

The Newsletter of the Southwest Arkansas Navigation Study



Vicksburg District
Corps of Engineers

Arkansas Red
River Commission

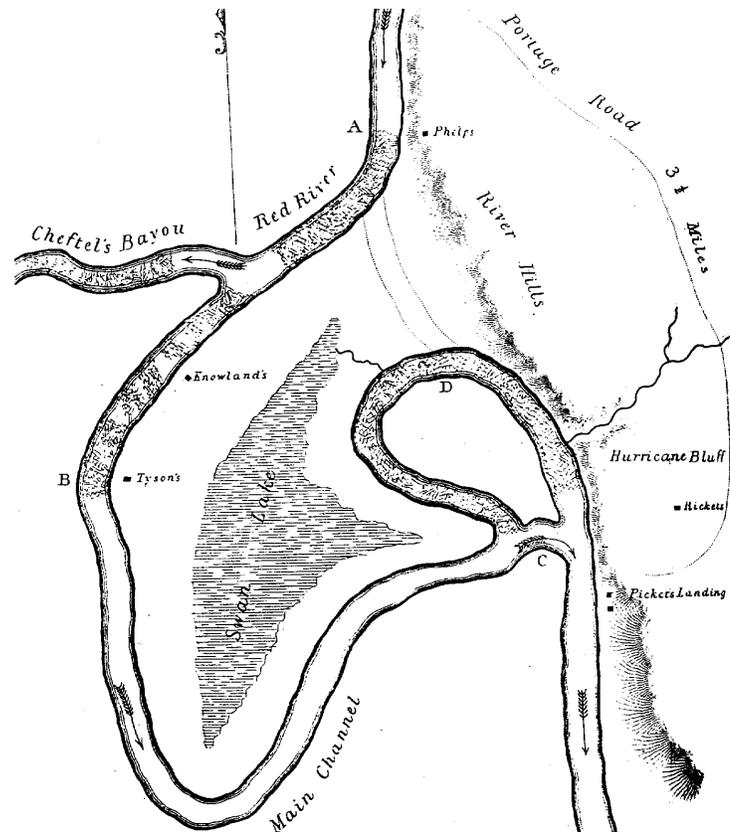


EARLY STEAMBOATS ON THE UPPER RED RIVER

Between 1831 when the *Enterprise* made the first trip to the upper Red River and 1838 when Henry Shreve removed the raft, there was a period in which steamboats were restricted to the western bypass around the raft through Black and Red bayous above Shreveport. Boats taking this route included the *Indian* to Fort Towson in 1834, two trips by the *Compromise* to the Choctaw Nation in 1835, the *Bolivar* and *Native* to Jonesboro in 1836, and the *Rover* to Fort Towson in 1836. The *Compromise* carried out cotton, snakeroot, bear skins, coon skins, tallow, beeswax, bear oil, and beaver pelts. The *Indian* under Capt. Ben Crooks made improvements to the route, beginning the process of transforming it from a passage for small keelboats to a passage for mid-sized steamboats.

When Shreve removed the raft in March 1838, steamboats had direct access to the upper Red River. The first boat through was the *Concord*, followed by the *Indian*, *Black Hawk*, *Brian Boroihme*, *Revenue*, *Heroine*, *Livingston*, *Mariner*, and *Cochuma*. The *Black Hawk* and *Revenue* wrecked on their down trips in an area that had not been completely cleared of raft debris. However, the first true upper Red River wreck was the *Heroine*, which struck a snag a short distance from the Fort Towson landing (on Red River a few miles downstream from the Kiamichi River).

Raft segments formed and were removed periodically in 1839 at the old raft's head about 15 miles above Shreveport. Boats that ran to the upper Red when the river was open included the *Mariner*, *Columbian*, *Manchester*, *Cochuma*, *Brian Boroihme*, *Florida*, and *M. Tarver*. The *New York* wrecked a short distance above Jonesboro.



When a new raft segment formed at the old raft's head in late 1839, a 3 ½ mile ox-wagon portage was established (see map) to carry freight overland around the raft. The portage was referred to as the Dead Fall or Fogelville (that is, Cheatsville). The teamsters were under the nominal control of George Alban, who was to become a famous Red River pilot and captain.

Boats could use the western bypass to reach the Upper Red River as an alternative to the portage, but it was dangerous, expensive, and ill-suited to steamboats of the size that operated on the river. The portage required two sets of boats. The larger set ran from New Orleans to the foot of the raft. The smaller set, which in 1840 included the *Mariner*, *Relief*, and *Hunter*, ran back and forth between the raft and points on the upper Red.

