And the River Runs On…

The flood of 1943 brought federal dollars and, belatedly, an engineering solution at Lucky Dam.

Government showed the flood threat to the Boise City at the 2002 Treasure Valley Water Summit. *Courtesy of Echohydraulics Research Group*

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“Oh, it went over the banks…Of course, it come up out of the ground, but then the water was everywhere…”

- Holda Wood, Boise resident since 1911

Residents of the Boise River Valley experienced a painful reminder of an ancient cycle on April 21, 1943. Arrowrock Reservoir had reached its capacity and water surged uncontrolled over the spillway into the valley below. The flood proved that despite impressive technological advances, rivers will take their own courses. They cannot be completely tamed, nor should they be. It is certainly reasonable to desire the protection of life and property, but a balance must be found between the impossible Progressive dream of total domination and completely unfettered waterways.

When water goes where humans had not planned it is labeled a natural disaster - a flood; the type of calamitous event that causes enormous destruction of life and property. Flooding is a natural occurrence along most waterways as part of a seasonal cycle. People have understood flooding since the earliest human records. An obvious example comes from the ancient Egyptians who counted on the annual flooding of the Nile to deposit fertile silts for successful crop growth in the floodplains. They knew better than to build their great cities in the Nile floodplain – they planned around the ebb and flow of the great river. From the time of the ancient Egyptians until fairly recently (the mid-1800s in the American West) seasonal floods have been a natural hazard, but they were rarely considered disasters. The floods were known to be a natural occurrence and instead of fighting against this natural cycle, people used it to their advantage by planning around the cycle and giving the rivers space. The “water everywhere”, as referred to by Boise resident Holda Wood in the opening quote, was simply water in the floodplain, the natural overflow zone that really should be considered part of any river. By the 1940s, Boiseans had come to believe that they had nothing to fear from their river, and they had begun building in the floodplain – an area formerly used primarily for farming and for makeshift housing by the destitute. The problem has long been that, regardless of the dangers, floodplains are attractive places for human habitation due to the ease of food and water procurement and the convenience of a ready transportation route. This is especially true once the high ground overlooking a river is filled and population pressures increase forcing people onto the floodplain.

With the populating (by choice or necessity) of the floodplains and advances in flood protection technology, floods were transformed from anticipated natural occurrences to unanticipated natural disasters. As expected, people wanted to prevent being surprised by a natural disaster. Because of this desire and due to advances in technology, responses to flooding have become increasingly sophisticated or aggressive. Initially people acted defensively cleaning out river channels and constructing dikes, levees, and floodways to halt and divert rising waters. Eventually, by damming and altering the channels, people began to change the very structures of the rivers. Damming was done not only for flood control, but also for irrigation water storage and hydro-power. People re-channeled the rivers to divert them around populous areas, often
straightening them and changing their widths, and they dredged the river bottoms, clearing out silt and other obstructions, to allow for more water flow to be contained in the riverbed. The philosophy has long been that “every drop of water that flows to the sea unused is wasted.” Therefore, flood controls must be aggressive so that no water is “wasted” on flooding.

The flood of the Boise River in 1943 reaffirmed the correctness of this aggressive approach by providing an example of technology, specifically Arrowrock Dam, triumphing over nature. Arrowrock withstood the deluge and the dam was not topped or breached. The structures damaged in this flood were all defensive flood controls, such as levees. Therefore, the flood of 1943 was a triumph for Arrowrock and aggressive flood controls, but still proof that the river was not completely under human control.

Idahoans did not enjoy this lack of control and this caused them to look to ever more aggressive solutions to regain control and prevent future disasters, including increasing the capacity of the under-construction Anderson Ranch Dam and Reservoir and eventually constructing the Lucky Peak Dam and Reservoir in 1955. Boiseans refused to believe that they could not attain full mastery of the Boise River and thus, nature itself. The belief that they were in charge of their environment was deeply rooted by the 1940s. They believed that such disasters must and could be prevented through further control over the Boise River.

