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Salt River Centennial

by Tammy LeRoy

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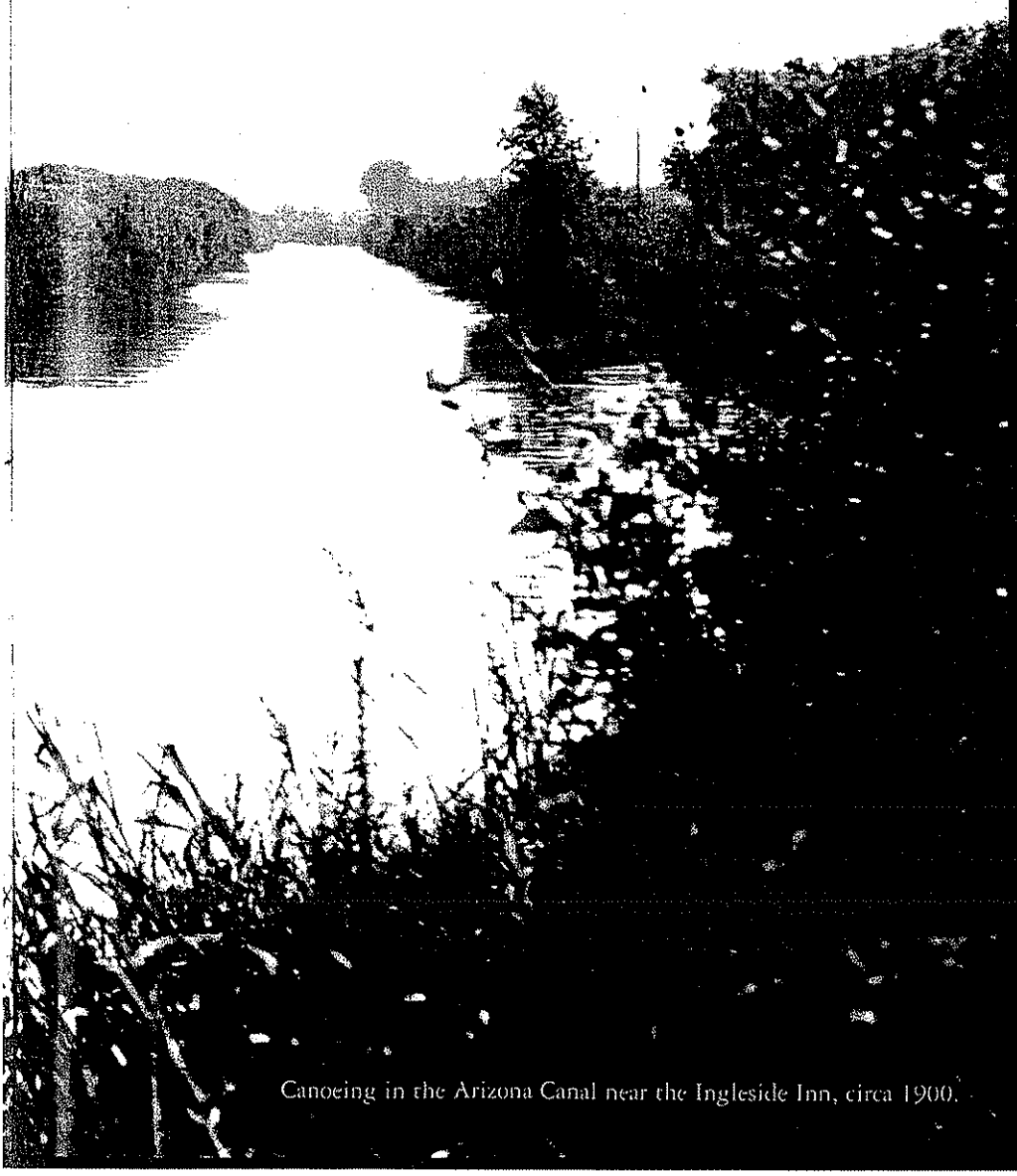
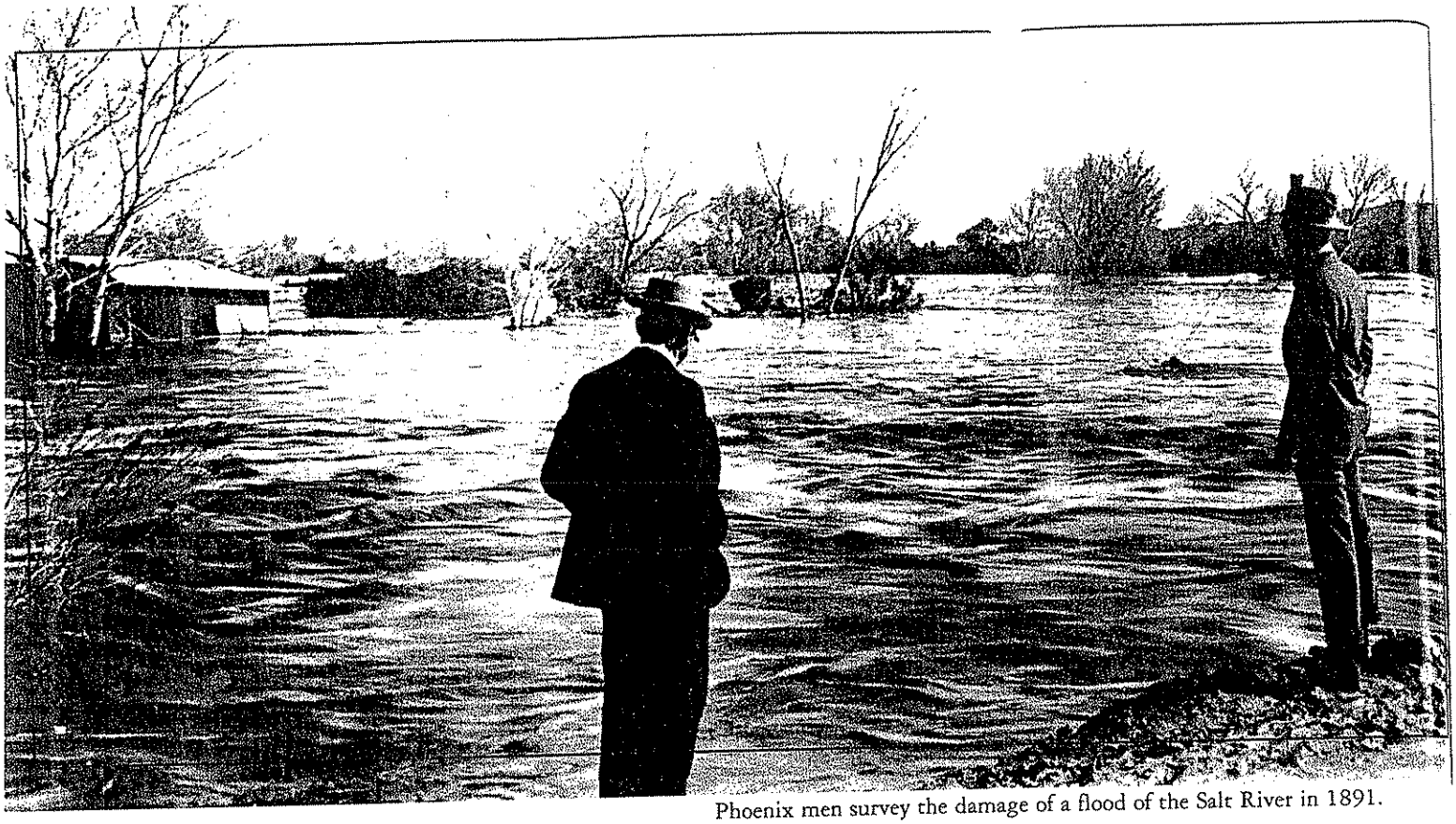
The river itself has been around for thousands of years, but in February 1903, a group of local landowners took control of the unpredictable waterway, building a series of dams and canals, and creating what came to be known as the Salt River Project. This is the story of SRP.



