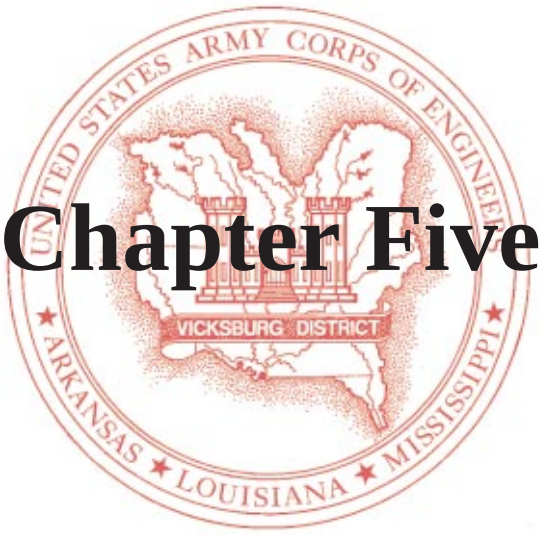


Chapter Five

Protecting the Environment

If the environmental movement of the 1960s caught the Corps of Engineers unaware, the Corps made a rapid recovery. Lt. Gen. Frederick J. Clarke, Chief of Engineers from 1969 to 1973, later characterized his own attitude in that period: "Our job was to do what we always had done: do what the people of the country wanted. And if the people of the country were changing what they wanted, we'd better get in step and find a way to do it." Following that approach, Clarke founded an Environmental Advisory Board made up of civilian experts with environmental credentials to advise the Corps of Engineers.[1] Soon engineer districts began to take steps to become more aware of the environment and more knowledgeable in dealing with it. In Vicksburg, tangible evidence of the new approach came in the creation of the Environmental Analysis Section (later Branch) in 1970 and the Regulatory Branch in 1975.

In the years after 1976, environmentalism came of age within the Corps. Instead of simply looking for problems in ongoing projects, environmental analysts could help in planning new projects that would be less damaging. The mitigation of negative environmental effects through the creation of positive effects became an important activity. Keeping up with a dynamic environmental movement was not easy, however, and the controversy over flood-control projects in the Yazoo Basin posed another major challenge for environmental specialists at Vicksburg.

Meanwhile, an archaeological office within the Environmental Analysis Branch (EAB) provided information on the effects of proposed projects on cultural resources and, in the process, made significant contributions to scholarly knowledge. The regulatory function of the district led to several lengthy lawsuits, which helped to define its precise powers. In the late 1980s, however, litigation virtually ceased as the district earned a reputation for careful work that was hard to challenge in court. At that point attention

focused on the question of how to define wetlands, a difficult problem with great consequences for landowners in the district.

A Tedious Balancing Act

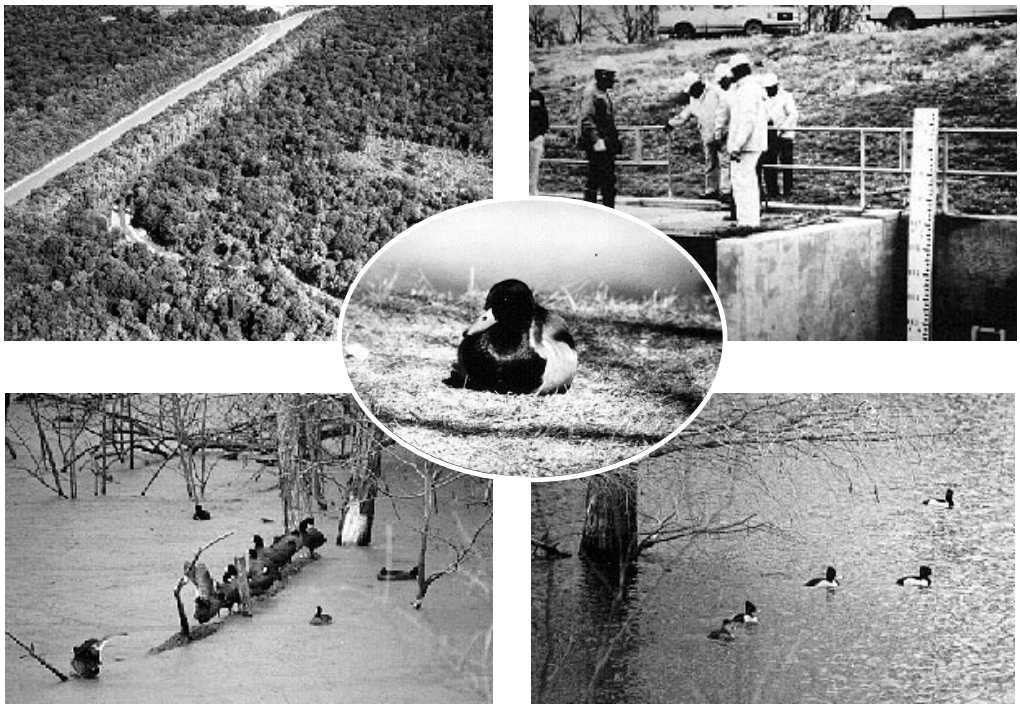
One way that environmental concerns affected the Vicksburg District was through mitigation efforts that were undertaken in order to relieve or offset the environmental damage resulting from some projects. Authorized by the Fish and Wildlife Coordination Act of 1958, mitigation became increasingly important after 1970 because of the heightened environmental awareness in and out of the Corps of Engineers. The Catahoula Lake Control System and the Felsenthal NationalWildlife Refuge were important, environmentally friendly projects of the early 1970s. The Greentree Reservoirs in Delta National Forest and the purchase of the Tensas National Wildlife Refuge were major mitigation initiatives in the latter part of the decade. An examination of the latter two illustrates both the environmental gains that were achieved and also the complex and sometimes conflicting public interests that were served.[2]