Regardless of the human controls (dams, levees, and diversion features), rivers will take their own courses; they will spill over banks, levees, and dams and surge forth to an outlet. Human reactions to this natural willfulness have historically been to further restrain and control the rivers. But, because memories of disaster tend to be short, these grand schemes of river control are often never realized. More often the restraints and controls that are carried forward are quick fixes, which can lead to more flooding. Hastily built levees and dikes are easily overcome by floodwaters and simply add more obstructions to the river. Additionally, their construction often involves draining wetlands and other actions that are damaging to the environment. When wetlands are drained or filled, the river system is deprived of its “antidote to floods.” The other problem is that humans, albeit unwittingly, add to the devastation of floods. People do not realize that they play a role in fomenting disaster by crowding the river with water works, homes, bridges, and farms. A developed floodplain means more water displacement during any high water period. This often results in a flood disaster. It is vital to remember that “nature developed the flood plains as a safety device” and every obstruction we place in a river, be it a levee, a dam or a bridge raises the water level behind the obstruction and therefore the potential for destructive flood levels. More planning resulting in less floodplain development is necessary and we need to learn to give the rivers space for our own health and the health of our rivers.

Controlling flooding has effects on the natural environment that may not be immediately visible. One such effect is on cottonwood trees – a native of many Western riparian areas, including the Boise River. This species requires regular flooding to produce new trees. Cottonwoods release “cotton” puffs during late spring - peak flood season - when
the river waters have temporarily surged over their banks onto the floodplain. The puffs containing the seeds are then deposited onto wet fine-grained silt, courtesy of the overflowing river, where they can sprout. But, not many survive to sprout and it is nearly impossible for any cottonwoods to survive without the wet silt provided by seasonal river flooding. So, by controlling flooding we are effectively wiping out the scenic cottonwood. There are still large stands of cottonwood along the Boise River, but many of them are nearing the end of their lives and new stands are not being produced to replace them as before. According to Mary Manning, “Cottonwoods have lost the mechanism for regeneration.” When the older stands of cottonwood are cut to make way for housing and farming, the production of more trees is also affected because the older stands provide areas of slow moving flood waters in which the seeds can pause long enough to set down roots. Creating permanently flooded areas such as reservoirs does not help either as these areas drown the trees or the trees are removed to make way for the reservoir.

In 1967 the U.S. Army Corps of Engineers produced a report on the Boise River and four tributaries for the City of Boise and Ada County. The intent of the report was to acquaint the local community and agencies with existing flood problems and to provide data to assist in decision-making regarding the best land use for areas subject to flooding. One section of the report specifically dealt with the obstructions to flood flows on the Boise River. Obstructions such as levees can increase the velocity of floodwaters by narrowing the channel. Along the Boise River “many canals and ditches throughout the floodplain are constructed with raised banks which tend to confine and impound flood overflows.” The force of the swift waters then causes increased damage to anything in its path. Other types of obstructions, such as vegetation growth in the channel, reduce the efficiency of the channel and cause the flood waters to spread out further. Additionally on the Boise River, “several irrigation diversions are accomplished by temporary dams, some of which are not removed following their use.” Years of low water had left the people living and working along the Boise River apathetic about flood dangers and even those flood protection measures they had taken were a factor in increasing the dangers of a flood disaster, instead of a beneficial overflow. Boiseans had a history of simultaneously ignoring and trying to harness the river they depended upon.

The history of the “taming” of the Boise River is undeniably tied to the advent of large-scale irrigation and flood control projects in southern Idaho that began in the early 1900s. In this era of expanding federal government control, Idaho enjoyed a lion’s share of federally funded irrigation projects designed to make the desert bloom. Many of these projects involved putting Boise River waters to “beneficial use” – that is, profitable use. Idaho’s extensive involvement with the federal government began with the Carey Act of 1894. The Act provided up to one million acres of federal land (free of charge) to any western state willing to supervise the acreage. Individuals could then purchase parcels between 40 and 160 acres from the state for the fairly nominal fee of 50 cents per acre. Private ditch construction companies sold water rights to the settlers and it was stipulated that each settler had to bring at least 40 acres under irrigated cultivation within 10 years. Seven months after the Carey Act was signed into law, the
Idaho Legislature created the Office of the State Engineer to manage the implementation of the Act in Idaho. The Office of the State Engineer was the forerunner of the current Idaho Department of Water Resources.18 Idaho benefited from the Carey Act more than any other western state, with almost 60 percent of the total Carey Act lands being located in Idaho.19 The Carey Act was responsible for numerous small-scale irrigation projects in Idaho.

