

Y U M A

FEDERAL RECLAMATION PROJECT



United States Department of the Interior
BUREAU OF RECLAMATION

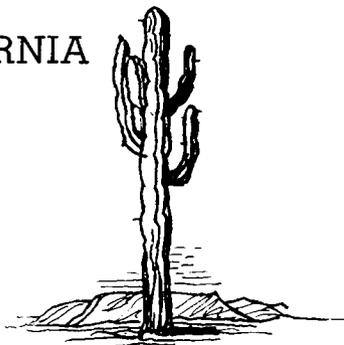


United States
Government Printing Office
Washington : 1936

YUMA

FEDERAL RECLAMATION PROJECT

ARIZONA - CALIFORNIA



LOCATION AND CLIMATE

THE Yuma project is located in the southern part of Yuma County, Arizona, and the southeastern part of Imperial County, California, on both sides of the Colorado River, adjacent to Mexico. The climate on this project is subtropical with a range of 20° to 120° F. Few places have as much sunshine, and the mild, dry winters are unsurpassed anywhere in the United States. Light frosts on the valley lands usually occur from November to March, while on the Mesa lands, which are devoted principally to the growing of citrus fruit, damaging frosts have not been experienced in the past 40 years. The average annual precipitation is 3.4 inches. The elevation of the irrigable lands in the valley varies from 80 to 140 feet above sea level; the Mesa lands are some 75 feet higher in elevation.

HISTORICAL

Much history has been written about Yuma from the year 1538 when Pedro Nadal and Juan de la Ascuncion, two Jesuit Monks, came from the interior of Mexico. They are believed to have been the first Europeans to have reached the junction of the Gila and Colorado Rivers, which is the present location of the city of Yuma. During the years following this first visit, several expeditions passed through Yuma, and priests sought to establish missions here. Fort Yuma was established and garrisoned with United States troops in 1856.

The first stage service operated from San Diego to San Antonio, via Yuma and Tucson, inaugurated in 1857, was followed by the Butterfield Stages, which operated from September 1868 until the outbreak of the Civil War. Railroad service to Yuma was not established until 1878. The United States Quartermaster's Depot was established in Yuma in 1864. Supplies were brought up the Colorado River from the Gulf of California by boat and distributed from Yuma by mule teams to forts in southern and central Arizona.

Prior to 1866 Yuma was known as Arizona City, which was incorporated by an act of Territorial legislature on March 11, 1871, and on February 3, 1873, its name was changed to Yuma. On the east bank of the Colorado River at Yuma the ruins of the old Territorial prison, erected in 1876, still stand, reminder of days whose history was written before Arizona was admitted to statehood.



Laguna Dam, Sluiceway, Canal, and Gates.

IRRIGATION WORKS

The project is well served with engineering structures and a well-designed canal and lateral system to convey water from the Colorado River to the irrigable lands, as well as a comprehensive system of open drains for disposal of surplus ground waters originating from irrigation operations or otherwise. The main engineering features are the Laguna diversion dam, of the Indian weir type, which is built across the Colorado River some 13 miles northeast of Yuma; the Colorado River siphon, which carries the irrigation water

