BAILEY'S DAM

A.D. 1864 –

Porter's fleet passing through Colonel Bailey's Dam above Alexandria, May 1864. From Frank Leslie's Illustrated Newspaper, July 16, 1864. Courtesy of the State Library of Louisiana. Sometimes, an archaeological site reveals how a powerful idea was put into action. One example in central Louisiana is a Civil War site called Bailey's Dam. Low water in the Red River at Alexandria trapped the Union naval squadron above rocky rapids. At first, all hope of an escape seemed lost.

Then, Union officer Joseph Bailey designed a dam to raise the level of the river, using materials that were nearby. Remarkably, the dam worked, and the boats passed over the rapids and on to safety. The dam's story is one of teamwork, courage and creativity.



Time and Place

Union soldiers built Bailey's Dam in Rapides Parish, near the city of Alexandria. The dam is on the Red River, which flows just east of the city. The Red River runs for over 1,200 miles from its source in Texas, giving a route across Louisiana. In places, the bottom of the river near Alexandria has rocky outcrops. During the Civil War, the rocks were a big hazard for boats.

The Red River played a relatively minor role during the Civil War, but it was the route of the Union's failed Red River Campaign. The goal of the campaign was to go from the Mississippi River to Shreveport, but it never got that far. After the Battle of Mansfield, the Union army and navy retreated. As they headed south, the water level in the Red River dropped. The river was so low that the Union fleet could not pass over the rocks at Alexandria. Bailey's Dam raised the water level in the Red River, letting Union boats escape.

Bailey's Dam was actually a series of small dams that worked together. The design was very unusual, and the dam played a key role in history. For these reasons, it was added to the National Register of Historic Places in 1976. Archaeologists studied the remains of the dam in the 1980s. They learned details about the construction that were not in historical drawings.



(Below) Illustration of the rapids. Sandstone and siltstone outcrops on the river's floor formed the rapids near Alexandria. These outcrops were higher than other parts of the river bottom. They caused the river to flow quickly when it was low and also blocked boats from traveling over them. The water flowed from the north to the south. Detail from Map and Profile of the Red River Falls, Board of State Engineers, 1874. Courtesy of the State Library of Louisiana.



On to Battle

Major General Nathaniel P. Banks, of the Union army, led the Red River Campaign, which started in March of 1864. Rear Admiral David D. Porter led the campaign's navy. The official purpose of the mission was to gain control of Shreveport. This move would cut a link between Texas and the rest of the Confederacy and prevent the movement of men and supplies between them. It would also put valuable cotton that was stored in barns along the river in Union hands.

Admiral Porter was worried about the mission from the start. First, he was very critical of Banks' ability to lead. Banks had lost key battles in Virginia, which harmed his reputation. Second, Porter had noted that the Red River was too low, and he feared the mission was in danger. Despite his concerns, Porter's warning was dismissed. Banks received his orders, and the campaign began.

In 1863, Major General Banks had captured Port Hudson. This gave the Union access to the Mississippi and Red rivers. The first official act of the Red River Campaign was at Fort DeRussy, in Avoyelles Parish, on March 14, 1864. Union forces attacked the fort and quickly captured it. The next goal was to seize the city of Alexandria.

(Top) Union Major General Nathaniel P. Banks. Courtesy of the National Archives 111-BA-1528.

(Middle) Confederate Major General Richard Taylor. Courtesy of the Library of Congress, LC-B813-2113 B [P&P].

(Bottom) Union Rear Admiral David D. Porter. Courtesy of the National Archives NWDNS-111-B-1889.



The Union forces were encouraged by the victory and by the number of men in the combined army and navy. Confederate troops were scarce in central Louisiana. Major General Richard Taylor, who was in command there, needed backup. Most of his men had been sent away to Arkansas as reinforcements. He was down to only 6,000 soldiers. The Union, on the other hand, had nearly 30,000 men and 90 armed vessels.

Alexandria soon fell under Union control. Here, Union forces saw that the Red River was going to be trouble. The river dropped so low that the gunboats could not make it upriver over the rapids. The water level rose again, but Porter knew that the low water was not a good sign. Worse, Taylor knew he could defeat the Union army now if he had more soldiers. He anxiously awaited backup from Texas. Meanwhile, Union reinforcements arrived in Alexandria. Even though Banks and Porter had to leave men and boats behind to secure the city, they had a large force. By the time Union troops set out for their next target, Shreveport, Taylor's extra men also had arrived. Now he had nearly 11,000 soldiers facing Banks' 32,500 men.