However, even more significant for southern Idaho was the National Reclamation Act, or Newlands Act, of 1902. This Act provided for the establishment of the Reclamation Service (renamed the United States Bureau of Reclamation in 1923) and pledged federal monies to build dams, reservoirs, canals, and associated facilities for large-scale irrigation projects, such as the Payette-Boise Project (the name was later changed to the Boise Project). Water users were to repay the costs of the irrigation projects thereby creating a revolving “reclamation fund” to expand irrigation in the West.20

Field investigations were first conducted for the Boise Project in 1902 by the United States Geological Survey in cooperation with the state to locate potential reservoir sites near the headwaters of the main Boise River and at Deer Flat. Canal routes were also investigated. After the Newlands Act was past in June 1902 field work was supervised by the infant Reclamation Service whose board of engineers determined that the proposed Boise Project was physically and economically feasible. Before the plan could be presented to the Secretary of the Interior for approval, all the potential water users and canal owners had to form a single united water users’ organization, capable of assisting in the coordination of all the existing canals and irrigation districts for the project.21 The water users and canal owners achieved this by forming the Payette-Boise Water Users Association and by incorporating the privately-owned New York Canal and another large canal owned by the Idaho-Iowa Lateral and Reservoir Company into the plan. The cooperative plan was presented to the Secretary of the Interior who stamped it with his approval and allocated $1.3 million for construction on March 27, 1905. The Boise Project was on. The project initially called for a diversion dam above Boise to divert water into a canal, which would flow into Indian Creek. The desert-reclaiming water would travel down a segment of Indian Creek before being diverted into a second canal for the remainder of its journey to a reservoir to be constructed at Deer Flat (now Lake Lowell) on the outskirts of Caldwell. Water at Deer Flat would be distributed to lands within the project boundary via a canal and extensive lateral system. Provisions in the plan also allowed for the eventual construction of a reservoir on the headwaters of the main Boise River.

The Reclamation Service chose a site approximately seven miles above Boise for the diversion dam. Construction on the dam and diversion works began in March 1906, but was not completed until October 1908 due to high water years and organizational delays – the contractor went through 19 superintendents of construction. The work of widening New York Canal from the river to Indian Creek and constructing a similar structure from Indian Creek to Deer Flat began a month before dam construction, in February 1906. When this canal configuration was completed it ran for 40 miles from the Diversion Dam southwest to Deer Flat. All portions of the canal and reservoir work...
were completed by January 1909, making the entire system operational. A crowd of several thousand people witnessed as the first waters flowed from Diversion Dam en route to Deer Flat Reservoir on February 22, 1909. Unique features of Diversion Dam included a log way and the addition of a fish ladder and mechanisms for hydropower production a few years after the dam’s completion. The Reclamation Service put Diversion Dam’s power to work during construction of the next phase of the Boise Project – Arrowrock Dam.

The Boise Project’s provision for future development of a reservoir near the headwaters of the Boise River allowed for the construction of Arrowrock Dam. The process of constructing Arrowrock Dam itself sounds like a Progressive Utopian dream. Over one million tons of gleaming white concrete were used on this massive structure that dwarfed New York City skyscrapers. A tidy little government town of over one thousand, complete with a post office, a school, a hospital, a store, a YMCA-sponsored social hall, and over 150 bunkhouses and cottages grew up behind the dam site. Some 200 families lived at Arrowrock, many for four years – the duration of construction. Among these was the Wood family. Holda Wood stated in her oral history interview, “we moved up to Arrowrock…and Dad worked on the dam until it was almost finished.”

The Boise & Arrowrock Railroad made regular trips from “Barberton,” approximately five miles east of Boise City, up the treacherous canyon to the site a further twelve miles or so above the City. Any “enlightened” person could see that this dam meant progress and domination over the river. Construction began in 1911 and was completed by 1915 when water first filled the reservoir. When the “big dam” was completed it was described as having “beautiful, massive lines…with a wall of white concrete.” People saw the dam was seen as more beautiful than a natural river canyon because it brought with it order and control, clean lines, and massive structure. Towering at very nearly 350 feet, Arrowrock brought international recognition to Idaho in 1915 as the tallest concrete dam in the world, but then in 1934 a dam in Sweden surpassed it. Though originally constructed with irrigation in mind, Arrowrock remained the prime flood control structure on the Boise River until Anderson Ranch and Lucky Peak were completed in the 1950s. Work at Anderson Ranch Dam and Reservoir had begun in 1941, but this project was not completed until 1950 due to World War II labor and materials shortages. Both Anderson Ranch and Lucky Peak were designed as dual-purpose dams and reservoirs - for flood control and irrigation water storage. Now they are also valued for recreation. When the flood of 1943 (the largest flood disaster since 1897) hit, Arrowrock was hailed as a great engineering success because it held back a portion of the deluge. If not for the internationally famous Arrowrock, over 25,000 cubic feet per second (cfs) would have swamped Boise and communities to the west, instead of the 21,000 cfs that did burst forth.