The greentree reservoir concept was first suggested to the Vicksburg District by the U.S. Fish and Wildlife Service in 1973. Levee building and channel work had caused environmental damage, and a proposed backwater pumping station would create more. One way to offset the loss was to improve the wildlife habitat capabilities of Delta National Forest, which covered 59,000 acres of Sharkey and Issaquena Counties in the Yazoo backwater north of Vicksburg. In consultation with the Fish and Wildlife Service, the U.S. Forest Service, and the Mississippi Game and Fish Commission, the Vicksburg planners came up with a plan to create eight greentree reservoirs that was supported by those organizations and approved by the Chief of Engineers, in this case the final authority, in December 1976.

Each greentree reservoir consisted of from 350 to 1,800 acres and was surrounded by a levee between three and six feet high with a gated structure to control the flow of water. Water would be pumped into the reservoir in late fall and kept at a height of about 18 inches until early spring, when it would be released. To protect the trees from dying, only

half of the eight reservoirs would be flooded each year, but those four would still provide 3,000 acres of water surface that would function as waterfowl habitat. In addition, the plan provided for the damming of a number of creeks and bayous in order to create slough areas, an additional 565 acres of permanent water surface. Finally, the district would install 600 plastic, wood duck boxes to encourage feathery residents. While the greentree reservoirs were intended to benefit waterfowl primarily, experts agreed that the water would enhance the environment for turkeys, squirrels, and of wildlife.[3]

Despite the positive intentions of the Corps of Engineers and the support of other agencies, some opposition arose to the proposed mitigation program. Shortly after the Vicksburg District announced its plans in March 1977, residents from the Delta National Forest area began to contact District Engineer Col. Gerald E. Galloway to express concern about loss of turkey habitat when the reservoirs were flooded and about possible restrictions on the hunting of deer, rabbit, and squirrel.



Galloway made clear that the number of turkeys was expected to increase. Admitting that only waterfowl could be hunted in the reservoirs, he pointed out that the rest of the forest was open for other game. Critics also pointed out that Delta National Forest was the last wilderness in Mississippi and perhaps should be allowed to continue as such. Galloway's response was that there were over a million acres of national forest in the

state, but that Delta was the only area suitable for migratory waterfowl. In addition, he argued that the proposed project would not seriously alter the "wild" quality of the forest. To the suggestion that a more appropriate form of mitigation would be to purchase more land for the forest, the district engineer responded that there was great opposition to the acquisition of private land by the government.[4]