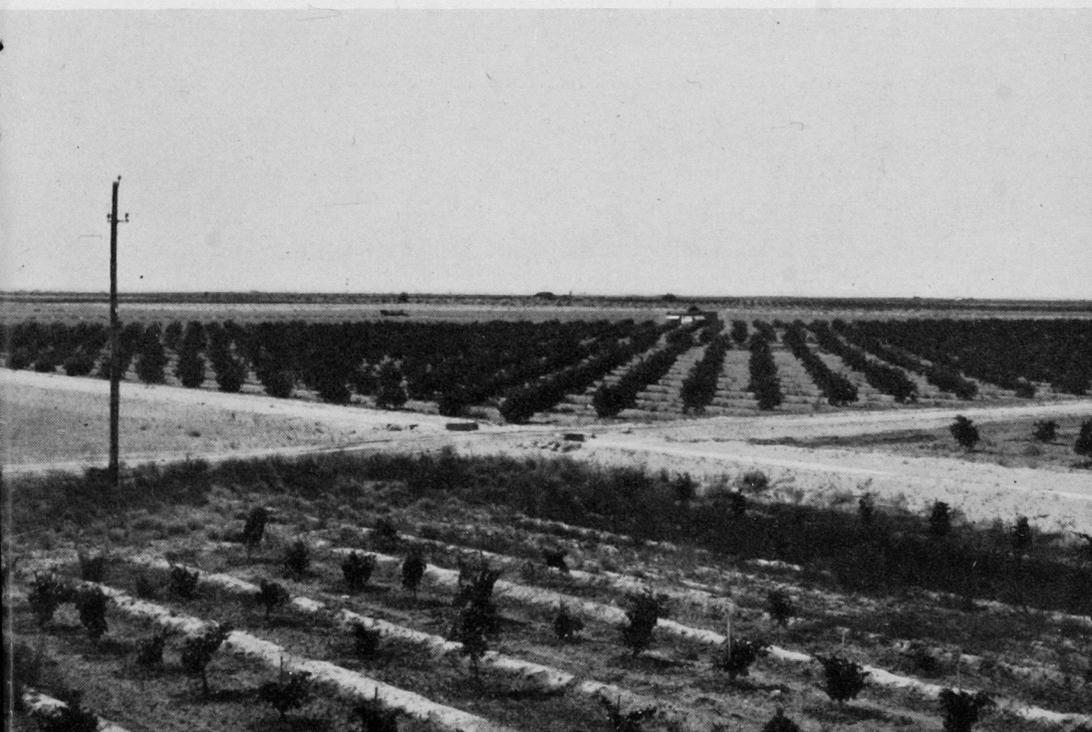


from the California side of the river to the Arizona side; and the Siphon Drop power plant, constructed in 1926, which supplies all the necessary power for project pumping plants and machine shops and provides a substantial annual revenue to the water users through the commercial sale of all surplus energy. The irrigable lands of the project along the Colorado River in both California and Arizona are protected from overflow during flood stages of the river by means of levees. Near the international boundary, at the lower end of the project, a permanent pumping plant is provided for pumping drainage water, collected by the drainage system, over the levee. The Colorado River is a silt-bearing stream, but a desilting basin at the intake works

Upper left: Harvesting Pecans.

Lower left: Mature Pecan Trees in Yuma Valley—Few Localities in the United States Can Grow This Nut.

Below: Citrus Orchard on Yuma Mesa.





Harvesting a Half Million Dollar Crop of Winter Lettuce.

removes the heavier portion of the silt burden. The supply of irrigation water is always adequate, and water for domestic purposes is obtained from wells.

Upon completion of the All-American Canal and Imperial Dam, the project will obtain its water from those sources through more efficient desilting works which, together with the desilting effect of Boulder Dam and other dams now contemplated on the Colorado River, will, it is anticipated, reduce the silt content of the project irrigation water to a considerable extent. The removal of silt from the project canals and laterals at the present time accounts for a large percent of the operation and maintenance cost, and a de-

crease in this item should be reflected in future reduced operation and maintenance charges.

IRRIGABLE LANDS, SOILS, CROPS

The gravity portion, or the Yuma project proper, comprises about 64,000 acres of bottom lands, some 14,000 of which lie on the California side and the remainder on the Arizona side of the river. About 8,000 acres of the California tract have been allotted to the Yuma Indians. The lands of both valley and mesa are generally flat, but require leveling before water may be applied to them. The soils of the valley or bottom lands are alluvial in character and very fertile. These range from a light, sandy loam to adobe, with varying