The Boise Project truly was a feat of engineering that would eventually allow over 390,000 acres to be irrigated in the unnaturally blooming desert of southwestern Idaho and eastern Oregon. The amazing feats of hydro-engineering that were so revered at this time in Western American history are significant in that they were all seen as civilizing nature. More importantly these feats functioned as wringers squeezing all possible water resources out of the land. Even those most vested in these projects
recognized the unnatural expectations being placed on the desert. Though she is referencing the present day, Sheri Chapman of the Idaho Water Users Association summarized nicely, "From nature’s perspective it is all wrong. Those crops [lush green fields of alfalfa, grain, corn, potatoes, and beets] are not supposed to be there." In Donald Worster's book *Rivers of Empire* he explores the lofty expectations Westerners have of the desert. We crave green cropland and steadily flowing water wherever we go and in the western desert climates, this means setting ourselves and the land up for exhaustion and shortages. When the carrying capacity of the land is pushed to the limit, the results are often disastrous resulting in crop failures, financial ruin, and the death of communities. These huge irrigation projects constructed in the desert forced people to depend too heavily upon human constructs. No regard was given to the delicate natural balance of a desert ecology.

The Boise Project - the first major water control project on the Boise River - was constructed for irrigation purposes to forcefully increase the carrying capacity of the desert and to allow for some measure of flood control to increase the amount of "productive" ground in the floodplain. After 1941 development of water control on the Boise River would be multi-purpose for flood control, irrigation, and power. Multi-purpose projects proved tricky for the two main federal agencies that dealt with water resources in the West – the Bureau of Reclamation under the Department of the Interior and the U.S. Army Corps of Engineers, part of the War Department.

Most of the confusion and overlap began with the Flood Control Act approved by President Roosevelt on July 24, 1936. This was the first general flood control bill to provide for flood relief throughout the country and to recognize that flood control "is a proper activity of the Federal Government." This Act made possible "the hundreds of reservoir, levee, and channelization projects that…have literally changed the face of the nation." The Act also served to establish the Corps' domain over flood control projects. Section 2 states, "hereafter, Federal investigations and improvements of rivers and other waterways for flood control and allied purposes shall be under the jurisdiction of and shall be prosecuted by the War Department." Prior to this Act the role of the Corps had been limited to "investigations and improvements of rivers, harbors and other [navigable] waterways," leaving most dam building under the jurisdiction of the Bureau of Reclamation. Now the two agencies were constantly stepping on each others’ toes, especially on multi-purpose projects. However, this bickering did not stop the progression of further controls and further taming of the Boise River.

Before the "complete taming" of the Boise River culminating with Lucky Peak, residents recalled a river that flooded rather predictably each spring, usually in April, and then partially dried up each fall. "It would flood Garden City every year out here where the gardens [were]." Residents remembered a forgotten river, disrespected by its human neighbors who regularly dumped raw sewage into its waters, "The Boise River was not treated very well in those days. It became a live sewage stream." Holda Wood also recalled that people were running sewers straight into the river during the first half of the 20th century.
The Boise area had more or less been steadily growing since the 1890s and by 1940 Boise had a population of 26,130 people. The 1940s were a time of big government in America and particularly in Idaho. Federal recovery programs following the Depression made the Boise area even more desirable to refugees from dust-bowl communities and this caused Boise to gain residents even though farming communities remained economically depressed. Another key to Boise's success was the continued development of cultural institutions, particularly the opening of Boise Junior College (later Boise State University) in 1932, which allowed for higher education close to home – a necessity in a time when most potential students could ill afford to attend college elsewhere. Boise Junior College would have a profound effect on the Boise River as its eventual permanent location was constructed where the river used to flow. But, the channel was straightened and filled in with garbage and the college was built upon that “ashy” foundation. The fact that heaps of garbage were piled in the old river meander is also telling of how Boiseans had failed to protect their river from pollution. Additional disregard for the Boise River is evident in the practices of the several food processing plants that grew up along its banks. These plants used to habitually dump untreated wastes, including animal byproducts, directly into the ailing waters. The high-quality river gravels of the Boise River also attracted extraction operations that mined the floodplain for the rock. As these gravel pit operations churned up the riverbed and the surrounding floodplain they became a major contributor to the siltation of the river. So, leading up to the flood of 1943, the Boise River was still a bit wild, and though it was not particularly well cared for, it had been tamed enough with one large dam, straightening, and filling of the floodplain to calm fears or perhaps just erase memories of disastrous flooding.

