

Glen Canyon: a Dam, Water and the West

Script by Ken Verdoia

"At 11:30 on the morning of October 15, 1956, President Eisenhower from the White House triggered a blast far smaller than the atomic explosions now so commonplace, but a blast that will significantly effect nearly one-fifth of our nation's land area."

Narrator:

It was a moment when the face of the American West was changed forever; a path chosen at a Crossroads. . .to turn toward what was possible, and away from what had been; to begin one of the largest construction projects in human history; to create one of the world's largest man-made bodies of water in what many had considered a desert; to literally carve a city out of the wilderness; to race against a flood that would drown a thousand years of human history. . .and a million years of natural history. It was the future of the West. A story of winners and losers. . .of the politics of power, and the few who stood in the way. [Ken Sleight/river runner] "They never tell you what's been destroyed. They tore the heart out of the whole Canyon Country. It took the heart out of the whole thing." [Floyd Dominy, former Commissioner, Bureau of Reclamation]. "I've changed the environment. Yes. But I've changed it for the benefit of man. "

Narrator:

In the 1950s. . .in a remote place on the Utah-Arizona border. . .the Great western issues of water and progress would play out in dramatic fashion against the timeless flow of the Colorado River. . .[program title sequence]
Glen Canyon: A Dam, Water, and the West.

Narrator:

Straddling the Utah-Arizona border, the Glen Canyon Dam rises over 700 feet from solid bedrock to block the flow of the Colorado River. Behind its wall of five-million yards of concrete are the waters of Lake Powell. Storing enough water to meet the needs of almost thirty million families for a year, it is one of the largest manmade reservoirs in the world. Inside the dam a network of water powered turbines generate electricity that crisscrosses the West on a web of transmission lines. Some three million people a year take the time to visit the dam and the more than 100-mile long reservoir that fills this corner of the stark landscape known as the Colorado plateau. Those visitors leave an estimated half-a-billion dollars behind each year. . .fueling dozens of small town economies, like the one in Page, Arizona. Just slightly more than a generation ago. . .the town, the tourists and their money, the electricity, the lake and the dam did not exist.

In 1869, John Wesley Powell conducted the first scientific mapping expedition down the Colorado River. Powell flew in the face of the unknown---with legends telling of giant whirlpools and stretches where the Colorado River would disappear underground, killing any who challenged its waters. The reality was every bit as challenging, as rapids tore at Powell's wooden boats. But as Powell neared what would one day become the border of the states of Utah and Arizona, the Colorado River dramatically changed its character. Rapids gave way to mile after mile of slow rolling water. Smaller rivers and streams had created dozens of dramatic narrow side canyons. . .and open pools of clear water that attracted an incredible array of wildlife. The dramatic legacy of ancient civilizations was found in thousands of rock carvings of a disappeared people. After the crashing force of previous stretches of the Colorado. . .Powell viewed this canyon as a walk in a park for his grateful crew. So park-like, that he called it a Canyon of glens---Glen Canyon. For the next eighty years Glen Canyon would remain much as John Wesley Powell described it in 1869 -- quiet. . .relatively untouched. . .and one of the most isolated corners of the Continental United States. But in his subsequent reports, Powell would forecast that the future of the west would be told by water.

Barry Wirth - Bureau of Reclamation:

"Water is the lifeblood of the West. The west was settled adjacent to water, whether it was a well or whether it was a river. And you can't have any more people than you have water source."

Narrator:

By the 1920s all of the easily accessed water in the west had been claimed. But the Colorado River. . . protected

by a sea of slick rock and sheer canyon walls, defied western development. Billions of gallons of the silt, heavy Colorado flowed to the sea each year.

Roy Webb - Historian:

" So, if you're going to build cities, if you're going to develop as Americans have always wanted to do, you know, full speed ahead, then you absolutely have to have a source of water, and the only way you're going to have water, west of the 100th meridian all the way from the Great Plains to the Sierras, if you're going to do it, you've got to store water."

Narrator:

In 1922 the states of California, Nevada, Arizona, Utah, New Mexico, Colorado and Wyoming created an ambitious plan to divide the waters of the Colorado River, as a means of convincing the Federal government to help them tame the river. It was called the Colorado River compact.

Dave Wegner - Glen Canyon Institute:

"What the compact did was to prove to the United States Government that the states, the seven Colorado River basin states, had agreed to manage the water of the Colorado River."

Roy Webb:

"The next thing to do, of course, was to build a big dam to store it, because the river fluctuated back and forth. Some years it would dry up, some years it would be a big flood...Hoover dam was the first one built. Started in 1928 finished in 1935. That was such a big success, that it gave them the idea that you could develop the rest of the Basin.

Wegner:

It started to worry the Upper Basin states. It started to worry the Upper Basin states so much that they were concerned that California, Nevada and Arizona would grab all their water if they didn't find a way to control it.

