

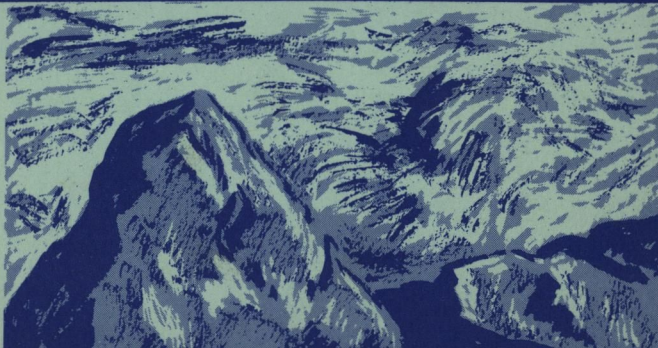
U.S. DEPARTMENT
OF THE INTERIOR

Stewart L. Udall, Secretary

BUREAU OF RECLAMATION
Floyd E. Dominy, Commissioner

1962

Reclamation





purpose

WATER TO KEEP AMERICA GROWING

The Bureau of Reclamation of the Department of the Interior is an agency for the development of water resources. Its area of responsibility covers the 19 western States, including Alaska and Hawaii.

Most of the United States west of the 97th meridian—half the Nation—annually receives less than 20 inches of precipitation, which is insufficient for normal crop production. However, the West has many rivers, fed mainly by snow from the rugged mountains of the watersheds. For well over half a century, the Bureau of Reclamation has dedicated its efforts to constructing facilities for storing the surplus waters of these rivers in times of greatest runoff for use during the dry seasons.

In carrying out its work, the Bureau builds storage and diversion dams, water distribution systems, pumping plants, hydroelectric generating plants, and other related structures on its multipurpose water development projects.

“MULTIPURPOSE” IS THE MODERN WAY

When the sources of water supply are limited and when population is increasing rapidly, every possible beneficial use must be made of the available water if life is to be sustained at a high standard. For this reason, the Bureau of Reclamation takes into consideration and builds into its water projects the multiple-use facilities necessary to provide as many of the following benefits as economics and technology will permit:

Irrigation water for farms—to produce such high-value, readily marketable, non-price-supported crops as fruits and vegetables, feed for livestock, and seeds.

Hydroelectric power—to brighten homes and spur the growth of industry, which in turn creates more jobs.

Municipal water—for domestic and industrial use.

River regulation—to reduce the danger of flooding and to alleviate silt and pollution problems.

Improved fish and wildlife habitat.

Increased recreational opportunities.

WATER STORED IS WATER GAINED

During spring thaws, when mountain snow begins to feed western rivers, formerly wasteful torrents rushing to the sea are now, in many places, controlled by Bureau of Reclamation dams. Among the giants, Hoover Dam, tamer of the erratic lower Colorado River, is the prototype of modern multipurpose water development projects. By the time the dam, between Arizona and Nevada, completed its first quarter-century of operation in 1961, it had produced 103 billion kilowatt-hours of hydroelectric energy, furnished water to produce crops valued at a total of \$2.33 billion, and served millions of people as a recreation site—as well as kept the Colorado in check.

THE GOOD LAND BLOSSOMS

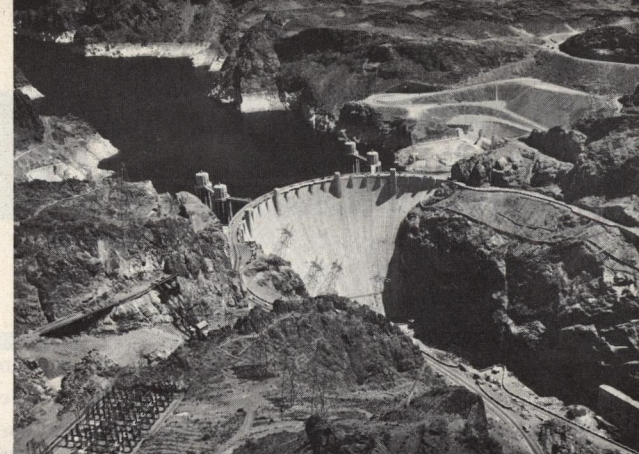
People have moved westward in ever-increasing numbers, seeking more space and new opportunities. In the past half-century, thousands of acres of desert land have been transformed into fertile farms by the application of irrigation water and human initiative. Much has been done through individual and group effort, and Bureau of Reclamation projects have played a major role. They are helping fill the current great need for municipal and industrial water and for hydroelectric power, as well as bring a supplemental water supply to land already under cultivation, but with insufficient water for maximum efficiency.