At the time of the 1943 flood, protection structures on the Boise River consisted of Arrowrock and the small Diversion Dam. These structures were not originally designed for flood control; but modern engineering marvel that it was, Arrowrock that played a key role in lessening the effects of the 1943 flood disaster. The total carrying capacity for Arrowrock Reservoir in 1943 was 286,600 acre-feet and the Diversion Dam, as its name suggests, was capable of diverting about 2,815 cfs of water into the concrete river – the New York Canal. However, there was a limit to the amount of water the canal could carry to Lake Lowell. The total carrying capacity of Lake Lowell (the former Deer Flat Reservoir) was 177,000 acre-feet. Despite these protections, the flood of 1943 still managed to send water at a rate of 20,000 to 21,000 cfs barreling into Boise and surrounding communities along the river to the west. Most of the damage was to floodplain farms, but several new land uses that had crowded into the floodplain were also affected – a bar off of Capital Boulevard, industrial buildings, the Plantation Golf Course, the Old Soldiers Home at Veterans Park, and several bridges. Bridges were the most costly repairs following the flooding in the spring of 1943 and they also constituted the only substantial structural damage within Boise City.

The official cause of the flood was rapid snowmelt brought on by unusually warm April weather and exacerbated by light rains. However, much of what made the flood of 1943 a documented disaster was human produced – the build up of the floodplain, channel blockage, and irrigation features. “The April 1943 runoff produced the third
highest actual flood of record despite significant reduction effected by Arrowrock Reservoir."51 The flood of 1943 was the most devastating since 1897. Anna McAdams, long time Boise resident, described that flood as “a great big lake clear from here [North 31st Street], clear down to Garden City.” She went on to describe the floodwaters near Eagle west of Boise, “…down by Eagle they were really flooded…they were just surrounded with water. I don’t know how they even got out.”52

Emergency procedures had been set up about two weeks before the flooding began and so no lives were lost as a direct result of the flood; however, property and crop damage were extensive. Near the end of March, Idaho Governor C.A. Bottolfsen appointed a special state flood control committee to deal with possible heavy snowmelt throughout the state.53 The Boise River was identified as a hazardous area and plans were made accordingly with the help of Boise River Watermaster William Welsh, Ada County emergency agencies, local citizens, and Gowen Field soldiers.54 The Red Cross and Ada County assisted in evacuating people residing on the south side of the river. These people were moved to the Fairgrounds (located at Fairview and Orchard Streets in 1943).55 Even with these procedures in place the flood caused extensive damage.

Early damage reports underestimated the damages and appeared too hasty for Idaho Senator Henry Dworshak who asked the Corps’ Portland District Engineer Oliver Lewis to perform a damage survey. The Corps summarized the damages as investigated in the survey in a January 1946 report entitled “Review of Survey Report Boise River, Idaho with a View to Control of Floods.” Table 1 shows a breakdown of those damages as assessed by the Corps. None of the damage reports mention the loss of shantytown homes along the river, but this type of undocumented damage is an important effect of flooding, especially to those who lost all they had. Several of those interviewed for the Idaho Oral History Center mentioned the destitute setting up cardboard homes along the river channel.56 These people were all wiped out, and the flood destroyed what little they had.57

In some cases estimates of damages provided by the Corps were lower than those of state and county officials. State and county highway officials reported bridge and road repair costs at over $200,000, quite a bit higher than the Corps’ estimate of $76,040 (see Table 1).
<table>
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<th>Type of Damage</th>
<th>Amount in 1943 Dollars</th>
<th>Percent of Total Damage</th>
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</thead>
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<tr>
<td>Agriculture</td>
<td>649,710</td>
<td>65.1</td>
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<tr>
<td>Urban/Suburban</td>
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<td>18,640</td>
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<td>Roads/Bridges</td>
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<td>Levees</td>
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<td><strong>TOTAL</strong></td>
<td><strong>997,350</strong></td>
<td><strong>99.9</strong></td>
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</tbody>
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*Such as loss of profit by dairies when trucks were forced to use longer routes while 11 of the 14 bridges across the Boise River were closed.*

(Source: Stacy, 15)