(Below) Banks's army, in the advance on Shreveport, crossing Cane River, March 31. From Frank Leslie's Illustrated Newspaper, May 7, 1864, p. 108. Courtesy of the Library of Congress. LC-USZ62-111176.



Retreat!

When Banks and Porter left Alexandria and started toward Shreveport, Porter took only 12 gunboats and 30 transports. The river was still low in spots, which made travel slow. Banks led his troops along a narrow road far from the river. This meant that Banks and Porter could not support each other, which was a serious tactical error.

Banks' men were strung out for more than 20 miles along the road to Shreveport. Awaiting him near Mansfield on April 8 was Taylor's smaller, but more concentrated, army. Taylor seized his chance and attacked. Banks' soldiers, tired and panicked, fled back down the road chased by Taylor's cavalry. This Confederate victory marked the end of the Union advance toward Shreveport.



(Below) Rebel attack on our gun-boats in the Red River. Harper's Weekly May 14, 1864. Courtesy of the Library of Congress. LC-USZ62-117668.



The next day, Banks regrouped his army and repulsed Taylor's advance at Pleasant Hill, allowing Union forces to withdraw to Grand Ecore and rejoin the navy. Taylor's men withdrew, and Banks ordered a retreat to Grand Ecore. Then, both the Union army and navy headed to Alexandria. Along the way, Taylor's men fired on Banks' army and ambushed Porter's gunboats. The low waters of the Red River made it hard for the Union fleet to escape. The largest gunboat, the *Eastport*, hit a mine, and it sank. The Union was able to re-float it, but could not tow it to safety. The Union navy blew up the *Eastport* to keep the Confederates from capturing it. Back in Alexandria, Porter's worst fears came true. Ten of his gunboats became trapped above the rapids. Stuck in less than 4 feet of water, they could not move. The lightest boats in the fleet would need at least 7 feet of water to pass over the rapids. Things seemed hopeless. Supplies in Alexandria were low. The expedition was under attack by Confederates firing from nearby forests. Worse still, many of Banks' men were exhausted and had lost faith in his ability to lead them. Banks and Porter desperately needed a plan to get the boats moving again.

(Below) Repulse of the Rebels at Pleasant Hill, Louisiana. From Harper's Weekly, May 7, 1864. Courtesy of Edwin Adams Davis.



A Lumberman's Solution

Lieutenant Colonel Joseph Bailey, one of Banks' engineers, had an idea for getting past the rapids. He suggested building a dam from any materials they could find. Some of the men laughed at Bailey. After all, Bailey was not formally trained as an engineer. How was he to build a dam from scratch? However, Bailey had spent 20 years working as a lumberman on the frontier in Wisconsin. There, he mastered the craft of dam and bridge building. Without any other options, Banks gave Bailey command of his men. Nearly 3,000 soldiers began cutting down trees. Others searched for the materials that Bailey needed. Some went into the city and began stripping buildings of their wood and bricks. They worked day and night. Soldiers building the dam dodged enemy fire. Bailey was steadfast, though. He had a clear plan in mind and tirelessly directed the soldiers.



(Left) Joseph Bailey proposed a plan to build a dam to raise the river level. No one knew if the plan would succeed. The Confederate snipers hiding in the woods even watched in amusement. Tales about the dam traveled fast, no doubt an unusual piece of news in wartime. The dam even caught the interest of the citizens of Alexandria. Courtesy of the National Archives 111-BA-188.

(Top right) Building the Red River Dam. Courtesy of the Library of Congress LC-DIG-ppmsca-34043.

(Bottom right) Building the Red River Dam. Courtesy of the Library of Congress LC-DIG-ppmsca-34042.





Union forces built the main dam near the river's lower rapids. The dam had three parts that worked as a whole. These were 1) a tree dam on the east bank of the river, 2) a series of cribs (boxes) on the west bank, and 3) a section in the middle made of four sunken coal barges anchored to the dams. The barges filled a 150-foot gap between the tree dam and the crib dam. Together, these parts forced water into a central, rapidly flowing channel. While 28 military units helped build the dam, the majority of the work was done by three crews. The 29th Maine Volunteer Infantry Regiment worked on the east side of the river, closest to Pineville. Freed slaves in the 97th Regiment and the 99th Regiment of the United States Colored Troops (USCT) Infantry worked on the Alexandria side of the river.

SECTION OF TREE-DAM.