Irrigation helps provide stability without contributing significantly to the crop surplus problem. Farmers, assured of a dependable water supply, are freed of dependence on a dryfarm, one-crop economy and can produce crops and forage and feed as the market demands.

MORE POWER TO THE WEST

Dams that store water for irrigation—and, of increasing importance, for municipal and industrial use—are often also major hydroelectric power producers. For instance, the powerplant at the Bureau's Grand Coulee Dam on the Columbia River in Washington is the Western Hemisphere's largest such single facility, with a total nameplate capacity of 1,974,000 kilowatts. The concept of power production as a corollary of irrigation projects was recognized early by Congress, which, in 1906, authorized the incorporation of hydroelectric power facilities in Federal reclamation projects.

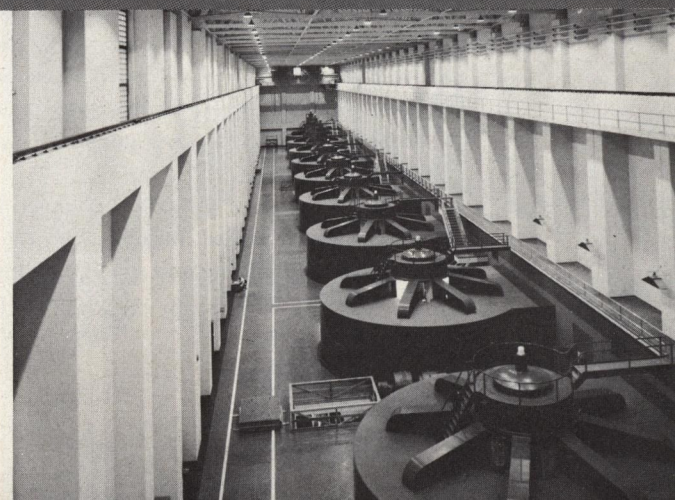
Water Storage



Irrigation Benefits



Power Production



background

BIRTH OF A WATER AGENCY

The Bureau of Reclamation—known at first as the Reclamation Service—had its inception in the Reclamation Act of 1902, which was signed into law by President Theodore Roosevelt. An ardent conservationist, this friend of the West proved to be a reliable prophet when he said:

The reclamation and settlement of the arid lands will enrich every portion of our country, just as the settlement of the Ohio and Mississippi Valleys brought prosperity to the Atlantic States. The increased demand for manufactured articles will stimulate industrial production . . . The products of irrigation will be consumed chiefly in upbuilding local centers of mining and other industries, which would otherwise not come into existence at all.

TO EQUALIZE FLOOD AND DROUGHT

Irrigation was not new to the West, having been practiced by the Mormons as early as 1847 and even before that by the Indians and mission settlements. However, as President Theodore Roosevelt pointed out, "Great storage works are necessary to equalize the flow of streams and to save floodwaters." Thus the Bureau of Reclamation was created to carry out an orderly program of construction for water storage and development.

The Salt River Project, begun in Arizona in 1903, was one of the Nation's first large water developments. Like succeeding Bureau of Reclamation projects, costs of construction allocated to irrigation purposes were charged to the water users, to be repaid to the Federal Treasury. In the case of this early project, final payment on the original contract was made to the Government in October 1955. (Costs of constructing a Reclamation project allocated to irrigation are repayable by the water users without interest. Costs allocated to municipal and industrial water and power are repayable with interest.)

In the years since the initial completion of this pioneer project, Congress has modified and extended the Reclamation Act by further legislation, adding and strengthening the multiple-use concept.

