Reservation and the States of Arizona and California.

Indian water right issues have not been so much a consequence of urban-rural conflicts, but simply a matter of competition between off-reservation and reservation users for a scarce resource. The Salt River Project-Apache controversy involved the issue of development of Indian water resources within the Salt River watershed which, according to Salt River Project officials, threatened non-Indian agricultural interests and urban water users in the heavily populated Salt River Valley. The specific use and quantity of water were important factors in this dispute. The Salt River Project contended that Apache recreation lakes were secondary in value to irrigation and power projects of the Salt River Project.

The Project also complained that some stock reservoirs were unnecessarily too large. This conflict, involving opposing federal and state laws, was a controversy concerning downstream and upstream water users: the off-reservation water users within the Salt River Valley, and the Indians occupying a reservation located within the

Salt River watershed. In this sense, it was not unlike traditional water disputes in the West between upstream communities within the watershed and the downstream water users.

The Colorado River issue concerned competitive use of water from the Colorado River for agricultural development. Indian water rights in this case involved conflicting interpretations of state and federal law concerning Indian water rights. As was the case of the Apache Reservations, development and projected use of Indian water resources generated conflict with non-Indian interests. In this dispute, the States of Arizona and California opposed large-scale agricultural development on the Colorado River Reservation. Obviously, if the Colorado River Indian Reclamation Project had not existed, there would have been no competition for water involving Indians, and thus no conflict with non-Indians.

Some Indian reservations located in non-watershed areas have experienced conflict over water use with non-Indians in "water crucial areas" designated by the Arizona State Land Department. Conflict situations of this nature have been cited in this paper concerning the San Xavier Papago and Gila River Pima Reservations. On these reservations, the off-reservation communities feared that Indian deep well drilling would endanger the groundwater supply.

The above water right conflicts have been resolved either by litigation and mutual agreement or, at least, have been temporarily quieted though still subject to possible adjudication. The development of thousands of acres of desert land for agricultural expansion

and the necessary concomitant water right for this project on the Colorado River Reservation was settled by court action. The Salt River Project controversy apparently has been resolved by mutual agreement by all parties concerned. This may be because the Salt River Project feared that to reopen the Kent Decree and contest Indian water rights would be a very expensive undertaking requiring considerable time. For the same reasons, the four Indian tribes involved did not wish to enter into litigation. It is possible that the Salt River Project believed that their position might be endangered by imposition of the reservation doctrine since federal interpretation might be superior to state interpretation. If this conflict had gone before the court, a settlement may have been patterned on the Arizona-California case whereby the Colorado River Indians were awarded a specified water right determined by projected use.

Potential conflict situations involving water rights may be reduced or at least temporarily avoided between Indian and non-Indian communities by not only mutual agreement and cooperation in determining water use as was the case with the Salt River Project, but also by reservation resource development through private leasing and joint Indian and non-Indian projects, such as industrial parks on the reservation. Proposed agricultural expansion on the San Xavier Reservation by a private lessor has not yet created dissension with State agencies or the City of Tucson. However, the conflict situation here

may have been averted or postponed by the City's development of groundwater wells in the Avra Valley.

Perhaps future controversies between the Gila River Reservation and non-Indian communities over groundwater use will be reduced by development of industrial parks on the reservation. Water requirements for industry are less than those for agriculture. Hence, industrial parks may not be viewed by non-Indians as a serious threat to the groundwater supply as are agricultural developments. Since joint Indian and non-Indian industrial development benefits both communities, the probability of conflict situations over water resources may be reduced. For example, the City of Chandler has invested a large sum of money for the Chandler Industrial Park. Though this plant will require a substantial amount of groundwater, it will practice water conservation as water will be processed for re-use.

It is therefore the contention of this study that private investment on Indian land may reduce to some degree political and legal sanctions against the utilization of Indian water resources than if the Indian were to develop this resource with his own funds or by government assistance. However, future problems related to Indian water resource development may arise; such as State taxation of developed land and increasing pressure of non-Indians to seek termination of a developed Indian land base.

If the Indian does not protect his water rights by developing and utilizing this resource, these rights may be jeopardized. Because

of competition involving this scarce resource, Indians seek federal protection under federal laws. This does not mean that cooperation and participation with non-Indians and state government is impossible. State-wide water resource projects such as the Central Arizona Project and various federal and state watershed improvement programs may serve to establish a better environment to allow both Indian and non-Indian to share in developing a state water policy.

Indian leaders and tribal members are faced with the problem of rapid social-economic change without adequate Indian involvement in such programs, or full comprehension of development projects, or the possible consequences of such programs.

Since the Kennedy administration, the BIA has become active in reservation resource development. BIA personnel who possess decision and policy-making powers are, by and large, technicians, and not social scientists. The stress is upon tangible things whether this be minerals, trees, or water. Providing the necessary appropriations, roads can be constructed and irrigation systems developed. However, the possible sociological consequences of these physical improvement projects are not seriously considered by planners nor administrators. This includes the effects upon the Indian community during initial planning, implementation, administration, and operation after a program has been established. Indian reservation resource development has not sufficiently taken into account the human resource. This includes the relationship of the Indian community to the total environment. This

environment comprises the reservation and off-reservation setting, both in terms of the human and physical components.

The traditional goal of a self-reliant Indian farmer is no longer an objective of the BIA. Frequent failure to achieve this goal frustrated the BIA. Indeed, it is much easier to transform and develop physical resources alone than to foster and implement a program which emphasizes human factors related to the land. The Indian may have his land developed, but have no active role in the administration and planning of such programs, nor receive substantial benefit from the employment created by a resource development project. In fact, he may become as have some Colorado River Indians, an absentee landlord whose only relation to his land is that of an idle lessee, with no source of employment, receiving a monthly subsistence rental payment. If Indian reservations are to be developed solely by private leasing and the Indian residents are to become alienated from their land base, then serious consequences may follow. This situation may present a false impression of Indian economic success. The reservation is then attractive to termination and liquidation of the landed assets.

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(Uncited quotations within the text are derived from field notes obtained by the author and are in the files of the Bureau of Ethnic Research, Department of Anthropology, The University of Arizona, Tucson.)