On the east side of the river, a Maine regiment cut down trees from nearby forests to build the tree dam. Like the cribs, soldiers weighed the tree dam down with stones and bricks. The diagram shows that the trees were placed with their tops going upstream and the trunks pointing downstream. During fieldwork, archaeologists found that the actual direction of the trees was opposite from that shown in the drawing. Still, the picture gives a good overview of a tree dam. Sketch of tree dam, which accompanied Colonel Bailey's report (U.S. War Department 1891-1895: Plate 53-3).



Two USCT regiments were instrumental in building the dam on the west bank of the river. This part was made of a row of boxes known as "cribs of stone." The picture shows that the boxes were filled with stone and held in place with iron bars. Historical accounts say that soldiers put bricks, stone and machinery in the dams. However, archaeologists found that they mainly used sand and mud in the crib dam and only placed brick and stone on the top. Sketch of crib dam, which accompanied Colonel Bailey's report (U.S. War Department 1891-1895: Plate 53-3).

Success!

Union soldiers started building the main dam on April 30, 1864. By May 6, the water had risen 4 feet. By May 8, the water had risen up 5 feet 4 inches. The dam was working! Hundreds gathered from the city to watch the spectacle. Four of the lighter vessels crossed the upper rapids at this time, and waited behind the dam. Yet, as the water level behind the dam rose, so too did the pressure on it.

The next day, the dam burst from the strain. Two of the four barges forming the middle section of the dam moved out of place, opening a hole. Water began gushing through. Seizing the opportunity, Porter ordered one of the four waiting boats to go through the

Porter's fleet passing the dam at Alexandria. From Harper's Pictorial History of the Civil War, *c1894. Courtesy of the Library of Congress LC-USZ62-39604.*

gap. Ten thousand spectators watched the gunboat *Lexington* steer toward the opening in the dam. The water was running wildly through the gap. Porter feared the *Lexington* would be destroyed. The gunboat struggled to maintain control.

To everyone's amazement, the ship made it through the dam and past the lower rapids. Onlookers cheered in awe. Bailey had succeeded! The three other waiting vessels also went through the gap before the water got too low. After more dam building at the upper rapids, the water rose again. The largest remaining gunboat, *Mound City*, ran the gap in the main dam on May 12. By the next day, all the gunboats had passed over the rapids.



Union soldiers left Alexandria exhausted and beaten. Yet, they knew they had also done something amazing. Congress honored Bailey with a gold medal and a promotion for his service. Porter personally gave Bailey a gold inlaid sword. The other naval officers presented Bailey with a silver punch bowl. Despite his recognition, however, Bailey was not the only hero of the Red River Campaign. The fleet would have surely been lost without the teamwork and courage of all of the men of the expedition.

(Below) General Joseph Bailey's silver punch bowl and sword. Photo from the Wisconsin Historical Society, WHS-4242.



Explore the Site

After the Union fleet left the area, what happened to Bailey's Dam? Archaeologists found that much of it was still in place 120 years later. They studied the lower (main) dam in 1984, as part of the Red River Waterway Project. That big federal project stabilized the banks of the Red River. It also built locks and dams to raise the water level for boat traffic. This led to Bailey's Dam being permanently underwater.

Before that construction began, important historical resources like Bailey's Dam were recorded. By law, federal agencies consider how their projects may affect historic properties. That process led to the study of Bailey's Dam.

While the river level was low, researchers drew maps, took pictures, and excavated some of the dam. The U.S. Army Corps of Engineers, Vicksburg District, sponsored the work. The photographs and Historic American Engineering Record drawings are now at the U.S. Library of Congress. You can explore some of them in the following pages!





(Left) Detail from Map and Profile of the Red River Falls, Board of State Engineers, 1874. Courtesy of the State Library of Louisiana.

Crib Dam

Archaeologists exposed the remains of the cribs at the lower (main) dam. The historical drawing showed the cribs as built of logs and filled with stones. Historical accounts said that the cribs were constructed of lumber from buildings and that machinery, stone and brick filled them. The archaeologists confirmed the written records that said the framework of the cribs was hewn timbers from buildings. However, archaeology showed that the cribs had been filled with clayey sand, topped with stones and brick rubble. Archaeologists found an iron sugar kettle fragment in the crib area mixed among stone and brick pieces. The broken kettle may have been in, or on, a crib.



(Above) Closeup view of exposed crib timbers from crib section of Lower Bailey's Dam, facing northeast. Courtesy of the Library of Congress: HAER LA, 40-ALEX. V,2-16.