Narrator:

Utah, Colorado, New Mexico and Wyoming --the so-called Upper Basin states--were helpless. A guarantee of half of the water from the Colorado River was meaningless if there was no way to hold on to the water. Without an adequate faucet, the water flowed down the drain to the downstream states. . .and frustrated ambitious dreams of development and new wealth in areas crippled by the depression. Politically weak in Washington, and struggling with how to use their half of the water, the Upper Basin states were paralyzed for nearly thirty years, until the end of World War II, when a renewed nation flexed its muscle in the west.

Dave Wegner

The west was the place of development, of growth. It couldn't live with its present water supplies. It needed to have more ability to move water, fresh water into the system so development could occur. It needed the ability to generate electricity."

Narration

In the post-war era the nation raced to a new vision of manifest destiny. In 1956 congress approved the interstate highway system to dependably link the nation from coast to coast. And in the same year, congress took up the unfinished business of the Colorado River- -viewing it as a rogue that had to be tamed.

Roy Webb

It was expressed in the 1950s as we should turn a natural menace into a national resource. That was the kind of slogan that was used later in the Colorado River Storage project.

Narration

The Colorado River storage project's primary purpose was to serve as a giant water bank. To guarantee a flow of Colorado River water to California in dry years, and hold on to the rest for the Upper Basin states. But to sell a series of dams to the public, the project was offered as an end to flooding, cheap hydro-electric power for the

people, and water management to make the desert bloom.

David Brower Former Director, Sierra Club:

And I will not forget a little 3 cent postage stamp back in the days when that's all it took to send a first class mail letter. It had a picture labeled "Conservation". . . not a very big one, and it consisted of a dam. And that's what we were thinking then. . . the best thing to do for the river is to plug it. If you don't plug it, the water wastes to the Sea."

Narrator:

In the 1950s a federal army of the best and brightest engineers and project managers were poised to transform the flow of water in the west. They were the nation's dam builders---the Bureau of Reclamation.

Floyd Dominy:

"And we had no naysayers in those days. Everybody thought that Managing water was a desirable thing, and it was in the public interest. And we didn't have the lintpicker behind every bush."

Dave Wegner:

It had the power of congress. Reclamation and the Commissioners of the Bureau of Reclamation were very good friends. . .controlled perhaps in some senses, many western congressmen and senators who looked at the Bureau as the vehicle to implement a lot of their visions for their individual states in regards to future development."

Narrator:

Harnessing the upper Colorado River would cost hundreds of millions of 1950s tax dollars. . .perhaps equal to as much as two billion dollars now. But there was little opposition.

Dominy:

It didn't make any difference whether there was a Republican or Democrat in the White House or in charge of congress. We got good support for reclamation.

Wegner

There were no environmental laws. And so they could move forward with little opposition to many of the proposals that they were running out there. And within the context of the Department of the Interior, the Bureau of Reclamation is analogous to me like the Marine Corps. You give them a job, they're gonna get it done."

Narrator:

But the bureau was stopped at Echo Park. To harness the Upper Colorado River, the Bureau of Reclamation proposed a series of dams to store water and generate hydro-electric power. Power sales would help pay for the dams.

Roy Webb:

And one of them, what the Bureau always called the wheelhorse of the project was the way they put it, was the Echo Park Dam, which would have been built about two miles below the junction of the Green and Yampa Rivers in what's the center of Dinosaur National Monument."

Narrator:

On the drawing boards of the Bureau of Reclamation, the Echo Park Dam proposed for the Green River in eastern Utah was an enormous project.

David Whitman - Park Ranger/ Dinosaur National Monument:

"We're in Whirlpool Canyon, and this was named by John Wesley Powell in 1869 in his first trip down the Green and Colorado Rivers. And the significance of this spot behind me here is this is where the Echo Park Dam was going to be built by the Bureau of Reclamation in the early 1950s. And if they had succeeded in putting the dam in, this area that we're standing now would have been under five hundred feet of water."

Narrator:

Even with the promised flooding of a sizeable portion of a National Monument, the Echo Park Dam and a companion project at nearby Split Mountain enjoyed near unanimous support in the neighboring community of Vernal, Utah.

Ken Sowards - Vernal Resident:

They saw it as an absolute good thing. And there was complete unity. . .and the community worked together. . .they formed what they called the Aqualanies Group. Naturally, aqua meaning water. The Aqualanies Group was responsible for going back and helping the Washington Delegation lobby for passage of Echo Park Dam."

Narrator:

But plans for a dam inside a National Monument had caught the eye of the executive director of the Sierra Club.

David Brower:

"We were concerned about the sanctity of the National Park System. We'd already suffered very badly back at the turn of the century when San Francisco destroyed part of Yosemite National Park with the Hetch Hetchy Dam. And we didn't want anything more of that or anything like it."