Canoeing in the Arizona Canal near the Ingleside Inn, circa 1900.



Phoenix men survey the damage of a flood of the Salt River in 1891.

ON the afternoon of March 18, 1911, more than a thousand Arizonans gathered 60 miles east of Phoenix at the site of a newly completed dam in the Tonto Basin. They cheered wildly as a car rounded the curve and former President Theodore Roosevelt stepped out.

At the dedication ceremony that named the dam in his honor, Roosevelt thanked the people of Arizona and lauded the unprecedented engineering feat. Then, at 5:48 p.m., he pressed a button that unleashed a flow of water from the reservoir. The *Arizona Republican* eloquently described the event in the next day's paper: "A mighty roar of water rushed through the canyon, and the dedication of the greatest storage dam and reservoir on earth was an accomplished fact."

For Valley residents, the event was the culmination of years of work and planning. The temperamental Salt River had vexed farmers with alternating floods and droughts. In February 1903, a group of local landowners hoped to turn the tide by forming the Salt River Valley Water Users' Association. They pledged more than 200,000 acres of their own land as collateral for a government loan to build the massive dam, which would control the river's erratic flow, generate electric power and provide a water reserve. The plan was called the Salt River Project.

SRP, now celebrating its 100th anniversary, has grown to become the nation's third largest public power utility, providing electricity to more than 780,000 customers throughout a 2,900-square-mile service territory in Central Arizona. It also administers water rights in a 240,000-acre area, and operates a system of dams and canals. Employing nearly 4,700 people, the utility generates annual revenues of $1.2 billion.

It's hard to overstate the importance of the Salt River Project on the growth of the Valley. As the primary source of surface water, civilization in the Valley has depended on the Salt River for thousands of years.

The first people to manage its flow were the ancient Hohokam. The Hohokam were skilled farmers and engineers who settled in Arizona around 300 B.C., and over the years they engineered a complex, gravity-based canal system that stretched from the Tucson Basin to present-day Flagstaff.