The *Mariner* wrecked at Pecan Point early in 1841. The *Relief* and *Hunter* continued to run on the upper river, operating in conjunction with 16 arrivals at the foot of the raft from New Orleans during that year. Thomas Williamson received a contract for raft removal in late 1841 and was assisted by the *James Ross* and *Napoleon*, which broke through the head of the raft and proceeded to the upper river. The *James Ross* used the western bypass on its down trip because the raft had reformed. The *Napoleon* wrecked on a tributary to Little River.

The *Relief* and *Hunter* continued to operate on the upper river in 1842. The raft was removed early in the year and reformed in the summer. During the interval, the *Caddo*, *Houma*, *Star*, *Waverly*, *Harrisburg*, *Vermillion*, *Mechanic*, *Odessa*, and *Glide* reached the upper river on commercial ventures;

and the *Gen. Brooke*, *Sarah Ann*, *Mungo Park*, and *Chippewa* transported troops to Fort Towson. The *Caddo* wrecked below Spanish Bluffs and the *Houma* at Chicaninny Prairie. The machinery from the *Mariner* was used to build the *Red River Planter* on the upper river, which was the second steamboat constructed in Texas.

The river was intermittently open in 1843, allowing passage for the *Little Rock*, *Napoleon*, *Swan*, *Fort Towson*, *Red River Planter*, *Mechanic*, *James Ross*, and *John H. Bills*. The *Relief* wrecked at Dooley's Ferry early in the year. When the river was closed, the upper river trade was dominated by the *Hunter*, *Waverly*, and *Miami*. The *Beaver* under Capt. Tom Moore used the western bypass late in the year, making improvements as she went, and returned by the same route carrying cotton.

Williamson quit the work of raft removal early in 1844, and raft removal efforts were taken over by Capt. T. B. Linnard of the Corps of Engineers, who was modestly successful during the year. A few boats to include the *Waverly*, *Red River Planter*, *Miami*, and *Sabine* were able to reach the upper river by way of the main river; however, boat movements were beginning to shift to the western bypass, which had been improved by Capt. Moore using the *Col. Harney*. The *Hunter* carried cotton down through this route. Boats like the *South-Western* out of New Orleans began advertising transfer arrangements at Shreveport to smaller boats like the *Frontier* that used the western bypass.

The *Hempstead* and *Little River* operated above the raft in 1844, and there were 11 arrivals at the foot of the raft by New Orleans boats during the first half of the year. However, a large influx of raft materials during the second half of the year severely reduced the practicality of the portage by making it longer and even more expensive. Linnard removed the raft in February 1845, but it reformed in May. Early 1845 witnessed the last movement of boats to the upper Red by way of the river. Until 1873, when the raft was finally removed, steamboats used the western bypass to carry on the upper Red River trade.

RECREATION STUDY UNDERWAY

The construction of dams on the Red River below Shreveport-Bossier City has transformed a turbid stream with highly fluctuating water levels into a series of lakes with increased water clarity. Cutoff bends and diked areas provide even more stable water and are being vegetated, providing slackwater habitat for fish and waterfowl and particularly for fish propagation. River perimeters have been inundated in some areas, providing additional food and habitat. Ducks and geese have become common, and native gamefish species have flourished.

Recreation is part of the official project purpose. To capitalize on these aesthetic and resource improvements, recreational facilities have been developed. These facilities include parking, boat ramps, picnic tables, overlooks, trails, playgrounds, playfields, an amphitheater, and restroom facilities. The purpose of these facilities is to provide public access to the river and the capability of using it and enjoying it. Recreational participation has increased each year, and bass tournaments have become common.

The construction of dams above Shreveport-Bossier City will have a similar effect on the river and will provide opportunities for increased recreational use. The Vicksburg District is conducting a recreational study for the area above Shreveport-Bossier City. The study is estimating regional recreational demand over the 50-year life of the navigation project through data in the various state comprehensive outdoor recreation plans. Existing facilities are being identified, and the degree to which they will be able to meet the expected demand is being determined.

Unmet needs are being identified in terms of annual visitations by activity type, such as boating, picnicking, camping, fishing, and hunting. The number of facilities that will be required to satisfy the needs under each activity type is being determined, and preliminary design and cost estimates will be prepared.

Recreational benefits cannot be used solely to justify a navigation

project, but can be added as a project feature if the project is justified for one of the primary benefit categories of flood control, navigation, or ecosystem restoration. The monetary value of the estimated visitation will be determined by using values for days of recreational activities prepared by the Water Resources Council and updated annually. These values will be compared to the facility costs to produce a benefit/cost ratio for the recreational features.



CULTURAL RESOURCES STUDY COMPLETED

The first phase of the cultural resources investigations was reported in the last issue of *SANS*. This phase involved the compilation, analysis, and GIS mapping of existing information on archeological and historical sites in and along the Red River from Shreveport-Bossier City to Index, Arkansas, and the identification of most-likely areas for historical and archeological resources that might be affected by the navigation project.