Narrator:

Brower triggered what may be the nation's first full scale environmental protest to block development. . .widely distributing films that Showcased the natural beauty of the area that would be flooded.

Roy Webb:

It was almost like you were against mom and apple pie if you spoke against western water development. And so that's the really intriguing part, is that movement was able to take force."

Sowards:

At that time we called them nature lovers. I speak specifically to the Sierra Club. But you know their funds were so great and so varied that they can do things the ordinary citizenry, groups such as the Aqualung, the group here in Vernal, Utah, they can do things that we couldn't think of doing."

Sierra Club Film:

"We all know that progress must move forward. Sometimes it will march upright with sound development. Sometimes it will stumble and make a slum. Certainly we can ask progress to walk around and not through our garden--our national parks."

Narrator:

A public outcry against placing a dam in a national park soon had an impact in congress, and the Colorado River storage project--once considered a sure bet--suddenly was in doubt as congressmen started to back away from their support.

Webb:

They started changing their ideas about the Echo Park Dam, because they were afraid it was endangering the entire project. And so, one by one, they started dropping out. . ."

Narrator:

To save the rest of the Colorado River storage project, the Bureau of Reclamation dropped plans for Echo Park.

Ken Sowards

Oh we were devastated. Absolutely. It was a complete shock to the town.

Doris Karran Burton - Vernal Historian:

That's all people in town could talk about. The Vernal Express even put a black line around, deep black line, around their announcement. . ."

Narrator:

But the water that would have been stored at Echo Park had to be held somewhere for the river storage project to work. More than forty years later, David Brower acknowledges that he offered a solution:

Brower:

And I came up with the brilliant idea that Glen Canyon dam, which was already being proposed, should be built something like 35 feet higher in order for it to hold all the water Echo Park was going to hold. . . I was ready to give Glen Canyon because I didn't know what was there.

Narrator:

Dinosaur national monument had been saved. Glen canyon would hold the water.

Narrator:

Glen Canyon of the early-1950s as "the place nobody knew". Here there were no towns along the Colorado River. . .no paved Roads. . .no easy access to the River in Glen Canyon. It was a haven for a small number of hardy wilderness outfitters who occasionally would ferry a rare group of adventurous tourists down this slow-moving section of the Colorado.

Ken Sleight - Former River Runner:

"The river flowed in great big meanders, lots of sand bars along the way. It was very heavenly. And you look forward to not only that trip you're on but the next trip and the next trip and I was sorry to see the season end.

Katie Lee - Former River Runner:

And when I took a look at Glen Canyon, I went down in a rowboat, I had time to look around I had time to look up and down and feel it. . . And when I finally did that, there was my river. And from then on, it was my river. "The light acted upon you. It made you do things. You would step into a stab of light as you walked around a dark corner. You never knew what was going to be there. And then you would round a bend, maybe, and all of a sudden you would be in total darkness. And you'd be in a kind of light that ricocheted down through so many different areas that it was Eerie. . . and it gave you this feeling of being suspended in time, and you just didn't know where you were."

Sleight:

And then there was the Indian ruins, hundreds and hundreds of Indian ruins, you'd see writings on the wall, their petroglyphs and pictographs. . .and if you had time to go up all the canyons, you'd see thousands of them."

Narrator:

Increasingly, the river runners were also seeing survey crews along the cliffs of Glen Canyon, crews from the Bureau of Reclamation scouting a dam site in anticipation of congress authorizing the Colorado River Storage Project. The dam would be one of the biggest ever built. . .and the storage area would flood over 100 miles of the river.

Lee:

I definitely recall hearing it and laughing my head off. I said, "Be serious. There is no way they're going to do that. That's an impossibility. Brushed it off. Absolutely just brushed it off."

Sleight:

It was a done deal, and everybody seemed to want it. Even some environmental groups, so-called environmental groups said the dam would be okay.

Narrator:

The Sierra Club was one of those groups willing to stay silent on Glen Canyon after winning the battle over flooding Dinosaur National Monument. When David Brower reversed his direction and urged the Sierra Club to oppose a dam in Glen Canyon, the Sierra Club ordered him to end the fight.

Brower:

And I was bitterly disappointed that happened, but not smart enough to change the Sierra Club's position. It just happened that the Sierra Club was the keystone in the structure of the defense of the Colorado River. If the keystone drops out, you're in trouble. The Keystone dropped out. The dam went through."

Narrator:

The Bureau of Reclamation viewed Glen Canyon as a perfect dam site. The steep canyon walls would be filled to a depth of five hundred feet for 180 miles by some eight trillion gallons of water, with nothing to stand in the way.

Floyd Dominy:

And the storage area was uninhabited. We didn't have to relocate any railroads. We didn't have to relocate any highways. We didn't have to build barrier dikes around any little towns. There was nothing there. Nothing there."