Deserted Dry Farm



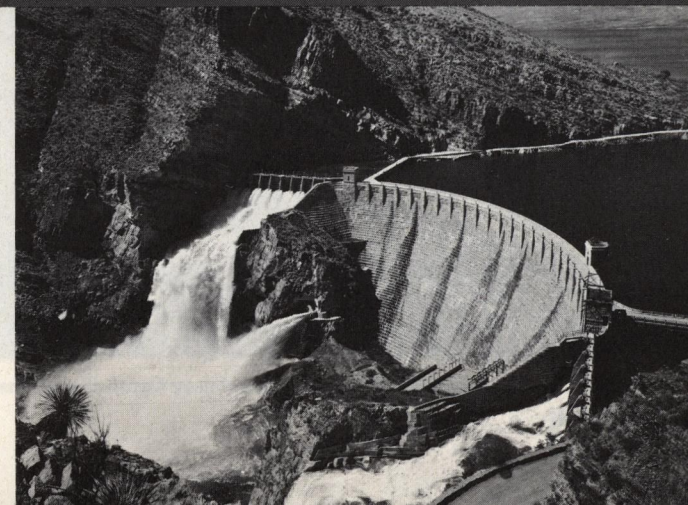
Flood Scene



Early Construction



Theodore Roosevelt Dam



accomplishments

Past accomplishments, current construction, and future plans cannot be easily compartmentalized. Reclamation is a continuing process. The need is evident in the predictions that, by the year 2000, the Nation's population will have risen to probably 350-380 million and the demand for water will have tripled over present withdrawals. Add to this the problem of feeding more people from farm acreage, which is being constantly whittled away by urbanization, and the necessity for making the land as productive as possible becomes clear.

The continuing process of Reclamation has made irrigation water, either a full or supplemental supply, available so far to more than 8 million acres of land to produce annually more than a billion dollars worth of readily marketable crops.



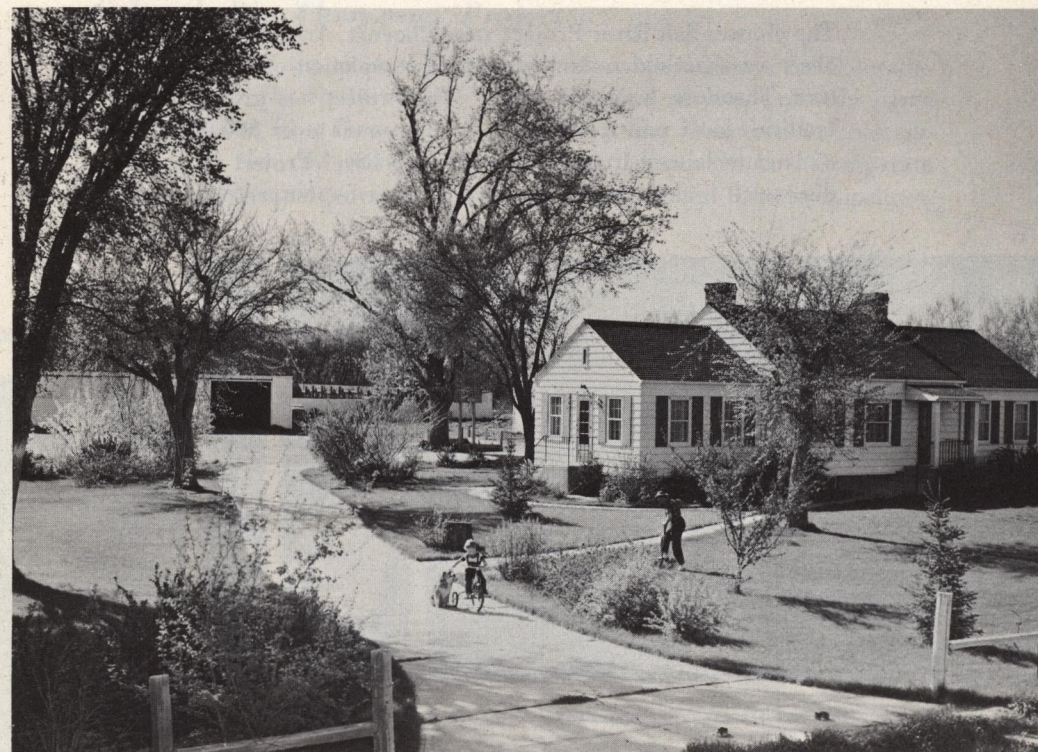
Cultivated lands below Gateway Canal, Weber Basin Project, Utah.