The second phase was devoted to streambank and instream field investigations. The final study, incorporating the results of both phases, has now been completed. The final report covers the environmental and cultural background, the methodologies that were used for the streambank and instream investigations, the results of those investigations, and conclusions and recommendations.

Nineteen cutbank profiles were investigated along the present channel from Shreveport-Bossier City to Index. These investigations were not intended to locate cultural resources, but rather to understand the geomorphic processes that would affect the potential of those resources to have survived movements



of the river. Emphasis was placed on the past 10,000 years, because this period marked the upper limit of potential human habitation, and on the present course of the river in relation to previous courses.

The Red River has been in its present valley for about 13,000 years. During this period the river has moved across its floodplain, establishing a number of different meander belts. Within each meander belt, the river has shifted its course and has engaged in dynamic processes such as the formation and cutting off of bends. The present meander belt is less than 400 years old. Together, these facts indicate that most prehistoric resources would have been consumed by changes in the course of the river and that historic resources (plantations, landings, ferries, steamboat wrecks) that might be affected by the navigation project will be largely restricted to those areas in which the present channel is equivalent to the historic channel.

A bank-to-bank remote sensing survey was conducted for ten river segments between Shreveport-Bossier City and Index, constituting a 24 percent sample of the 134-mile reach. The purpose of the survey was to identify possible cultural resources such as steamboat wrecks. These segments

were chosen because they were areas where the present channel overlaps the historic channel, the channel had not migrated sufficiently to destroy cultural resources, there were known or suspected steamboat wrecks, there were hazards such as shoals where wrecks were likely to have occurred, and the present channel was near historic features such as towns and ferries.

The remote sensing survey was conducted using sidescan sonar and a marine proton magnetometer, with a fathometer and Global Positioning System to record depth and location data. The magnetometer records magnetic anomalies above and below the river bottom. The sidescan sonar profiles the river bed and objects that project above the bed. The data produced by these devices was analyzed in terms of expected configurations for such things as boat wrecks and pipelines, resulting in the identification of 34 anomalies that may have cultural significance.

The historic and archeological site files have been combined with the results of the geomorphic investigations and remote sensing surveys into a GIS system that can be used to avoid cultural resources in future projects, to determine the need for further investigations for those that

cannot be avoided, and to determine the potential for cultural resources in areas of the river that were not investigated.

MUSSEL STUDY UNDERWAY

A study is underway to establish the effects that the navigation project would have on freshwater mussels. The study is being conducted by scientists from the U.S. Army Engineering and Research Development Center in Vicksburg. Freshwater mussels are important to stream ecosystems, and various species are under consideration for designation as threatened or endangered. The project has the potential for affecting mussels through dredging, construction (locks, dikes, revetments), and pipeline and bridge relocations; through conversion of a free-flowing river to a reservoir system; and through habitat alterations that might be induced by commercial navigation traffic.

The study is being conducted using waders and divers at 55 proposed construction sites from Shreveport-Bossier City to Fulton. At each site, an initial reconnaissance is used to determine the presence of mussels. If mussels are present in low densities, qualitative sampling is used, which involves collection of live mussels by hand without selectivity as to species or size. If mussels are present in high densities, quantitative sampling is used, which involves the taking of sediments, live mussels, and shells from preestablished plots and subsequent screening out, identification, and measurement of live mussels. This information will be used to provide estimates of mussel density, recent recruitment, and relative abundance.

Habitat data are being collected at all 55 sites, including information on water velocity, water depth, substrate composition, vegetative cover, and bank stability. A Global Positioning System is being used to record the location of each site where qualitative and quantitative samples are taken, which will enable accurate mapping and easy return if more sampling is needed.

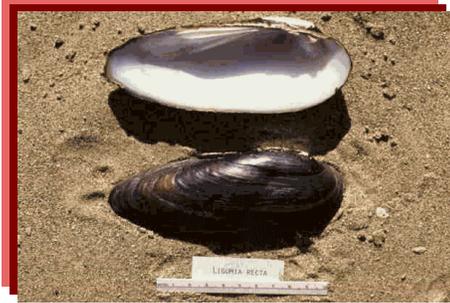
The potential effects of commercial navigation traffic are being investigated through a review of the technical

literature and analysis of existing habitats at sites below Shreveport-Bossier City that are already affected by navigation activities. This will enable a comparison of navigated and non-navigated portions of the river with respect to habitat and mussel density, recent recruitment, species richness, and species diversity.

If you would like more information on the study, please contact:

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You are invited to visit the Southwest Arkansas Navigation Study webpage at: <http://www.mvk.usace.army.mil/offices/pa/sans/main.htm>

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