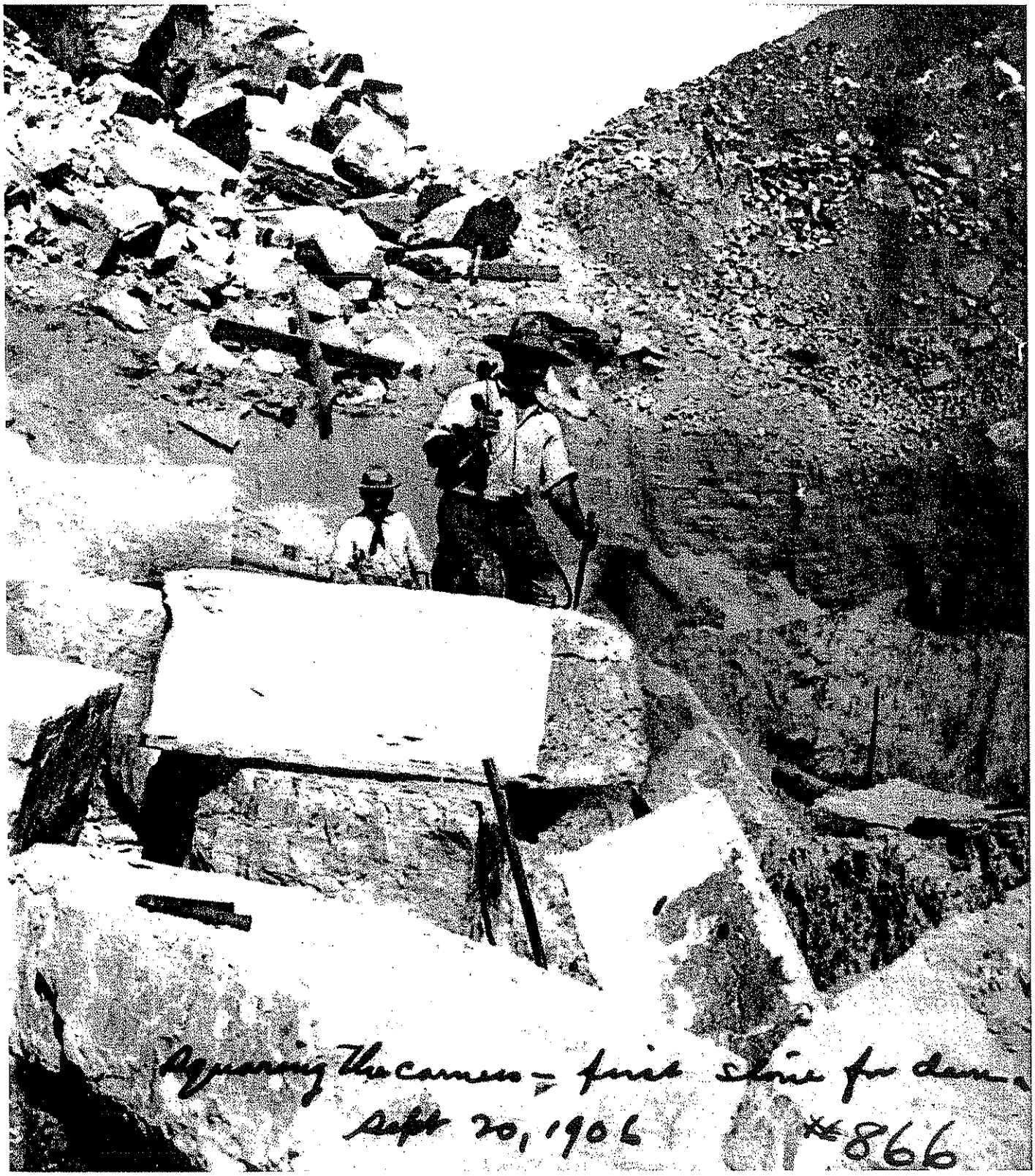
While our European ancestors were slaving under a feudal system and enduring attacks from marauding Huns, indigenous Arizonans were living in orderly towns and enjoying a remarkable degree of democratic freedom.

The Hohokam mysteriously abandoned their fields and villages around 1450 A.D. But their descendants, Arizona's Piman-speaking tribes, extended the impressive water delivery system with reservoirs, dams and more than 200 miles of irrigation ditches.

Fifteen hundred years later, a scandalous drifter named Jack Swilling resurrected the ancient Hohokam canals, and persuaded a few others to join him in an agricultural venture called the Swilling Irrigation Canal Company. This first canal, built in 1868 and eventually known as Swilling's Ditch, was located near 40th Street and Van Buren.

By the late-1870s, Swilling had left Phoenix — he eventually died in a Yuma jail — but in the Valley, a growing agricultural community added miles of irrigation canals and planted thousands of additional acres.

The 42-mile-long Arizona Canal was constructed between 1883 and 1885 to irrigate the northern portion of the Valley, and five more miles were added in 1894. Properties that once had occupied



September 20, 1906. Laborers square the corners on the first stone laid at Roosevelt Dam.

parched desert could then plant lush gardens, making it possible for resorts like the Arizona Biltmore and the Ingleside Inn to locate near the canal and prosper.

Even so, residents were subject to the vagaries of the river. An 1884 flood wreaked havoc during the construction of the Arizona Canal. Another flood wiped out a part of the canal the following year, and in 1891, another disastrous flood hit the Valley. In contrast, the years from 1897 to 1904 brought devastating drought. To the Valley's residents, the Salt's irascibility posed an economic threat.