The Reclamation program has also been responsible for the development of more than 5 million kilowatts of installed hydroelectric generating capacity in 42 powerplants.

Storage of water for municipal use is becoming increasingly important in the West. Communities, with a population totaling about 9 million, receive such water to supplement their water supply.

Recreation has been served by the man-made lakes on Bureau of Reclamation projects, and about 25 million visitor-days of such use are recorded annually at Reclamation reservoirs.

A sampling of Bureau of Reclamation projects, scattered throughout the West, will give at least a skeleton outline of what is being accomplished:



A North Dakota farm home on the Bureau's Lower Yellowstone Project.

Columbia Basin Project

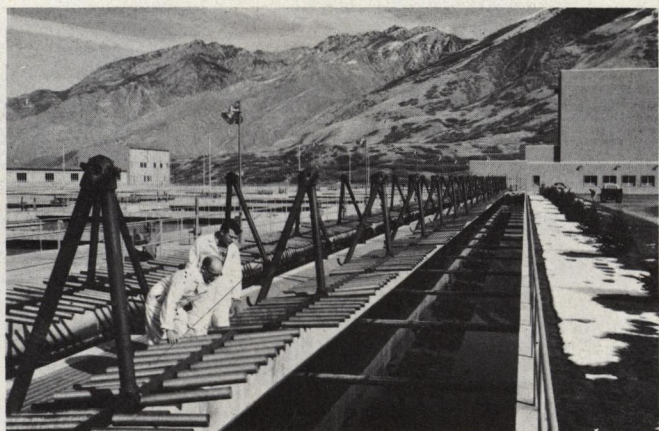
In the Pacific Northwest, the Columbia Basin Project, Washington, with Grand Coulee Dam as its keystone, is designed to serve approximately 1 million irrigable acres embraced in the Big Bend of the Columbia River. Grand Coulee Powerplant is a major energy producer on a river noted for its power potential. Among the major crops grown on Columbia Basin farms, which were once ruled by sagebrush, are hay and forage, feed grains, potatoes, onions, peas, and seeds.

Central Valley Project

Two river systems comprise the 500-mile-long Central Valley Project area in California, the Sacramento and the San Joaquin. Initial features will irrigate over 250,000 acres of new land and furnish supplemental water for about 1,400,000 acres. Of particular significance is the San Luis Unit, near Fresno, which is a co-operative Federal-State enterprise and will serve both the Federal Central Valley Project and the State's water program.

Salt River Project

The pioneer Salt River Project, near Phoenix, Ariz., in March 1961 observed the Golden Anniversary of completion of its key structure, Theodore Roosevelt Dam. The project has grown and its facilities have multiplied until it now serves over 300,000 acres of land reclaimed from the desert. Salt River Project farms produce such high-value-per-acre crops as citrus, lettuce, and celery.



Water filtration plant serving Salt Lake City and its suburbs.

Canadian River Project

Increased industrialization and urbanization have made it imperative that many communities support the development of water supplies primarily for municipal use. Such is the case with the Canadian River Project, being built by the Bureau of Reclamation to serve 11 northwest Texas cities. The major facilities of this project are Sanford Dam on the Canadian River and an aqueduct system including about 325 miles of concrete pipeline.