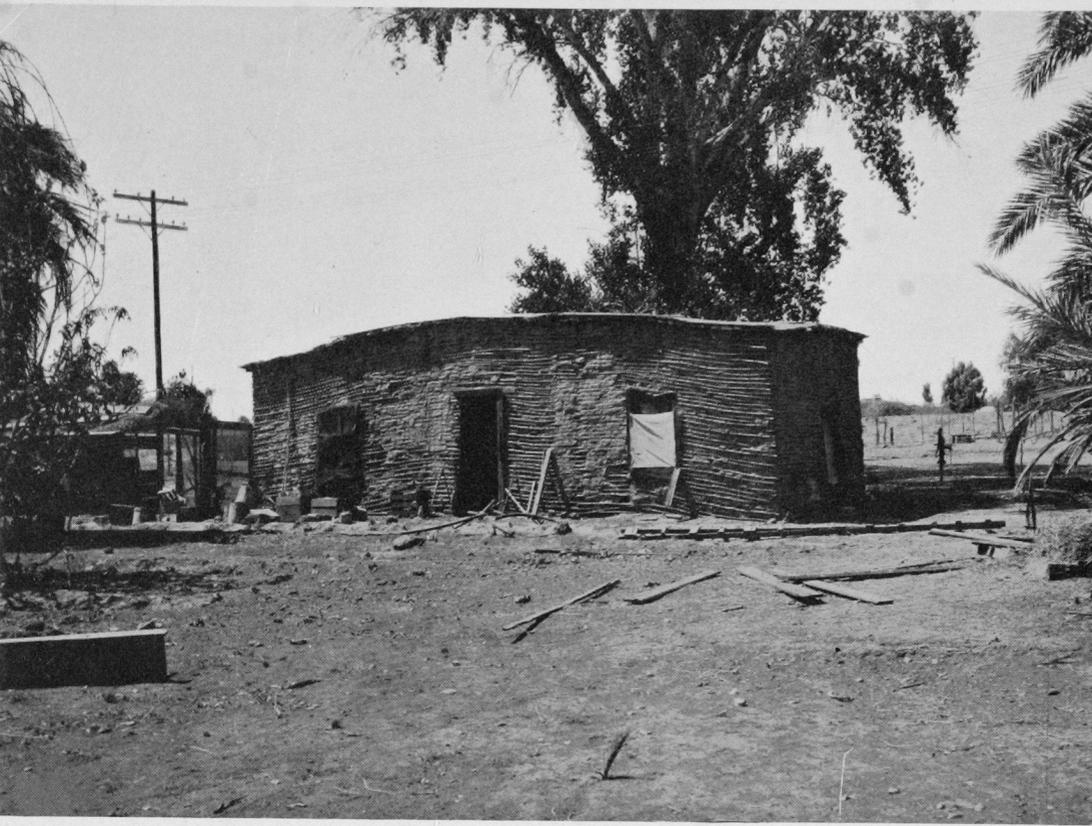
Young Date Grove in Yuma Valley.



mixtures of both, while the mesa lands are sandy and require green or stable manure to build up their fertility.

The Mesa lands include 45,000 acres in Arizona. Works have been constructed for the irrigation of 3,800 acres in unit "B", water being supplied by pumping from the project gravity system. The developed area in this division has practically all been planted to citrus (mostly grapefruit), for which it is very well adapted, as the climatic conditions of least rainfall, lowest relative humidity, greatest percentage of sunshine, and no damaging frosts combine to make possible the production of fruit of fine quality, high color, and with an early ripening period.

On the valley lands, comprising about 50,000 acres in Arizona, for which water is supplied by gravity from the Colorado River diverted at Laguna Dam, the all-year growing season also favors the growth of a large variety of crops, which include cotton, alfalfa, alfalfa seed, hegari, winter vegetables, lettuce, melons, and small grains. Cotton, alfalfa, and alfalfa seed are the major crops. Cotton yields an average of one and more bales per acre, alfalfa 4 to 7 tons per acre, and alfalfa seed 200 to 700 pounds per acre, depending on the soil and methods of farming. Most alfalfa growers devote the summer months to raising an alfalfa seed crop, under which system of farming two hay crops are also harvested. Where no seed crop is raised, an average of five cuttings of hay is produced. Climatic and soil conditions are especially favorable to the growing of winter vegetables, lettuce, and melons. The areas devoted to these crops have increased during the



A Home of Stick and Mud Construction, Built about 1880, and Probably One of the First Buildings Erected in the Upper Part of the Valley Division.

past few years. It has been demonstrated beyond the experimental stage that the soil and climate are well adapted to the growing of paper-shell pecans, and the successful development of this crop indicates that it will eventually become one of the major crops on the project. Some dates are successfully raised on project lands located in both California and Arizona.

Dairying, which is a very important branch of irrigation farming, has not kept pace with other improvements on this project, and there seems to be a splendid opportunity at Yuma for those desiring to follow this industry. Sheep and



A Farm Home, Modern in Every Respect.

cattle feeding during the winter months has been found profitable, and the project's proximity to the Pacific coast cities insures a favorable market for all stock.