The Salt's flow varied more than any other river in the country, according to SRP historian Ken Evans: "It could be a rushing river the size of the Colorado, and in the same year, it could literally disappear, leaving only a dry river bed."

Taming the river would be a major undertaking. As a territory, Arizona could not assume the debt necessary to build an effective dam, and not enough local capital was available. Ultimately, the search for funding led prominent Phoenix residents Dwight B. Heard and Benjamin Fowler to Washington. They and other Westerners successfully lobbied Congress for federally funded water reclamation projects that would allow local organizations to repay the government over time.

President Roosevelt signed the National Reclamation Act in 1902, and Valley citizens organized to take advantage of the new legislation. To obtain the loan to build a huge dam in the Tonto Basin, which surveys had favored as the best site, settlers used their own land as collateral. Local landowners formed the Salt River Valley Water Users' Association, with ownership of shares tied to the amount of acreage contributed, using a "one acre, one vote" model.

As many local boosters had hoped, Arizona was the first state to benefit from the legislation. The result was the construction of the Theodore Roosevelt Dam, a superb technological feat that formed a lake 30 miles long and four miles wide. Construction of the dam began in 1904 and was completed in 1911, at a final cost of $10.3 million. The engineers of the U.S. Reclamation Service had no precedent for such a large-scale irrigation project, so each aspect was somewhat experimental.

The original 280-foot-tall structure was built from block and cement, hewn from nearby hillsides. Hundreds of laborers and their families arrived in the area, and the laborers' camp became a boomtown overnight. Representing several ethnic groups, the workers formed a unique, multicultural settlement. Apaches built roads, Hispanics maintained supply routes and African-Americans worked in the quarries. Italian stonemasons, Chinese cooks, and laborers of German and Irish descent joined the ranks as well. A small hospital was

U.S. Reclamation Service crews enlarge the Arizona Canal in June 190

built, and a jail was erected, mainly to lock up those who violated the anti-liquor laws of the Reclamation Service.

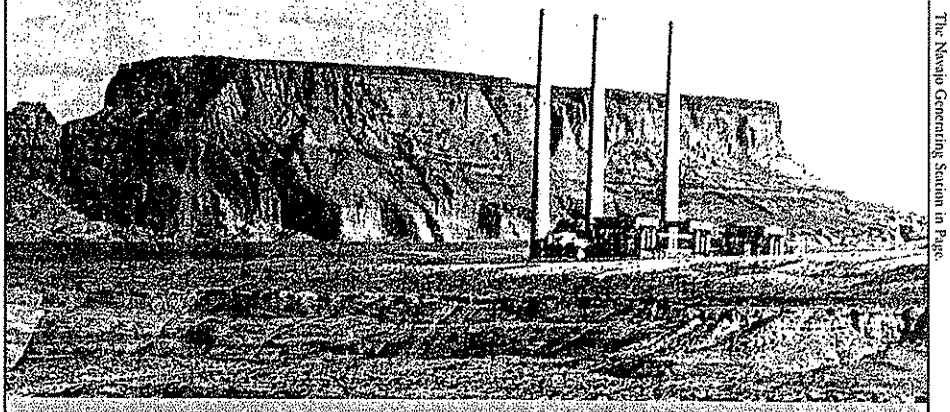
The Roosevelt settlement was strictly segregated along ethnic lines. Many of the families resided in tents, while Apache laborers lived in wickiups. Laborers worked under hazardous conditions — at least a dozen men died in the construction of the dam, and others, including women and children, perished from the harsh conditions. In July 1904, typhoid swept the camp, and in March 1905, a worker fell 300 feet to his death. The next day, a cable on a suspension bridge snapped, dropping four men into the swift current below. Three were rescued, but the fourth man was drowned.

When the dam was completed in 1911, most of the workers left as quickly as they'd appeared. In 1917, the Association took over operation of the dam and canal structures, although the federal government retained ownership. Rights to the water stored and delivered by the system, as well as full responsibility for the Salt River Project, belonged to the landowner-shareholders of the Association.