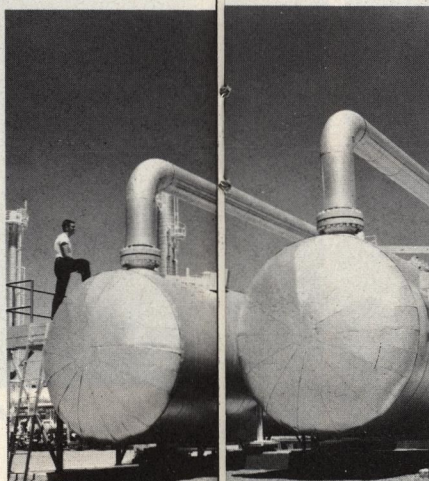
Missouri River Basin Project

Initially authorized by the Flood Control Act of 1944, this vast project covers all or part of 10 States—Colorado, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, North Dakota, South Dakota, and Wyoming. Among the beneficial uses are irrigation water for over 3 million acres of land not now irrigated, supplemental water for nearly 700,000 acres of irrigated land, generation of power, municipal and industrial water supplies, stream-pollution abatement, sediment control, preservation of fish and wildlife, and creation of recreational opportunities.

Colorado-Big Thompson Project

One of the most complex Reclamation operations is the Colorado-Big Thompson Project, which transfers surplus Colorado River water from the western slope of the Rocky Mountains in Colorado to the arid eastern slope. Among the more than 100 separate engineering features (tunnels, dams, dikes, canals, pipelines,

Power and water for industry.



Typical recreation scene at Bureau-built Pineview Reservoir.



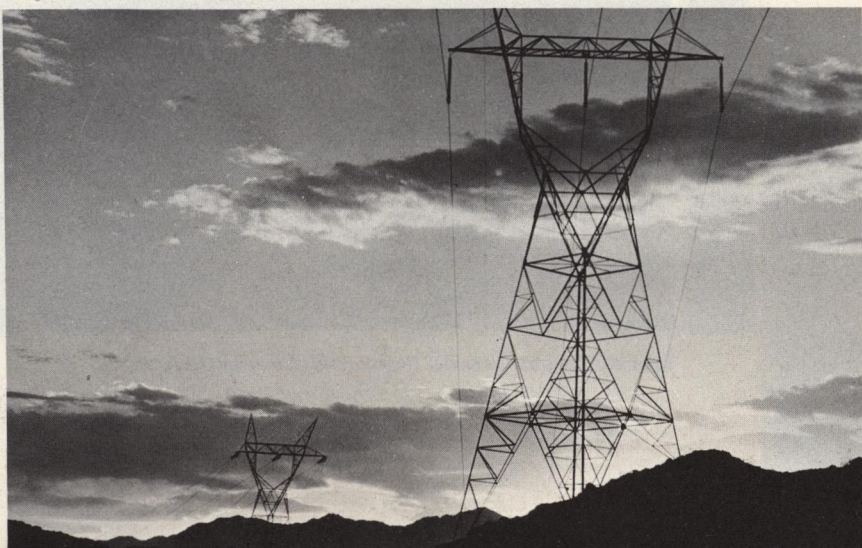
Lettuce harvest near Yuma.

pumping plants, hydroelectric powerplants, substations, transmission lines) is the Alva B. Adams Tunnel, which carries the water 13.1 miles through the Continental Divide. Primary purpose of the project is to provide a supplemental water supply to about 720,000 irrigated acres in northeastern Colorado. Power and municipal water are other major benefits. Specialty crop yields in the area have grossed as high as \$1,350 per acre.

Colorado River Storage Project

Construction is well along on the four major storage units and on several of the participating irrigation projects of the Colorado River Storage Project, which extends into five States. The storage units are Glen Canyon Dam on the Colorado River in Arizona and Utah; Navajo on the San Juan in New Mexico; Flaming Gorge on the Green in Utah and Wyoming; and Curecanti, a three-dam unit in Colorado. Combined reservoir capacity of the four units will be about 35 million acre-feet. Powerplants at three units will have a total installed capacity of nearly 1.2 million kilowatts.

Transmission lines from the Boulder Canyon Project serve distant areas.



Under Construction

Storage Dams. Work is in varying stages on 19 storage dams, which will create reservoirs having a total capacity of 39,180,570 acre-feet of water. These reservoirs will provide water for irrigation, municipal and industrial purposes, and other beneficial uses.

Irrigation Systems. Work is going forward on construction or rehabilitation of 14 irrigation distribution systems on 9 Reclamation projects and Missouri River Basin units. This work includes building of new canals, pipelines, laterals and drains, and enlargement and extension or rehabilitation of existing systems.