When all was said and done, it was the farmers throughout the Boise River Valley who incurred most of the nearly one million dollars in damages. Much of the damage to crops stemmed from the risky farming techniques that were being implemented on the floodplain as a result of World War II pressures. The onset of World War II was a catalyst for more government involvement in most aspects of the lives of Idahoans. Idaho had a high rate of volunteers for the war effort – men serving as soldiers and women working in various capacities related to the war effort. By 1943 many of the young men and women who would normally be working on their family farms had left the Boise area for military service. Idaho contributed more than its share of manpower to the war effort. In the uniformed branches alone, Idaho provided 60,000 young men and women or 11 percent of its population - more than the national average. Additionally, many young Boiseans decided to leave Idaho and move to Seattle or Portland to work in the defense industries there. Farm families were hit hard by the drain of young people leaving for the war effort as these families required the help their sons and daughters to make the farms productive. But, this was a time of faith in the government; people were willing to undergo hardships if it meant that they could assist their country in a time of profound need. As part of the war effort Boise River Valley farmers were encouraged by the federal government financially, and morally persuaded by their patriotic sentiments, to plant to the full extent of their lands including row cropping the floodplains which were normally used for pasture. Experience warned the farmers this was a bad idea. They had learned to use their floodplain lands for pasture, planting trees, grasses, and hardy shrubs to withstand the inevitable floodwaters. However, the prospect of helping the war effort and the extra money were heady incentives and row cropping did yield bumper crops and excellent profits, until the spring of 1943 when a 100-year flood of the Boise River struck.
When the floodwaters subsided in late June, Idahoans remained proud of their Progressive Boise Project infrastructure- technology had calmed the angry waters to some degree. No one was killed and structural damage in towns was relatively minor. Some farmers would argue that damages were catastrophic, but Arrowrock had preformed beautifully, especially for a water control feature designed for irrigation, not flood control. Still, the people demanded further control and they were quick to blame each other. Federal bureaucrats blamed farmers for clogged diversion features. Farmers blamed the federal government for allowing mining tailings to be washed into the river decades before. Most people realized that a warm spring leading to rapid snowmelt was to blame for the high waters, but they assumed there must be ways to stay in the floodplain and protect themselves entirely from flooding. Essentially, they wanted to stop all flooding – a most unnatural state of affairs. Idahoans assumed that the federal government would pay for the flood damage by repairing levees, cleaning the river channel of debris, and by further channeling the river to lessen future flood effects.

Partly because the 1940s were a decade of domination over all things “savage” or natural, the Boise River had already been partly “tamed” through channelization to straighten the channel, landscaping to make the banks look “natural,” and damming primarily to supply much needed irrigation water. All of these shackles on the river affected the outcome of the flood. People of that era had a mind-set that government, with its highly trained engineers, had the power, the right, and the know-how to fix natural disasters. Gleaming towers of concrete would save them from any floodwaters. But, the reality was that immediately following the 1943 flood of the Boise River, the federal government weighed the options and decided to patch existing damaged levees and add a few more in areas where the levees had completely washed away. The river channel was once again cleaned out and straightened a bit, but the results of the flood were soon forgotten and no concrete solutions to the issue of flood control on the Boise River were implemented until over a decade later when Lucky Peak Dam came on line. Floodplain land use planning was scarcely mentioned at all until many decades later and it remains a contentious issue. The attitudes regarding the mammoth structures, so proudly erected during the height of the “Reclamation Era” in the first half of the 20th century, began to change after Lucky Peak was built. Instead of proclaiming dams unilaterally as saviors during flooding, many blamed them for siltation and for causing flooding due to the hubris of the government engineers. That anti-government feeling was reinforced by new ideas about the relationship between nature and humankind emerging with the nascent environmental movement.

In the 1940s people were convinced that the correct course of action to curtail the threat of catastrophic flooding was to control nature for “beneficial use;” to tame it and incidentally to harness its power. This cultural attitude toward the environment in general was pervasive among Euroamerican peoples who immigrated to the American West in the mid-1800s – most Idahoans. They saw the often-harsh environment as something they must fight and overcome. They came to believe they should and could control nature for their own protection and purposes. It is reasonable to want to protect
life and property, but it is often not beneficial to the environment and it is certainly not always possible.