Narrator:

Again, the dam was offered as a symbol of progress in the arid west. **Government Film:**

"Water. Colorado River water, could mean energy. Properly controlled and utilized could mean power--flashing pulsing power for cities and industries virtually unborn. Could mean irrigation for the thirsty crops of upstream valleys. Life for a swelling population as yet unborn."

Ken Sleight:

And they told everybody it was a great thing. . .it was going to bring jobs. It was going to bring progress. . ."

Katie Lee:

And that's when I said, "Well I have just found a place that could save my life, and some black-handed bureaucracy is already clawing to take it away from me."

Floyd Dominy:

Glen Canyon Dam was authorized in April of 1956. . .the Colorado River storage project. And we actually started construction within six months. Why today we'd spend six months trying to find out where to put the toilets for the rock scalars."

Narrator:

The Bureau of Reclamation set up a temporary project headquarters in Kanab, Utah--the closest town to the dam site, but still 80 hard miles away from the work. The dam site was a narrow gorge, almost exactly on the Utah- Arizona state line. At this point the cliff walls were only 12-hundred feet apart--but a Jeep would have to drive 200 roadless miles to get from one side to the other. Roads would have to be laid and a bridge built. The Colorado River roared through the gorge 700 feet below. Tunnels would have to be dug to divert the river while the dam was being built. On top of it all, there was no place for a peak work force of 25-hundred workers to live. A town would have to be carved out of a wilderness that had defied settlement. Only three construction companies thought the challenge was worth a bid to be the dam's primary contractor. When the bids were opened, the New York based Merritt-Chapman Scott corporation was awarded the contract as the low bidder at nearly 108-million dollars. The bid was shockingly low--thirty million dollars less than the bureau's estimate, ten million dollars below the next lowest bidder. In Kanab, the locals said unless things went perfectly, Merritt-Chapman Scott would work seven years to build a dam, just to lose money. Subcontractors started on the roads to the construction site, carving the open land and building bridges to span the slickrock chasms. Two lane black top stretched south from Utah and north from Arizona, ending in a stand-off on the cliffs of the dam site. The steel arch bridge linking the roads would be almost seven hundred feet above the river bed--the highest bridge of its kind ever built. To get the first bridge workers back and forth, chain link fencing was laid on cables to form a temporary footbridge.

Duane Barrier - Engineer: Bureau of Reclamation:

It was about four feet wide and it was just a screen. You could look right straight through it seven hundred feet down to the river. And I wasn't too excited about walking out there. In fact, I didn't go very far before I turned around and come back."

Mac Ward - Early Area Resident:

There was no mesh on the sides, just open. You had to walk on that swinging bridge. Every time the wind would blow, the bridge would just go back and forth and back and forth. And the bridge went up and down as you were walking on it."

Narrator:

Work on the permanent bridge was just as challenging, with steelworkers fitting together a giant erector set above the Colorado.

Harvey Gardner - Dam Construction Worker:

"And they did a perfect job. They had nets underneath, and they didn't lose a man. But it was exciting to watch the men when they'd get off work. They'd jump off into those nets, and then walk back over here on the side. Unbelievable."

Narration

By February of 1959 the bridge was complete. A torch was used to cut a chain ribbon to dedicate the bridge. . .and hundreds of people made the trip to peer down into the spot where a dam would rise.

Lyman Hafen: Watched Dam Construction as a child:

"I think the most indelible image in my mind is standing there as a young boy. . .i was about six. . .standing there with my Grandfather who was near eighty, and feeling his arm around me, and he would point out the men working, and he explained to me that those little men way down there that looked like soldiers from my toy sets at home were actually workers. But I think the thing I remember the most is the pride my Grandfather felt standing there, grateful that he had lived long enough to see man accomplish such a thing."

Harvey Gardner:

"Believe it or not, I'd go home and my wife and kids would ask me to bring them back. . .and we'd come down, and I really enjoyed standing on the bridge watching the construction. It was a fascinating project all the way."

Narrator:

From their vantage point visitors could mark the progress of the first two years of work. High scalers had rappelled off the sheer cliffs to pry loose sandstone away from the walls as part of the process of carving notches in the canyon to seat the walls of the dam. It was dangerous work, with tons of loose rock tumbling down the cliffs, and only simple rope harnesses to hold the workers in place. This photo shows where a high scaler was wiped off the cliff to his death in the river. . .his drill still embedded in rock.

Dynamite and drills had gouged two diversion tunnels deep in the canyon walls. The tunnels would divert the Colorado River from its ageless bed in Glen Canyon. As the bridge dedication neared, bulldozers raced to build a temporary--or coffer--dam to force the river into the tunnels. On February eleventh 1959, the Coffey Dam held. For the first time the Colorado River stopped flowing through the canyon it had created. The water backed up to a diversion tunnel and detoured, returning to the river bed half-a-mile downstream, as it poured out of the back end of the tunnel.