In the 1920s the Association constructed three more hydropower dams below the Roosevelt — Mormon Flat, Horse Mesa and Stewart Mountain. Together, the dams allowed for 53,000 kilowatts of additional generating capacity. As a result, the rural areas of the Salt River Valley had electricity nearly 10 years before New Deal legislation brought electric power to most of rural America. In the 1930s, SRP generated more hydroelectric power than all other government reclamation projects combined.

When the Association had difficulty making its federal debt payments during the Depression, the Arizona Legislature allowed the formation of an agricultural improvement district as a unit of government that could be financed with tax-free bonds.

The Salt River Project Agricultural Improvement and Power District, a second entity of SRP, was formed in 1936 as a means of refinancing the Association's debt at a lower cost. Today, the Association continues to manage water, while the District sells power. Power sales have always subsidized water delivery, and have allowed the company to keep water costs low, says SRP spokesperson Scott Harelson.



The Navajo Generating Station in Page.

Water Fights & Power Struggles

SRP hasn't become the nation's third largest utility without stepping on some toes, and the sore feet most often have belonged to Indian communities and environmental groups. SRP spent nearly 30 years and millions of dollars in legal fees battling the water rights settlements for Arizona Indian tribes. In September, Senator Jon Kyl introduced an agreement that would end decades of litigation between some 35 interested parties, of which SRP has been a major player. The bill, expected to pass this year, would settle water rights claims on nearly 500 billion gallons of Arizona water, dividing it among Indian communities, farmers and municipalities in Central Arizona.

SRP also has long been enmeshed in environmental issues in the Four Corners region. The company operates the Navajo Generating Station, a coal-fired plant on Navajo and Hopi lands near Black Mesa. The generation of power using coal combustion, which emits sulfur dioxide, nitrogen oxides and particulates, has had a significant effect on air quality in the Grand Canyon region. Over the years, environmental groups have won lawsuits that have forced SRP to install anti-pollution devices to clean up the plant.

The Navajo Scrubber Project was part of a negotiated settlement between SRP, the state of Arizona, the Grand Canyon Trust and the U.S. Environmental Protection Agency. Under the settlement, SRP agreed to remove approximately 90 percent of the sulfur dioxide produced by coal combustion at the Navajo plant.

In an unprecedented coalition, Indian tribes in Northern Arizona and New Mexico have joined with the Sierra Club and other environmental groups to halt SRP's plan to build another coal-fired station in northwestern New Mexico near Fence Lake. According to coalition spokespersons, operating the coal mine that would fuel the plant would destroy sacred Native American sites like Zuni Salt Lake. The lake is critical to the ceremonial practices of the Navajo, Hopi, Laguna, Acoma, Apache and Zuni tribes. The concern is that groundwater pumped from the mine would destroy the delicate balance of water and salt found in this rare, high-desert lake.

The coalition has launched an offensive against SRP with a billboard campaign asserting that SRP targets sacred sites. Andrew Besser, who heads the Sierra Club's Environmental Justice Program based in Flagstaff, says that although SRP has experienced some spotty resistance in the past, it has never faced a multicultural coalition of this scope. The group wants SRP to abandon the Fence Lake project and use its resources to develop environmentally friendly methods of producing power. "SRP's legacy can improve by committing to wind and solar power, rather than sacrificing places like Zuni Lake for dirty coal," Besser says.

SRP spokesperson Scott Harelson says the company is taking steps to create more environmentally friendly methods of power generation, specifically a $29 million investment in renewable energy, including a groundbreaking landfill facility that captures methane gas from decomposing trash and converts it into energy.