Despite technological advances and engineering know-how we can still be beat by nature. It is important to learn to live with rivers in a way that allows them to take their natural course to some degree, lest we forget that rivers have agency. It is in the nature of a river to overflow its banks in a cyclical manner and if rivers must break through human-built barriers to do this, they will. Rivers are simply trying to reclaim their floodplains. Not building on floodplains can greatly reduce the damages and risks of flooding because floodplains are a part of the river — the two cannot be separated for long. In our attempts to overcome the natural courses of rivers, Westerners are in eminent danger or losing something that cannot be replicated with concrete. Aldo Leopold once noted, “There were once men capable of inhabiting a river without disrupting the harmony of its life.” Residents of the Boise River Valley would greatly benefit from becoming these types of “men.” Particularly because the Boise area is currently the fourth fastest growing in the United States, we desperately need land use planning in the floodplain so they do not become even more crowded and impinge further on the river. City and county planners are now starting down this road, but the road is long and filled with soggy detours.

Endnotes


2 Early conservation groups of the 1950s, such as the Conservation Foundation understood that “flood control does not mean the elimination of floods. At best it can provide only a certain amount of protection against over-bank flows.” See Luna B. Leopold and Thomas Maddock, Jr., The Flood Control Controversy, Big Dams, Little Dams, and Land Management, (New York: The Conservation Foundation, 1954), Preface, ix.

3 The definition of disaster used here is from Robert L. Kovach, Earth’s Fury: An Introduction to Natural Hazards and Disasters (Englewood Cliffs, New Jersey: Prentice Hall, 1995), 1.

4 This may be a bit of an exaggeration, but there is proof that humans have been using water for irrigation, particularly from rivers, for 9,000 years. It follows that they would have known of the dangers of flooding because even relatively small-scale flooding can easily destroy earthen irrigation works. See J.R. McNeill, Something New Under the Sun (New York: W.W. Norton & Company, 2000), 120.


8 Colbert E. Cushing and J. David Allan, Streams: Their Ecology and Life (San Diego, California: Academic Press, 2001), 89.

9 “Torrent Churns Over Arrowrock Spillway, Full Impact of Record Spring Flooding, 200 Families are Evacuated from Eagle Area,” Idaho Sunday Statesman, 18 April 1943, front page.


11 Steinberg, 102. Steinberg is quoting retired Colonel Edwin Decker, a former St. Louis USACE employee.

12 Kovach, 144-145.


16 Corps of Engineers, U.S. Army, Walla Walla, Washington District, Flood Plain Information Boise, Idaho and Vicinity, Boise River and Northside Tributaries, (Prepared for the City of Boise and Ada County, October 1967), 15. Another example would be Barber dam and mill pond. These were simply abandoned.

17 F. Ross Peterson, “Confronting the Desert,” Snake The Plain and its People, Edited by Todd Shallat (Boise, Idaho: Boise State University, 1995), 149-152. Entrepreneurs who owned the ditch construction companies were not guaranteed anything. They contracted with the state government to build essential irrigation structures and then if they were lucky they could sell water rights to settlers for a profit. See Hugh Lovin, “How Not to Run a Carey Act Project – The Salmon Falls Creek Tract, 1904-1922,” Idaho Yesterdays (1986): Vol. 30(3), 9-24.


22 Simonds, 6.

23 An interesting antidote is the origins of the name Arrowrock. Most sources agree that it derives from the “big cliff of jagged rock” located on one side of the river and now partially obscured by the dam. The discrepancy
lies in the reasons behind so many arrow points being discovered in that area. Some say it is a spot where warring American Indian tribes slung arrows across the river at each other and others say the Indians would shoot arrows into the granite cliff to indicate the direction they were traveling to others tribal members. Neither theory seems terribly plausible. Most likely the area was an American Indian tool manufacturing site. See “Arrowrock Highest Dam in World,” Capital News, 26 September 1915, sec. II, front page and “The Arrowrock Dam,” From Idaho State Historical Library Vertical Files: Dams, Arrowrock, 1908-1920, dated 1915.

24 If the amount of concrete used for Arrowrock was poured into a column 10 feet square, it would reach a height of 29.7 miles! Visual comparisons were also made between the dam and the Flatiron building in New York, See “Description,” From Idaho Historical Society vertical file Dams, Arrowrock, 1908-1920, no date.

25 Holda Wood interview, 1.

26 “The Arrowrock Dam,” 1915. The rail station for the Boise & Arrowrock Railroad was actually just a field near present day Barber Park and for a portion of the ride railcars had to be winched across an unfinished bridge while the passengers walked. This railroad was unique in that it was open to the public, but federally owned and operated. See Simonds, 7.