Narrator:

When the dam in Glen Canyon first went to the drawing board, planners knew they would be forced to create a new city in a virtual wilderness. The workforce would eventually swell to 25-hundred. . .and with family and support services a city of ten thousand people would be dropped on a location with no homes, no schools and no streets. A new government city was viewed as an incredible federal plumb in the west. Millions of dollars would be poured into the site. . .thousands of new taxpayers would move in, and the location was certain to

serve as the permanent gateway to the dam. Utah and Arizona both desperately wanted the town. Utah Senator Athur Watkins argued that 95-percent of the resulting reservoir would be in Utah- - that the Bureau of Reclamation had already established its temporary project headquarters in his State- -and all of the land on the Arizona side of the river was in the Navajo reservation, and sure to be barred from development. Watkins said Utah deserved the townsite. But powerful Senator Carl Hayden was from Arizona. As the Chairman of the Senate Appropriations Committee, Hayden controlled funding for the Bureau of Reclamation and its water projects. The battle for the town was over before a shot was fired. The Navajo nation gladly traded a wind-swept mesa near the dam site to the federal government. In return they received prime oil producing land bordering their reservation in Utah.

Soon bulldozers were at work carving an ambitious pattern of streets on the Arizona mesa. The town would be named after a past commissioner of reclamation: John C. Page.

Stan Jones: Early Page Resident:

Well, Page was a trailer court. It had twelve hundred trailers here which housed the families of the workers on the dam. I believe at the time we had a population of about six thousand.

Steve Ward: Child in Early Page:

The town of page was very primitive. Had paved roads and sidewalks, but there wasn't any grass, there were no trees, so this little tiny bit of a breeze that's blowing today made it just--the sky was half-filled with sand.

Mac Ward:

Driving into town, there was no shopping center like we have today. We had Babbitt Brothers Trading Post. . .had a big tin building for business. It's where the grocery store was."

Steve Ward:

The families knew when the grocery truck didn't make it up here, because there would be certain areas of the shelves that were just completely empty because they couldn't stock enough in that one grocery store to keep everything for weeks at a time. So, if that week's grocery truck for some reason didn't make it, and that was 145 mile drive from the nearest supply depot, if he didn't make it, you're out of a lot of stuff."

Narrator:

Maintaining basic services like banking or mail delivery was difficult enough in the remote outpost of Page. But the greatest challenge was produced by the town's population itself. Page was a dramatic example of the post-war baby boom. Young construction workers had young families. . .and there was a pressing need for schools.

Steve Ward:

The first schools we went to were a great big giant metal building and all three buildings housed every bit of k through 12. And the town was up to about eight thousand people. That's a sizable number of little kids going to school. And three great big un-air conditioned metal buildings. Unheated, too, in the winter time." **Narrator:**

Permanent schools and churches were planned. As the bridge linking Utah and Arizona was opened in 1959, the people of Page, Arizona felt they were one step away from carving a new tomorrow out of the last American frontier.

Harvey Gardner

Boy those are good people. And it seemed like they all had kind of a pioneering spirit. And you could kinda, everybody kind of pulled together, worked together.

Narrator:

And then they were pulled apart.

Floyd Dominy:

I was made commissioner May 1st of 1959, and on July 1st. the strike hit Glen Canyon work force and the place was shut down completely for six months.

Narrator:

The progress of Page was the issue. The dam contractor, Merritt-Chapman Scott had been paying workers six dollars a day as a kind of hardship away-from-home subsistence bonus. In 1959 they wanted to end the payments because Page had full services, and could support workers and their families. The company had to cut costs, if it was going to avoid a big loss because of its low bid.

Narration;

Rejecting what they viewed as a pay cut, the workers went out on strike. In the post-war construction boom, hundreds of workers found jobs elsewhere.

Gardner:

I left from the strike and went over and worked on the power plant over in four corners for Arizona Public Service. We were lucky, a lot of people really hurt during that period of time."

Dominy:

The people that suffered the most were the new merchants that had moved to Page and just getting established on borrowed money, and all of a sudden the work force has evaporated. . . and Page became a ghost town."

Mac Ward - Page's First Pharmacist:

We opened the store and there were ten thousand people living in Page. Two weeks later there is a six month strike, and the town went down to one thousand people. The men that went out on strike and looking for work elsewhere, they left their families, some of them had youngsters and needed medicine. All during the strike we had to extend credit to those people. And babies had to have milk and they got it from us, and we charged it to them until after the strike was over. We went into quite a big indebtedness during that time. The strike was settled on Christmas eve. And, boy, was there a party in Page."

Narrator:

The strike was resolved just before Christmas of 1959. With the dawn of a new decade, the town of Page and the building of the Glen Canyon Dam would move ahead.