Cotton gins and vegetable and fruit packing houses are located on the project at convenient points. Cooperative associations handle the ginning of a major portion of the cotton crop, as well as the marketing of alfalfa and alfalfa seed.

COST OF WATER RIGHT

Lands in the reservation (Indian) and Bard (white) division, which comprise about 14,000 acres on the California

side of the river, are subject to a construction charge of \$55 to \$66 per acre. This charge is fixed to return to the Government, without interest, the cost of constructing the canals and other irrigation works in 20 years. Practically all lands in this division have completed construction repayments. The annual payment at this time is 6 percent of the original charge, or \$3.30 to \$3.96 per acre. Under the several moratorium acts of Congress, water users, upon request, may have the construction charges for 1931, 1932, 1933, 1934 and/or 1935 deferred to the end of their repayment period. In addition to this construction charge, there is assessed an annual charge to cover the cost of operating and maintaining the system which charge varies from year to

Pasturing Beef Cattle on a Farm in the Valley Division.





Laguna Dam, Desilting Basin, Sluice Gates, and Yuma Canal Regulating Gates.

year depending upon the cost of labor, etc. The operation and maintenance charge is fixed at the beginning of each year and in the past several years has varied from a maximum of \$3.75 to a minimum of \$2.25 per acre. This charge permits the delivery of not to exceed 3 acre-feet of water per acre and excess water is charged for at the rate of \$1 per acre-foot when used.

Under contract dated February 5, 1931, with the Bureau the water users of the Valley division have undertaken

Right: Bougainvillea Vine (a Climbing Shrub) in Full Bloom Covering One of the Houses on the Headquarters Grounds of the Grapefruit Syndicate Property, Yuma Mesa.

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Below: Alfalfa, the Old Reliable Crop Under Irrigation.

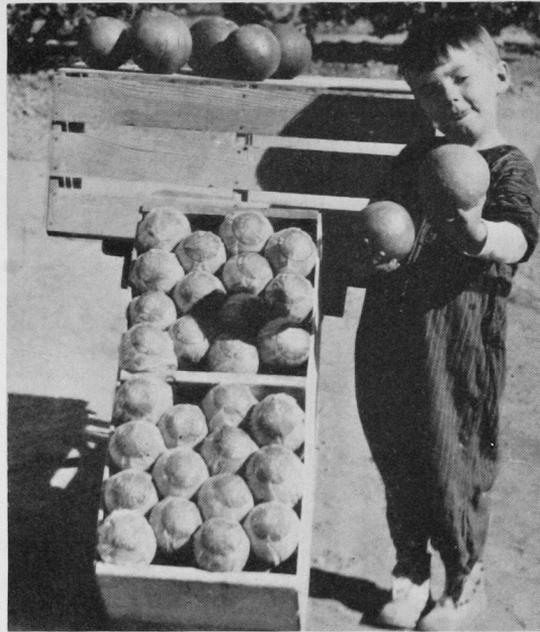
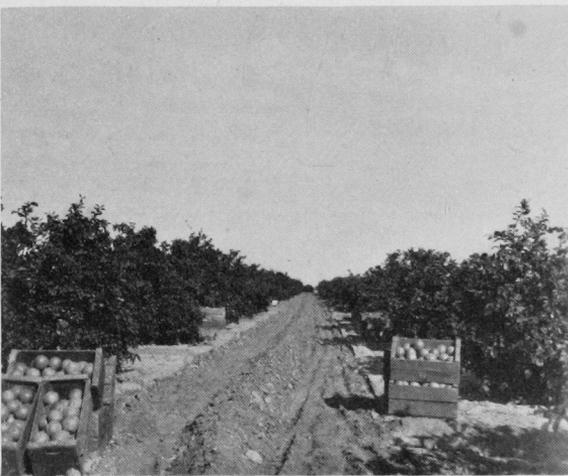
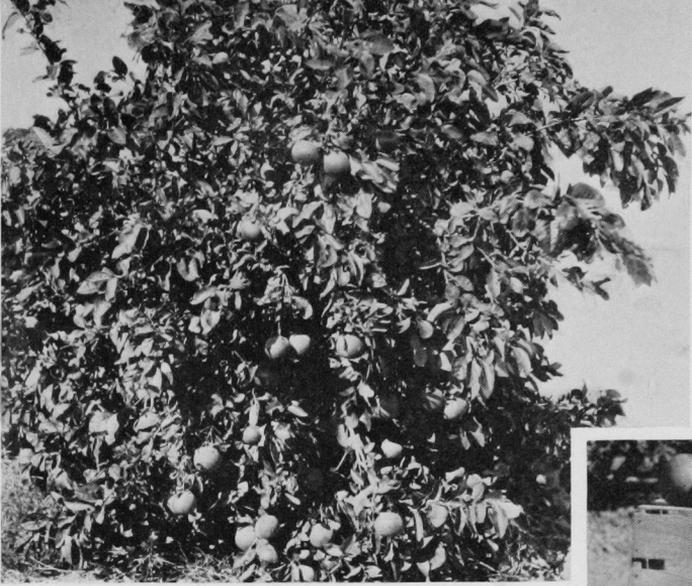