(Top) Closeup view of sandstone boulder concentration in crib section of Lower Bailey's Dam, facing north. Courtesy of the Library of Congress: HAER LA, 40-ALEX. V,2-17.

(Bottom) View of crib section of Lower Bailey's Dam, facing northwest. Courtesy of the Library of Congress: HAER LA, 40-ALEX. V,2-21.

Tree Dam

A 100-foot-long part of the tree dam at the lower (main) dam was clearly visible during times of low water in the 1980s. Archaeologists recorded parts of 146 logs that were above the water level, and others were just beneath the water. The logs were very well preserved. Brick and stone rubble was found piled on the upstream ends of the logs.

Archaeologists dug a trench about 5 feet wide and 23 feet long to learn more about the tree dam. They found that the tree limbs had been cut off, unlike those in the historical picture. By observing the knots on the tree trunks, archaeologists could tell that many of the trees were positioned with their tops downstream. That was opposite of the design in the historical illustration. The tops of the trunks had been shaped into a point. Archaeologists found sand and mud between the logs, and brick and stone on top of them. (Top Right) Archaeologist drawing a map of logs uncovered during the tree dam excavations. Courtesy of Coastal Environments, Inc.

(Lower Right) Closeup view of logs exposed in tree dam section of Lower Bailey's Dam, facing southwest. Courtesy of the Library of Congress: HAER LA, 40-ALEX. V,2-13.





(Left) Tree dam section of Lower Bailey's Dam. Third layer exposed with excavator perched on third log layer, facing northwest. Courtesy of the Library of Congress: HAER LA, 40-ALEX. V,2-19.



Upper Dam

In the late 1800s, the U.S. Army Corps of Engineers removed the rocks forming the upper rapids to improve navigation. Later, the channel of the river narrowed in that area. To find out if any traces of the upper dam remained, researchers studied the area using side-scan sonar. That device was pulled by a boat. As the boat traveled, the sonar bounced sound off the river bottom and recorded a picture of the return signal. Historical documents showed that three small dams had been at the upper rapids. The sonar survey confirmed that a part of one of the crib dams is still intact. However, there was no evidence of the other two dams, suggesting that they are no longer in place.

It takes special training to interpret a side-scan sonar image! This one shows the pile of rubble that remains where a crib dam was near the upper rapids. Courtesy of the U.S. Army Corps of Engineers, Waterways Experiment Station, CERC-85-9.



Artifacts

Most people probably do not think of pieces of bricks, bottles and wood as artifacts. Yet, these are precisely the sorts of things that can help archaeologists better understand historic sites like Bailey's Dam. Most of the things archaeologists have found at the site support written or illustrated accounts of how the dam was built. Yet, some of the objects paint a more detailed picture of the past.



Brick and Stone

According to the historical drawing, stone was used to fill Bailey's "cribs of stone." However, archaeologists found that clay and sand were actually used to fill the cribs. Soldiers seem to have simply packed rocks and brick on top of the cribs. Archaeologists found both rock and brick in the crib area. The rock at the site could have been in the river naturally. However, only people could have put the bricks there. The bricks used in the crib dam came from buildings in Alexandria.



Ceramic and Glass

Researchers found some Civil War-era ceramic and glass fragments on the banks of the river. Archaeologists found a stoneware jug fragment (A), and porcelain teacups (B and C). One of them seems to have been for a child or perhaps a doll (C). Glass objects include a green bottleneck (D). They also recovered a fragment of a china plate (E).



Metal

Archaeologists found metal objects along the east and west banks of the river near the dam. Hinges, an axle, nails and metal straps were recovered. They did not find the iron rods used to hold the cribs together that Bailey noted in his illustrations and reports. Bailey and others wrote that machine scraps were used as fill. However, archaeologists did not find any machine parts. They did find several iron spikes, however. These spikes may have originally been used to support a boat mast like the one archaeologists found that had been used to build the tree dam. (Left to right) Metal hinge, axle, curved metal hinge, and an iron spike.



Wood

Archaeologists found wooden posts and tree trunks along the river floor. On the western bank, these timbers are planks and beams originally taken from buildings in Alexandria. These are the remains of Bailey's "cribs of stone."

On the eastern bank, archaeologists found pine and hardwood tree trunks. Soldiers had removed the branches from the trunks and cut the tips of the trees to a point. Based on their position, they must have placed them in the water with their tops downstream. Yet, historic illustrations had shown the trees placed with their tops facing upstream. A boat mast was also found among the logs that made up the dam on the east bank of the river. This supports the idea that people used any materials they could find to build the dams.