Narrator:

If the town of page was about tomorrow. . .activities further upstream in Glen Canyon in the last days of the 1950s were a race to salvage the past. **Donald Fowler,PHD - Anthropologist:**

"Every time the government built a big dam. . .there were laws that said you had to salvage the archeology, the history, the ecology before the project was built. So the project was actually called, technically, the Upper Colorado River Basin Archeological Salvage Project, affectionately known as the Glen Canyon Project. . .this just happened to be the biggest one that had ever been done at that time.

Fowler:

This is sort of the fringe or perimeter of the Anasazi Cultures, the cliff dwellers as they used to be called. The people who came into this whole country, into Monument valley, and the Colorado Plateau who beginning about 500 B.C. began to be farmers and they began to live in villages. . . and then there was this big population explosion between about 900 and 1100 A.D., and that's when most of the archaeological sites that are in here were built. By 1300 they were gone. So if your charge is to find everything that's here. . . then you've first got to go find everything, and once you've found it, then you would make decisions about what further studies you're going to do.

Fowler:

We used boats on the river. We used pack mules. We used pack horses. We used foot leather. That's how we got in and out. I literally had never camped out. I never run a motor boat, any of those sorts of things. And here I

was. I was trained to do the archeology. . .but this was not in my game plan!"

Narrator:

Teams from the Museum of Northern Arizona worked the south side of the Colorado River, while crews from the University of Utah worked the north. They were part of the single largest archeological project staged in the United States to that time. And in the process they were exposed first-hand **to the power of Glen Canyon.**

Alexander Lindsey, PHD - Part of the Arizona Survey Team:

"I was in awe of the mood changes that you saw in the canyon. The different lighting. Never did you see the canyon twice in the same mood, the same coloration. It was always changing. One of the most dynamic places I have ever worked, or ever visited."

Narrator:

The University of Utah crews were directed by archeology Professor Jesse Jennings. A stickler for details and repair, he even insisted that morphine and death certificates be part of the standard field outfit for his young team:

Fowler:

And Jennings number one maxim by which he was famous. . .was 'only fools have adventures.' Only fools don't plan everything so hat you minimize any problem you might have. In this country it can rain 50 miles away and its clear where you are, and all of a sudden this flash flood comes.

Lindsey:

And the runoff was the magnitude where it would hit the cliff edge and e come out over the cliff edge ten, fifteen twenty feet in a spout.

Narrator:

The crews located hundreds of ancient sites---ranging from entire walls of rock art to pottery, tools and even sandals. Many times the young students were the first humans to enter an intact dwelling in six hundred years. They would be the first and the last. . .the sites would soon be underwater.

Lindsey:

We were all acutely aware of the deadlines we had. . . we knew when the dam would be completed, when the filling would start. Yes, we were very definitely aware that it would all come to an end in a short while.

Narrator:

Young men on the river racing against time to save one thousand years of human history. And young men on the river racing against time to build the future.

Narrator:

The first bucket of concrete for the Glen Canyon Dam was poured on June 17th, 1960. The coffer dam had allowed crews to dig down in the riverbed more than 100 feet to bedrock to start pouring the base of the dam. Glen Canyon now had the largest concrete plant of its time at work. Crews worked around the clock pouring what would eventually top out at more than five million yards of concrete.

Mac Ward:

Before I was a pharmacist, I was an engineer. . . and Lem Wiley was the construction superintendent for the Bureau of Reclamation, and every time they got to a new phase of construction he'd come up to the drugstore and tell me to close the drugstore and he'd drive me down to see what was going on. One year. . .the concrete was about half poured. . .but I had just got in a whole shipment of electric blankets. I must have had forty electric blankets of all types for the Christmas season, and we had a freeze down at the dam. It had dropped to four below zero, so Lem Wylie came up and bought every electric blanket I had to keep the concrete from freezing."

Narrator:

But heat was a more common enemy for the dam and its workers.

Harvey Gardner:

In the summertime it was really hot. Sometimes it would be hundred and fifteen, hundred and twenty degrees down there. And when you're welding, you just wouldn't have a dry piece of clothing on ya."

Narrator:

Heat was such a problem for the hardening concrete that the concrete was mixed with ice rather than water. To keep up with demand, the nation's largest ice plant was built next to the concrete plant. The work force soon reached its peak of 25-hundred. And it continued to be dangerous work. Ray Watten was deep in the dam site welding shoulder-to-shoulder with another worker. One afternoon when his foreman called him over. . .

Ray Watten - Dam Construction Worker:

. . .and we walked over to the edge of the form and climbed right over the wall and about that time a terrific blast hit and the welder that I'd just been working right next to, why he was killed instantly and quite a few more was down from shrapnel from the pipe and everything. . .

Gardner:

They really preached safety, but it was so many things goin' on in such a small area. It was dangerous. "

Narrator:

Seventeen men would die during the construction of the Glen Canyon Dam. . .and the dam continued to rise. By 1963. . .after seven long years of construction. . .it was also attracting new interest. Federal officials were sending out press releases promoting the future of recreation on a **still invisible lake**.