Pumping Plants. New construction is adding 15 pumping plants.

Powerplants. Nine hydroelectric powerplants are being added on Reclamation water storage projects. These will have a total installed generating capacity of 1,605,850 kilowatts.

Transmission Lines. The Bureau has 10,704 circuit miles of transmission lines in operation and has a continuing construction program which is bringing additional lines into operation.

Research. No water development program would be complete without the scientific research being carried on by the Bureau of Reclamation—to find economical ways to reduce evaporation of water from reservoirs, to seal irrigation canals against seepage, to curtail the growth of water-wasting vegetation, and to find less expensive and more effective construction materials.

Yellowtail Unit, Montana.



Glen Canyon Unit, Arizona-Utah.



future needs

A BALANCED LEDGER

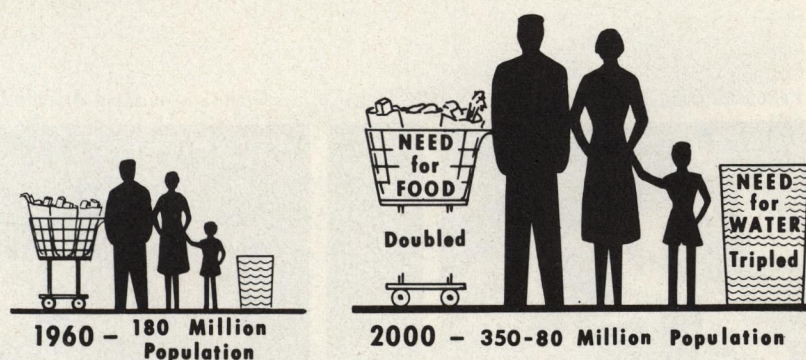
The future is a ledger which must be kept in balance. On one side is mankind's expanding technological ability to transform the raw material of nature into an abundant standard of living. On the other side is the phenomenal population increase which has followed the technological revolution and threatens to outdistance it.

Since water is the basis of all life—since it literally becomes food, clothing and shelter—singly it is the most important natural resource we have.

While the Nation is increasing its population to a projected 350–380 million by the year 2000 (with a tripled demand for water and a doubled food requirement), growth of the 19 western States will be even more spectacular, going from the present 45 million to 111 million persons in the year 2000.

A LOOK IN THE CRYSTAL BALL

To help sustain this population and to produce food and fiber to export to other areas of the Nation and the world, 17 million more acres in the West are expected to receive full or supplemental irrigation service by 2000, including Federal and nonfederal development. Future programs for the development of hydroelectric power in the rivers of the West would provide approximately 6,280,000 kilowatts by the end of the century, exclusive of developments in Alaska. Greater attention will also be given to municipal water, recreational use of water development projects, fish and wildlife benefits, and stream regulation.



Further information about the Bureau of Reclamation or about individual projects may be obtained by writing to one of the following regional offices:

Regional Director, Bureau of Reclamation, P.O. Box 937, Boise, Idaho.

Regional Director, Bureau of Reclamation, P.O. Box 2511, Sacramento 11, Calif.

Regional Director, Bureau of Reclamation, P.O. Box 427, Boulder City, Nev.