28 Peterson, 153.

29 See Susan M. Stacy, When the River Rises: Flood Control on the Boise River 1943-1985, Program on Environment and Behavior Special Publication No. 27 (University of Colorado and College of Social Science and Public Affairs, Boise State University, 1993), 16, 22-29 for a more in depth discussion of the compromises that lead to water control features on the Boise River becoming multi-purpose enterprises.

30 During WW II many large-scale government funded projects were halted so as not to deplete precious supplies and labor.

31 Cubic feet per second is a measure of the amount of water flowing past a given spot in one second. This definition is derived from Stacy, xviii. Corps of Engineers, U.S. Army, Walla Walla, Washington District, 17.


33 Chapman, 1.

34 Worster, 272, 334-335.

35 Several others followed, including the Flood Control Act of 1946 signed into law by President Truman on July 24th. This 1946 Act authorized flood control projects throughout the U.S. valued in excess of $900 million. An amendment to this Act authorized construction of Lucky Peak. See Stacy, 36. Flood Control Act, 1936, 74th Congress, Session II, Chs. 651, 688, June 20, 22, 1936, Preface.


37 Flood Control Act, 1936. The U.S. Army Corps of Engineers is part of the War Department. This Act states that the Corps would be in charge of the planning, construction, and management of all flood control projects throughout the nation.

Stanley Schmidt, Interviewed by Nancy Butler. Boise: Idaho Oral History Center, January 28, 1987 and Keith Ricks, Interviewed by Nancy Butler. Boise: Idaho Oral History Center, February 23, 1987. Both men recalled seasonal flooding of the Boise River from the 1920s, 30s and 40s. Ricks preferred to live up on the Bench to avoid any flooding. He recalled that most springs they would get too much water for Arrowrock Dam, the only dam with a storage reservoir in existence during that time and the smallest of the three – both Anderson Ranch and Lucky Peak are significantly larger in their storage capacity.

Stanley Schmidt interview, 1.

Keith Ricks interview, 4.

Holda Wood interview, 7.


“Boise River, Once Moving Through Two Channels Near City, was Fearsome Stream in Flood Season,” Idaho Daily Statesman, 3 April 1949, Statesman’s Pioneer Years Section. Portions of the area currently occupied by BSU were once used as a city dump.

Stacy, 11.

Acre-foot is a measurement of water volume – one acre-foot is equal to one acre of land covered with one foot of water. This definition is adapted from Stacy, xviii.

There is some discrepancy between the figure of 20,000 cfs used by Stacy and the figure of 21,000 cfs used in the Corps 1967 report. See footnote number 37 in Stacy, 14.

Stacy, 14-16.


Corps of Engineers, U.S. Army, Walla Walla, Washington District, 16. Records of river stages and discharges on the Boise River have been maintained since 1895. Flood flows, including peak discharges, before that time were strictly estimates.


“River Mangles Eagle Bridge: County Closes Span as Waters Hack at Weakened Pier,” Idaho Daily Statesman, 3 April 1943, front page, 5.


See Keith Ricks interview, 9-10 and Anna McAdams interview, 1.

See Steinberg for more on the idea of the poor bearing the brunt of “unnatural natural” disasters.

Stacy, 16.

60 Stacy, 11.

61 Steinberg clarifies that a 100-year flood is a flood with a 1% chance of occurring in any given year. It does not mean that the flood is likely to happen only every 100 years, Steinberg, 104. One can hardly blame the farmers for planting foolishly. In Idaho crop prices had jumped to seven times their 1932 levels. In 1943 crop values were $79.52 per acre, up nearly 50% from $54.27 per acre in 1942. See Judith Austin, “Agricultural History of Boise Valley, 1920-1945,” *Idaho State Historical Society Reference Series*, No. 176, (Boise, Idaho: Idaho State Historical Society Publications, 1974), 4.

62 Stacy, 18-19.


64 This was confirmed by former Garden City Planner and current Star City Planning and Zoning Administrator, Craig Eckles, personal communication 17 November 2004.


67 By “men” I mean people. That includes women!

68 U.S. Army Corps of Engineers Civil Works Program, Congressional Submission Fiscal Year 2003, Northwestern Division, February 2002, 4. This short report very briefly mentions the Boise area’s growth rate.
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Flood Control Act, 1936, 74th Congress, Session II, Chs. 651, 688, June 20, 22, 1936.


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