Mike Korologos - Salt Lake Tribune Reporter, 1963:

"I remember as a young reporter the superintendent was telling me how big this was going to be. And I couldn't fathom how large it was gonna be. There was more shoreline he said than the entire west coast of the United States. Nineteen hundred miles, and I couldn't fathom it. You're sitting in the middle of a desert. So, being creative and wanting to generate more bylines I thought: 'This is a great photo opportunity.' So I lined up a motorboat and took a picture that had the back of the boat in the photo with this vast open sagebrush desert in the background with the caption: 'This is where a marina is going to be!'"

Narrator:

Speculators jumped in. . .touting beach front property in the heart of the desert. And the Colorado River itself was alive with river-running parties. . .as hundreds of people flocked to Glen Canyon to get a final look before it disappeared.

Richard Ingebretsen - Visited Glen Canyon as a Child:

"I was a scout, and our scoutmaster had planned a trip down to see Rainbow Bridge. I have a very vivid memory of it. . .the reason is, it was a towering narrow canyon. It was called Forbidding Canyon,. . . and he said it would take three or four hours to hike up to Rainbow Bridge. It was Shangri-la for a little kid because there were waterfalls and pools. . .and animals everywhere. And the scoutmaster stopped at one point. . . and said 'enjoy this because next year this is all going to be under water. 'And I remember stopping, and another boy asked the question...'Why is it going away?' and the scoutmaster said, 'they're building a dam.'"

Narrator:

It sounded like Dinosaur National Monument all over again. Rainbow Bridge was a protected National Monument--- the enormous, graceful arch a reclusive six miles away from the banks of the Colorado River. When the Glen Canyon dam went on line, engineers expected water to fill the canyon leading to Rainbow Bridge, and even fill in the base of the arch. Now an adamant opponent of the dam, David Brower raced to Washington in a last ditch effort to block the dam to keep water out of the National Monument. But the Bureau of Reclamation's Floyd Dominy was working with just as much determination to ensure that water under Rainbow Bridge would not derail the dam. It was an epic confrontation between two men with sharply divergent views---

and only one would prevail. In January, 1963, Secretary of the Interior, Stuart Udall, sided with the Bureau of Reclamation and ordered the diversion tunnels on the dam closed. The temporary coffer dam was pierced. . .river water rushed to the wall of the Glen Canyon Dam- --stopped- - -and started to slowly rise against the concrete.

Ken Sleight:

". . .you know it's coming and you and you know it hurts to know that its coming. But not until you see it coming up and destroying or covering everything that you felt of great worth, even a sacredness about it, then it takes hold. . .and that was the toughest thing for me - watching the water rise in 1963 and 1964."

Katie Lee:

I watched the water come up. I actually went back. I don't know how I did that. I went down and I watched the water slowly come up into these places that had meant so much to me. . .and as I left the place and took a last look at it, I turned around and I said. . ."I don't want to come back and watch you die. Goodbye. And I left and I didn't come back.

Narrator:

The flooding of Glen Canyon coincided with the culmination of the archeological salvage project. Ten thousand artifacts had been pulled from their centuries-old bed. . .transported to museums in Flagstaff, Arizona and here at the University of Utah. The work changed the way modern society looked at an ancient civilization.

Donald Fowler:

All the artifacts are in the hands of the museums. But it's not just artifacts, because artifacts without documentation doesn't mean anything. Artifacts with notes, photographs, with maps with context are documents themselves. They're cultural history. They tell the story.

Narrator:

The discoveries forced by the decision to flood Glen Canyon found a new resting spot. They are still used by researchers such as Duncan Metcalf who seek to add more pages to the history of the people who lived in Glen Canyon long ago:

Duncan Metcalf - Utah Museum of Natural History:

The photos, the notes, the maps and the artifacts are here for study. The fact is, sites are the ultimate in endangered species. It seems trite to say, but nobody's making 5,000 year old sites any more."

Narrator:

Pottery and sandals and tools could be removed in the 1950s. . .but the dwellings and the rock art stayed behind, slowly claimed by the waters that started rising behind the Glen Canyon Dam in 1963.

Ladybird Johnson - Dedicating Dam as First Lady:

"I am proud to dedicate such a beautiful manmade resource. I am proud that man is here."

Narrator:

Construction on the dam would continue for another three years. By the time "first lady" Lady Bird Johnson dedicated the dam in 1966, the reservoir was a dark blue sea behind the dam, and backed up for nearly 200 miles, filling the side canyons and the confluence with the Escalante and San Juan rivers. The first marina for boats was already in place. . .and promotional photos demonstrated the new vacation potential of the area. Floyd Dominy had offered the reservoir a new name- -Lake Powell, after the first explorer to navigate Glen Canyon nearly one hundred years before. The dam itself was hailed as one of the engineering wonders of the world---honored as the outstanding engineering project by the American Society of Civil Engineers in 1964. When critics of the Glen Canyon Dam published a book titled "The Place No One Knew", the Bureau of Reclamation fired back with its own publication. Titled "The Jewel of the Colorado", the book featured photographs and words from Bureau Commissioner Floyd Dominy. "There is a natural order in our Universe," the book offered. "God created both man and nature. And man serves God. But nature serves man. To have a deep

blue lake where no lake was before seems to bring man closer to God."