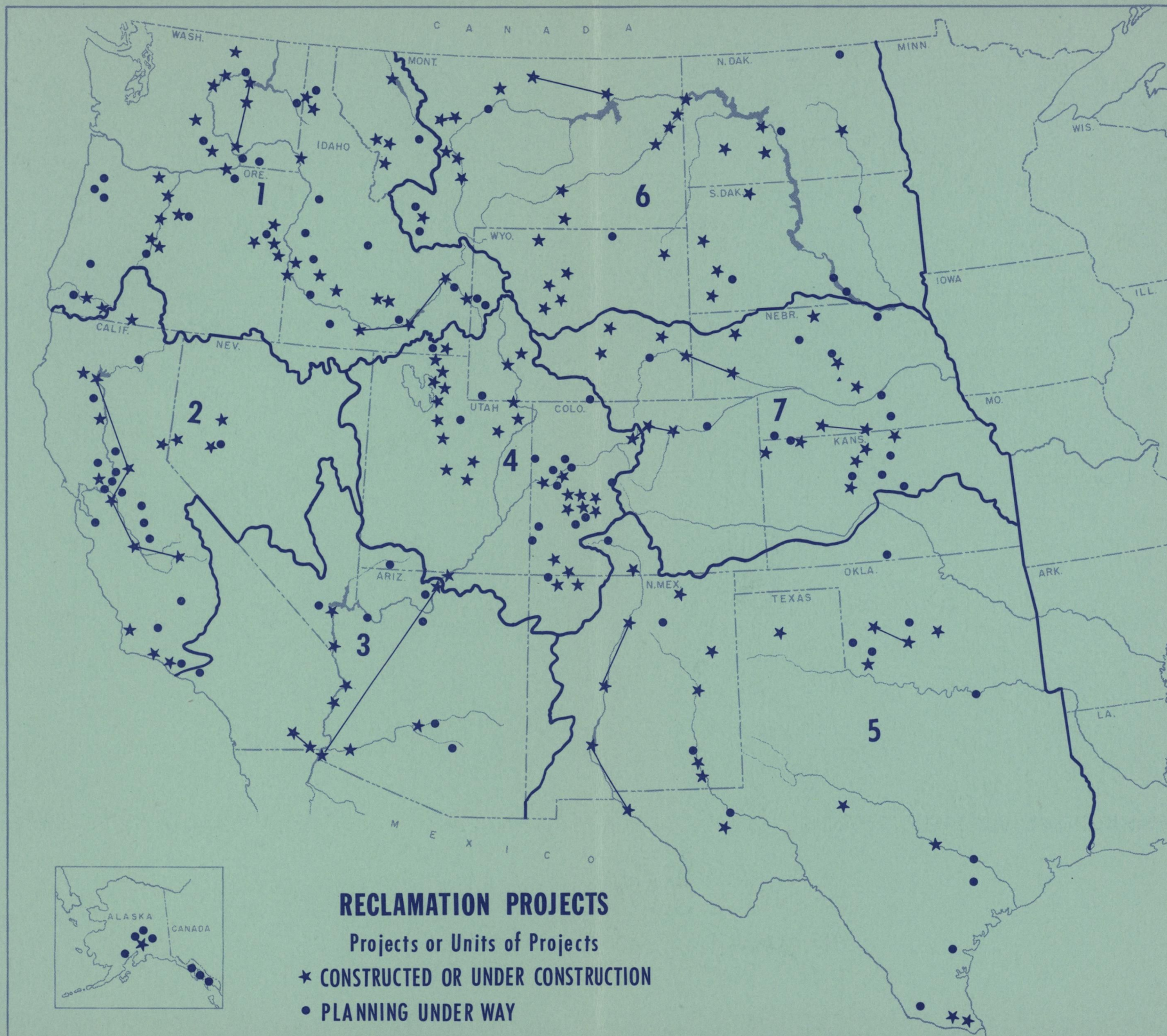
Regional Director, Bureau of Reclamation, P.O. Box 360, Salt Lake City 10, Utah.

Regional Director, Bureau of Reclamation, P.O. Box 1609, Amarillo, Tex.

Regional Director, Bureau of Reclamation, P.O. Box 2553, Billings, Mont.

Regional Director, Bureau of Reclamation, Bldg. 46, Denver Federal Center, Denver 25, Colo.

Bureau of Reclamation motion pictures are available for loan to schools and organizations interested in conservation. A free booklet describing these motion pictures, "See the West Reclaimed," is available from the above offices, from: U.S. Department of the Interior, Bureau of Reclamation (Att. 915), Washington 25, D.C., or the Asst. Commissioner and Chief Engineer, Bureau of Reclamation (Att. 841), Bldg. 53, Denver Federal Center, Denver 25, Colo.



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In its assigned function as the Nation's principal natural resource agency, the Department of the Interior bears a special obligation to assure that our expendable resources are conserved, that renewable resources are managed to produce optimum yields, and that all resources contribute their full measure to the progress, prosperity, and security of America, now and in the future.

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