through their organization, the Yuma County Water Users' Association, the handling of the individual accounts and the collection from individual water users of all construction and operation and maintenance charges for that division. The construction charge for lands in the Valley division is \$75 to \$85 per acre and was payable under original individual contracts over a period of 20 years. At the effective date of the new contract the unpaid balance in each individual account, which, in the majority of cases, amounted to about 36 percent of the original contract, was extended for an additional 10 years without interest. The construction charges for 1931, 1932, 1933, 1934, and 1935 in this division have also been deferred under the various moratorium acts. The association fixes annually an operation and maintenance assessment sufficient to cover the total estimated cost of operating and maintaining the irrigation works of the division (together with a small charge for association office expenses) and pays to the Bureau semiannually in advance this estimated cost. These operation and maintenance assessments during recent years amounted to \$2 per acre per year.

LANDS

All the lands in the Gravity divisions of the project are in private ownership and are valued at \$150 to \$250 per acre. In some instances the cost of leveling and ditching has been as high as \$100 per acre, although the average was much less than that figure. The prices quoted above are for good land, leveled and in cultivation. Owing to



Upper left: Four-year Old Grapefruit Tree.

Upper right: Picking Grapefruit on Yuma Auxiliary Project.

Lower left: Grapefruit Harvest, Yuma Mesa.

Lower right: Grapefruit Packed for Shipment.



An Acre of Asparagus.

recent conditions, some good land has been purchased at considerably under the above values.

Of the 45,000 acres included within the Mesa division, there are at present 3,810 acres for which the Bureau has constructed all the necessary works to deliver irrigation water. Of the 3,810 acres there have been sold 5-, 10-, and 20-acre units about 2,000 acres. The remaining unsold units in respect to character of soil, location, etc., are as good as those which have been sold, and these tracts the Bureau of Reclamation is authorized to sell under the following terms and conditions: The appraised value of the land is \$32 per acre. In addition to the cost of the land, the pur-

chaser must pay to the Government the cost of the irrigation works, estimated at \$200 per acre, making a total of \$232 per acre, 10 percent of which must be paid down at the time of purchase and the balance in 9 equal, annual instalments with 6 percent interest on the deferred payments, payable annually. An annual charge in addition to the above is assessed to cover the cost of the operation and maintenance of the system in this division. This charge varies from year to year, the maximum in recent years being \$15 per acre, which entitled the landowner to 2½ acre-feet of water, with such excess water as was used over the minimum charged for at the rate of \$3.50 per acre-foot; the minimum during recent years has been \$8 and \$10 per acre for 3 acre-feet of water, with excess water at \$2 per acre-foot.

Courthouse at Yuma.



RAILROADS

The main line of the Southern Pacific railway system from New Orleans to Los Angeles and San Diego crosses the project at Yuma and gives quick service to the Pacific coast cities, the Gulf of Mexico, and eastern markets. A railroad owned and operated by the Bureau of Reclamation for the purpose of maintaining the project levee system in Arizona extends along the Colorado River from Yuma to the Mexican boundary. The Southern Pacific Co. under a contract with

Upper Right: A Field of Cotton 2½ Months Old.