Dominy:

We flooded out the rattlesnakes and the prairie dogs and a few deer, and a beaver or two. That's all that was flooded out when we created a lot more beauty, and made it available, which it wasn't before."

Stan Jones:

We used to number the visitors here in the hundreds, and they were hikers. They had to be. There was no other way to get in here. . . .like to visit Rainbow Bridge, you'd park it and you'd hike sixteen miles into the canyons because . . .this was one of the most remote areas of the United States. So we had relatively few people come in here. Today we number them in the millions."

Steve Ward - Lake Powell Resorts/Marinas:

We feel that the economic impact to northern Arizona and southern Utah and when I say "we" - that's along with the Arizona Office of Tourism, Utah Travel Council, consider it to be 500-million dollars a year into those economies, towns like Page, Hanksville, Utah, Kanab, Utah and Blanding, Utah and all the little towns around the perimeter of the lake."

Narrator:

And the dam has delivered on another economic promise. Sales of electricity have paid the bills for the dam's construction and its operation and maintenance. And in the process the dam has become its own tourist destination. But the dam's most important role may be its least understood function.

Dave Wegner:

Glen Canyon Dam is basically the largest piece of plumbing system on the Colorado River. Because it serves as a spigot to allow the upper basin states to release just the amount of water that they are legally required to under the Colorado River compact, and of course that amount that's added for the treaty with the Country of Mexico.

Barry Wirth:

"Under the terms of the compact the states have to guarantee delivery of 75-million acre feet of water in any rolling ten year period to the lower basin states. If you have a drought, you may not have enough water to use in an upper basin state, like Utah, and make that delivery to the lower basin states. By having Lake Powell in place, we have water in storage to protect against the drought periods."

Narrator:

It's an update of the age old story of water and the west. The rapid fire development of open spaces, coupled with explosive growth in major metropolitan areas, ensures that water will continue to drive the often-debated wheel of progress in the west. The demand for water is so keen that a few advocates have even dared to challenge the Colorado River Compact, urging that what some consider a "near sacred" agreement be re-written. . . .while some states consider selling or leasing water rights to desperate neighbors. And since construction of the Glen Canyon Dam, an entire generation of new environmental law has emerged. Water management once meant serving human needs. In short, building dams. But now there are mandates for protecting endangered species, and providing water to maintain the natural landscape. All demand a new brand of water management. And, in the process, the original blueprint for the Bureau of Reclamation has been torn up. The once vaunted dam building giant is now adjusting to a new role as a water steward. The days of massive water projects. . .of fast-track funding. . .those days when there were no environmental laws to grapple with, are gone.

Floyd Dominy:

Now that's ridiculous. Under today's environment, there's no way that you can build another project anywhere."

Narrator:

Drawing the new era into sharp focus is a small group of determined advocates who argue that Lake Powell should be drained. . .and the Colorado River restored to its natural flow through Glen Canyon. Once the

unthinkable, their campaign has received the endorsement of the Sierra Club--- the environmental group that refused to be a roadblock to building the Glen Canyon Dam more than forty years ago.

Barry Wirth:

"We've got to have the developed water resource. We've got to have the hydropower resource. We've got to have the recreation value that regional economies depend upon. But we have a better way of managing all of that for some measure of environmental sensitivity. In today's world, we would have sited this dam under a process that would have been significantly different."

Narrator:

With all that has changed, one aspect of life in the west has remained constant from the days of John Wesley Powell: water explains what has come before. . .water will be at the heart of what happens next. The Glen Canyon Dam stands as a symbol for both past and future. On one hand it is a symbol for those who want to turn back the clock, who remember what was.

Ken Sleight:

"I think glen canyon has taught us some great lessons. I always look at it as the rape of Glen Canyon, and the lessons to be learned from that."

Narrator:

But others view the dam as a symbol of the possible. . .of progress. . .of humankind realizing its potential in the American west.

Floyd Dominy:

A young man not long ago asked me, he said, 'Are you a hero or villain, based on your record as Commissioner of Reclamation?' Well, I said I think I'm a hero. . .or should be considered it by you, because you wouldn't be here if it wasn't for the development of the west sponsored by the Bureau of Reclamation."

Narrator:

In 1957 a crossroads was reached in the west. A point where past, present and future would meet. Just as water, stone and society would converge. A place where much would be gained, and much would be lost. The place was Glen Canyon. . . where memories of the past would clash with visions of progress. A place in the west that could uniquely encourage both.