(Left) Exposed section of the tree dam. The cordage used to bind the trees together did not survive, but the molding it left behind can be seen at the bottom of the timbers. Photo courtesy of Coastal Environments, Inc.

(Lower left) Archaeologists discovered this octagonal timber in the tree dam section of the site. It may have come from a building in Alexandria or could be from a river boat's mast.

(Lower right) Exposed corner section of a crib dam. Photo courtesy of Coastal Environments, Inc.





Learn More

Still curious about Bailey's Dam? Check out the resources below. Be sure to also explore the Top Site FAQs section.

• Forts Randolph and Buhlow State Historic Site

The Confederates built Forts Randolph and Buhlow on the Red River at Pineville after the Red River Campaign. Their purpose was to thwart future Union attacks. The state historic site that interprets these Confederate forts also includes the remains of Bailey's Dam.

- Bailey's Dam on the Civil War Trust website
- Joiner, Gary D. *Through the Howling Wilderness: The 1864 Red River Campaign and Union Failure in the West.* Knoxville: University of Tennessee Press, 2006.
- Nystrom, Justin A. "Red River Campaign." In *KnowLA Encyclopedia of Louisiana*, edited by David Johnson. Louisiana Endowment for the Humanities, 2010. Article published July 27, 2011. http://www.knowla.org/entry/777/.
- Winters, John D. *The Civil War in Louisiana*. Baton Rouge: Louisiana State University Press, 1963.

(*Right*) U.S. Gunboat Fort Hindman - Mississippi River Fleet. Courtesy of the Library of Congress, LC-DIG-ppmsca-34035.





Top Site FAQs (Frequently Asked Questions)

Q1. What did Lieutenant Colonel Joseph Bailey do after the war?

After the Red River Campaign, Joseph Bailey was promoted to the position of colonel of the 4th Wisconsin Cavalry. He soon had other commands in the Gulf Coast region until the war's end. After the war, Bailey moved with his family to Vernon County, Missouri, where he became sheriff. On March 21, 1867, Joseph Bailey was killed by two prisoners he had arrested. Within weeks of his passing, Bailey received the brevet grade of Major General of Volunteers. General Bailey was buried with honors and now rests at Evergreen Cemetery in Fort Riley, Kansas.

Q2. What did Rear Admiral David D. Porter do after the war?

Following the Red River Campaign, Porter was sent to the Atlantic Coast where he commanded the North Atlantic Squadron. Later, he was the superintendent of the Naval Academy in Annapolis. After earning the title of Admiral, the second man in the U.S. Navy to do so, Porter devoted his energies to reforming the Navy. He eventually retired from service and passed away on February 13, 1891.

Q3. What did Major General Nathaniel P. Banks do after the war?

General Banks suffered great humiliation after the failure of the Red River Campaign. Though he tried to assist in the reconstruction of Louisiana, he was largely ineffective due to political divisions in New Orleans. He resigned from the Army in 1865 and returned to Massachusetts, where he was from. Banks served in the U.S. Congress, where he promoted women's suffrage, the Alaska Purchase and Manifest Destiny. He was, however, also involved in several financial scandals. Banks died on September 1, 1894.

Q4. What did Major General Richard Taylor do after the war?

Soon after the Red River Campaign ended, General Taylor was recognized by the Confederate Congress for defeating Banks. He was promoted to Lieutenant General, and was later given command of the Departments of Alabama and Mississippi. He surrendered his post to Union forces in May of 1865. After the war, Taylor was involved in politics and later wrote a book recounting his role in the war and reconstruction. Lt. General Taylor passed away in New York on April 18, 1879. His body was returned to New Orleans for burial.

Q5. Is there any way to see the dam today?

Today, the dam is under water and out of sight. However, the public can view the spot where soldiers built the dam at the Forts Randolph and Buhlow State Historic Site.

Q6. What did the people of Alexandria think of Union soldiers in their city?

Feelings towards Union soldiers were somewhat mixed. While most people were glad to see Union forces depart, some had formed friendly relations with some Union soldiers. In fact, some people from Alexandria even kept in touch with Union soldiers after the war.

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The Battle of Pleasant Hill, La., between General Banks and the Confederate General Dick Taylor, April 9, 1864. From The Civil War in the United States by Frank Leslie, 1884, pg. 303.

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