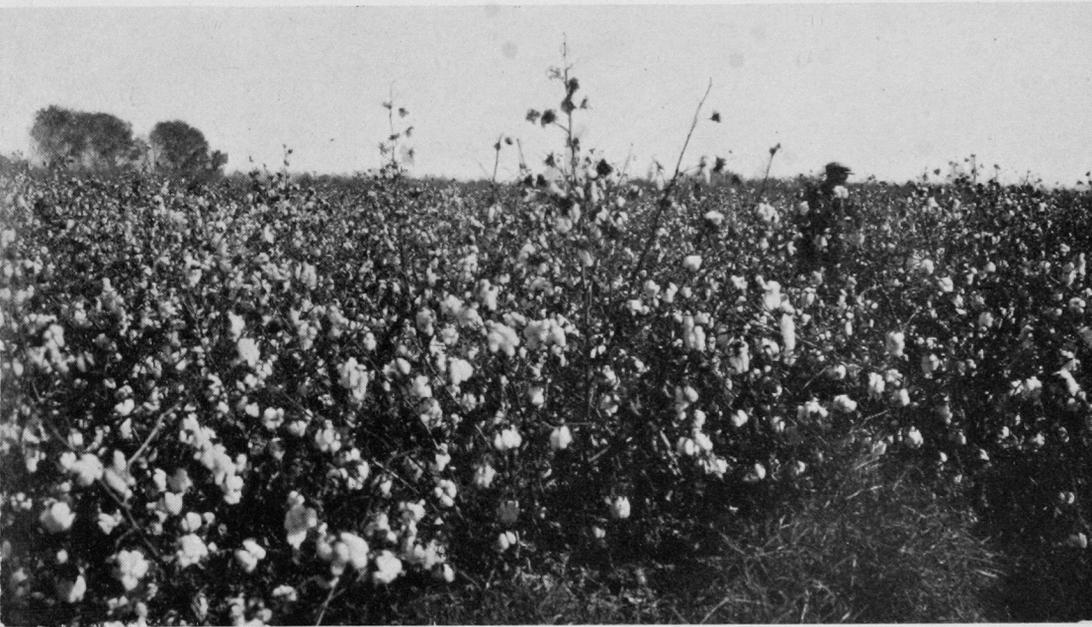
Center Right: Partly Picked Cotton Field.

Lower Right: Twenty Tons of Cotton on Way to Market.

Below: Two Polo Colts, Yuma Valley.

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Yuma Union High School, Yuma, Ariz.

the Bureau operates trains over a portion of this line when necessary for moving farm produce, principally winter vegetables.

ROADS AND HIGHWAYS

The project is traversed by some 75 miles of paved highways, included in which is the Broadway of America, a transcontinental highway, which furnishes an outlet to Pacific coast points over a continuous pavement. The valley division is provided with an exceptionally good road system, no farm being more than $1\frac{1}{2}$ miles from a paved county highway.

TOWNS

The towns of the project are Yuma, Somerton, and Gadsden in Arizona, and Bard in California. Yuma is the principal business center and has a population of approximately 5,500. The population of the other project towns and farms amounts to about 4,600.

SCHOOLS

Adequate schools are well distributed throughout the project, including a modern high school at Yuma, to which

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White Leghorn Chickens on a Yuma Homestead.



free transportation is furnished. No school has less than two teachers. Arizona schools rank with the three highest in the country.

CHURCHES, LODGES, RECREATION

Most of the principal religious denominations have organizations in Yuma and the smaller project towns. Among those represented are Baptist, Christian, Methodist, Christian Science, Catholic, Episcopal, Presbyterian, Seventh Day Adventist, Lutheran, Pentecost, Church of Christ, and Nazarene. Fraternal and civic organizations are well

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Thompson Seedless Grapes, Sweet as Sugar, Appear on the Market Two Weeks Before Any Other Grapes Grown in California. They Bring a Good Price.





A Young Fig Tree on the Yuma Mesa.