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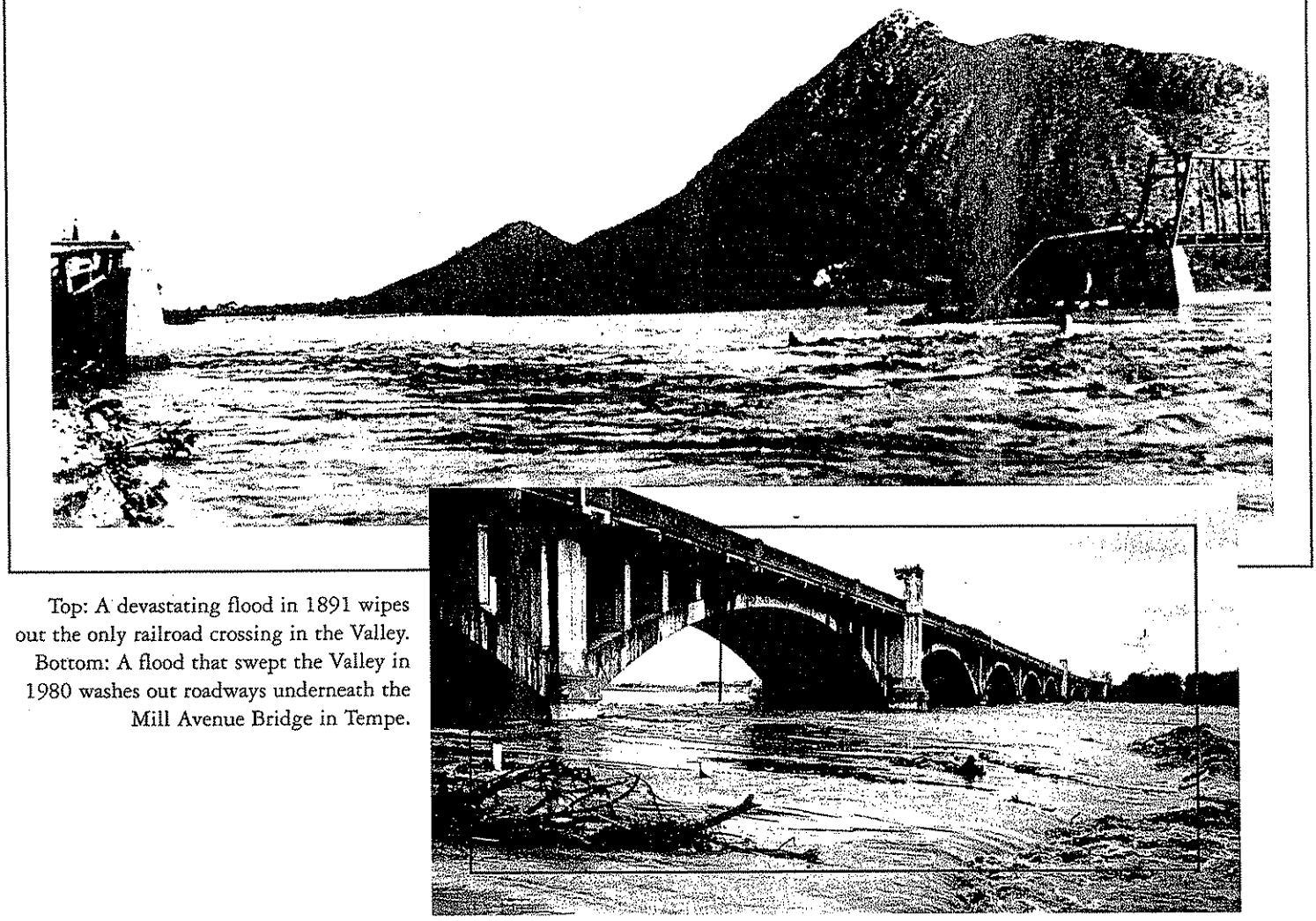

Top: A devastating flood in 1891 wipes out the only railroad crossing in the Valley. Bottom: A flood that swept the Valley in 1980 washes out roadways underneath the Mill Avenue Bridge in Tempe.