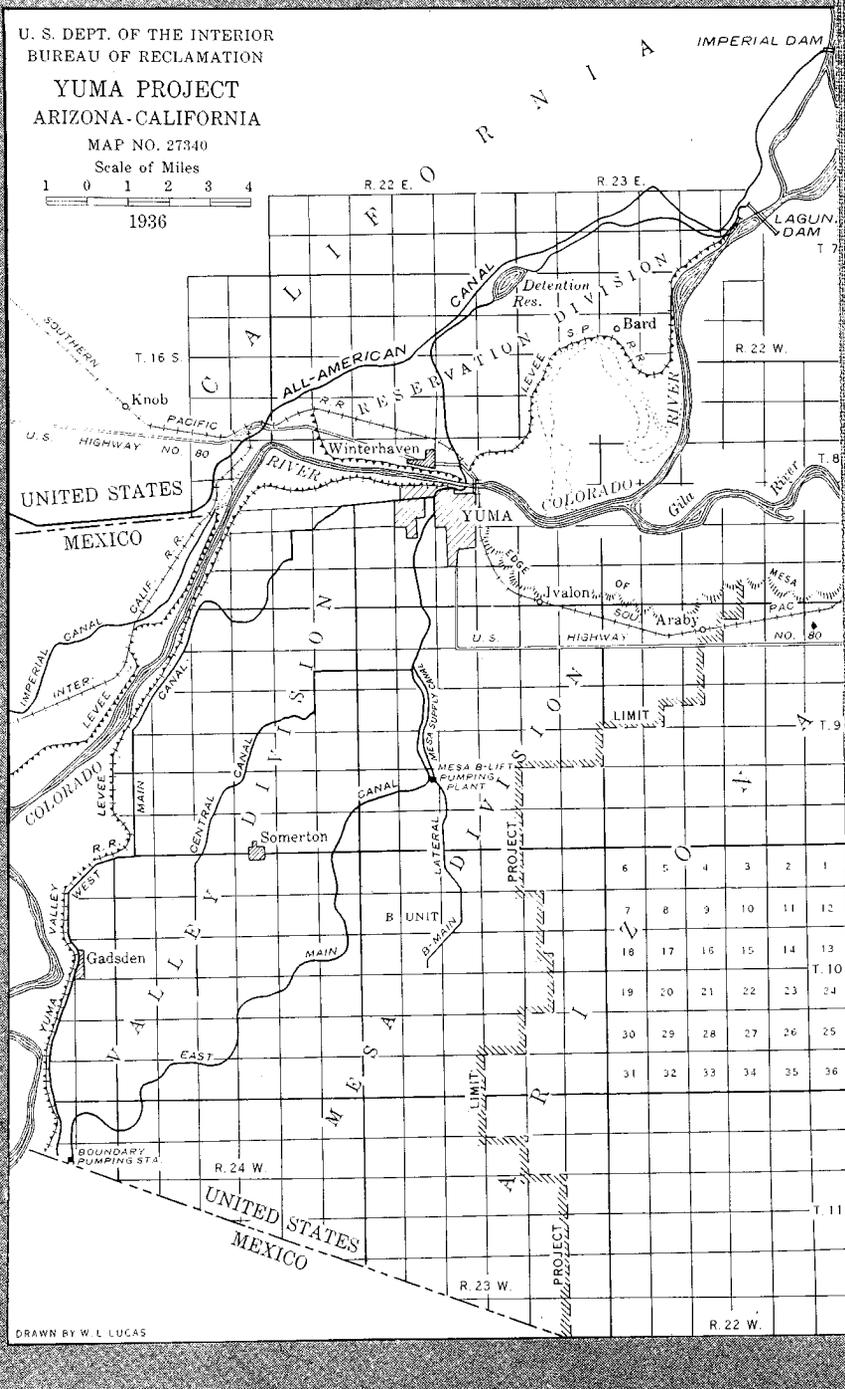
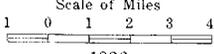
represented in Yuma, and social activities are amply provided for, there being the following: Elks, Masons, Odd Fellows, American Legion, Veterans of Foreign Wars, Knights of Columbus, Kiwanis, Twenty-Thirty, Women's Delta, and Women's Business and Professional Club, as well as a polo club, owning a 30-acre field. Wild game and birds are found in the surrounding country. During the summer months recreation is taken at the beaches along the Pacific Ocean in the vicinity of San Diego or Los Angeles and at the mountain resorts in northern Arizona.

U. S. DEPT. OF THE INTERIOR
BUREAU OF RECLAMATION

YUMA PROJECT
ARIZONA - CALIFORNIA

MAP NO. 27340

Scale of Miles



	6	5	4	3	2	1
7	8	9	10	11	12	
18	17	16	15	14	13	
19	20	21	22	23	24	
30	29	28	27	26	25	
31	32	33	34	35	36	

DRAWN BY W. L. LUCAS

R. 22 W.