In addition, SRP lobbied aggressively for the Central Arizona Project — a 336-mile canal system designed to carry Arizona's share of Colorado River water from the California border to Phoenix and Tucson. The canal was completed in the mid-'80s, and provides Arizona with water won in a heated battle that began in 1922 and continues today.

CAP water is stored through an innovative percolation process at the Granite Reef Underground Storage Project. SRP operates the project, located on the Salt River Pima-Maricopa Indian Community near the Gilbert Road crossing of the Salt River. It includes a system of delivery channels and four large, earthen basins where surface water is recharged.

As the Valley's need for water continued to grow, so did its power needs. By the 1970s, SRP was a leading partner in several regional coal-fired power plants. It built and operated the Navajo Generating Station in Page, and built another coal-fired plant in St. Johns. The company also secured a 17 percent share of the Palo Verde Nuclear Generating Station, which is operated by Arizona Public Service (APS). SRP also holds interests in a number of other coal-fired stations, as well as operating several power plants of its own, including hydroelectric, coal-fired and natural gas facilities.

Although sophisticated solutions for controlling the Salt River had been in place for decades, in the late-1970s, the unruly stream challenged Valley residents once again.

Authorities grew concerned when unprecedented amounts of snow and rain gorged the Central Arizona watershed — studies showed that if the state were hit in rapid succession by a series of three, progressively heavier storms, catastrophe could follow. After SRP worked for two years to establish a joint emergency response team with the city of Phoenix, it looked as though the unthinkable would become reality.

On Valentine's Day 1980, a Thursday, a storm hit Central Arizona, dumping nearly 10 inches of rain on the mountain watersheds of the Salt and Verde rivers. A second storm was expected the following Saturday morning, and a third was expected as early as the next Wednesday. Previous rains had already filled the reservoirs behind the Salt River to capacity.

The threat of flooding forced crews at Roosevelt to move out of the powerhouse and into an emergency post at the top of the dam. Workers spent the night inside the shaking structure, listening to the roar of the water as it was released through the spillways at about 180,000 cubic feet per second, the largest controlled flow ever to course the river.

The dam was only inches from overflowing. If it had, it would have created a

Camelback Mountain, circa 1925

waterfall of 284 feet — more than two times that of Niagara Falls — and within hours, the river would have flooded everything in the Valley a mile north and south of the usually dry Salt River bed. It was to the point where Arizona Governor Bruce Babbitt prepared to order the evacuation of thousands of residents and businesses.

As it turned out, the second and third storms didn't have the expected impact. The Roosevelt dam didn't breach, but the Phoenix metropolitan area suffered more than $70 million in damages to roads, bridges and other structures, and SRP facilities sustained $6 million in damage. "It cut the Valley in half," Ken Evans says. "The Mill Avenue Bridge was the only way to get from one side of the Valley to the other."

The brush with disaster convinced SRP that Roosevelt and other dams on the Salt and Verde rivers needed upgrading. Once again, SRP turned to Washington for federal aid. After lobbying for the passage of the National Safety of Dams Act, the government funded more than $400 million in improvements to Central Arizona dams. In 1996, modifications raised Roosevelt Dam by 70 feet, and expanded the lake's capacity by 20 percent.

The Salt River Project was born when one of Central Arizona's worst droughts called for bold action. Today, SRP is still facing the challenges of supplying water to an arid environment — for the past seven years, Arizona has faced the worst drought on record.

SRP's Scott Harelson says the drought is serious, but adds that Valley residents probably won't feel the impact because of SRP's planning. "That's why we were created," he says. "It's why we exist. That's what we've been doing for the last 100 years."

Centennial Celebrations

Events celebrating SRP's centennial include "SRP: The Power of Water" at the Phoenix Museum of History, which runs through December. This month, SRP will dedicate the Arizona Falls Project at 56th Street and Indian School Road, the centerpiece of a new multi-use park area. SRP will culminate its centennial with a luncheon on February 5 at the Arizona Biltmore, and a ceremony in mid-February at the Library of Congress. For more information, visit www.srpnet.com/centennial/.

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