In November 1977, Col. John H. Moellering, the new district engineer, held a public meeting in Vicksburg on the greentree reservoirs. The purpose of the meeting was to discuss the Finding of Compliance that had to be issued under the Clean Water Act before earth-moving operations could take place in a wetland area. However, the 200 participants who came at 7:30 and stayed until 10:30 had more on their minds. One Anguilla resident articulated a strong environmentalist position, pointing out that this was "the last 100-percent hardwood forest left in the United States." He was particularly concerned about the damage that would be done by the 100-foot right-of-way that would allow access to each reservoir. He also claimed that since this was an exchange of terrestrial habitat for waterfowl habitat, it was not true mitigation. Another speaker claimed that it was "a crying shame to turn caterpillars and draglines loose in there and let them tear that forest all to pieces." On the other side of the issue was a Jackson representative of sportsmen's interests who claimed that the majority of hunters in the forest were not local residents but rather from nearby Hinds County, where Jackson is located, and they were in favor of the project because it would benefit duck hunting. He argued that "the forest belongs to all the people of Mississippi . . . [and] should be managed in such a way that it benefits the wildlife and the waterfowl . . . and not controlled or subordinated by the interests of a few private landowners in the area."[5]

Three weeks later, Col. Moellering announced that the district would go ahead with the plan. Recognizing that the construction would have some effect on the wilderness character of the area, he pointed out that only 10 percent of the forest would be affected and that the work would be done with extreme care to minimize the damage. By the end of 1986, four of the greentree reservoirs had been completed, and two had been combined to form one reservoir. Permanent pumping stations had been completed for two reservoirs and were under construction for the other three. The two unconstructed reservoirs were located far enough from the Yazoo River so that wells would have to be drilled to provide the necessary water. The five slough-control structures were also complete.[6]

Saving the Tensas

The origins of the Tensas National Wildlife Refuge go back to three public meetings held by the Vicksburg District in the Tensas Basin during April of 1977 as part of President Carter's review of all Corps projects. At issue was the Tensas Basin Project, a series of levees, pumping plants, channel improvements, and drainage structures designed for flood-control purposes that were 27 percent complete when the meetings were held. Less than 10 percent of the 600 people who attended expressed negative views, including representatives of the U.S. Fish and Wildlife Service who were concerned about the loss of habitat for endangered species, particularly the American alligator, the southern bald eagle, and the Florida panther.

More representative of the public was one farmer who wrote: "I do not like to see all of our woodland and waterways destroyed." The 90 percent of the participants who favored the projects were motivated largely by the flood damage that had occurred in 1973. Another farmer pointed out that "we badly need drainage, . . . crops in our area for the past three years have been severely affected by flooding, . . . farmers . . . can't keep going, paying land payments and taxes with little income." Still another seemed to have caught the mood, irreverently but effectively: "If the President thinks birds, cats, and gators are more important than people, then I hope they make a game reserve out of his peanut farm."[7]

As a result of the presidential review, flood control, which had been the object of the Tensas Basin projects, was supplemented by the additional goal of preserving bottomland hardwoods and other environmental features of the area.

Addressing this aspect, the Jackson Area Office of the Fish and Wildlife Service recommended the purchase of large tracts of land in the Tensas forests, "one of the most important forested wetland resources remaining in the Lower Mississippi valley." These lands were currently for sale by the Chicago Mill and Lumber Company and the Fisher Lumber Company. After further consultation, the Corps of Engineers and the Fish and Wildlife Service agreed on a plan to purchase the land jointly and establish a wildlife refuge that would mitigate the environmental damage associated with the flood-control projects.[8]

During hearings over this legislation, the director of land acquisition for the Nature Conservancy, a national conservation association, testified to the significance of the tract, which his organization had been trying to have preserved for the past five years. Over the past twenty-five years, he said, bottomland hardwoods in the southeast had been greatly reduced by "channelization, conversion to pine plantations and most importantly, conversion to agricultural purposes." The block of hardwoods under discussion was unique in the country, and it faced the threat of imminent clearing unless something was done. Under questioning, the director stated that in his opinion the southern hardwoods were as important for conservation purposes as were the California redwoods.[9]

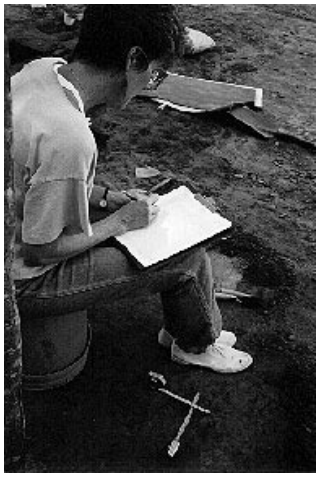
Passed June 28, 1980, "An Act to establish the Tensas River National Wildlife Refuge," authorized the expenditure of $50 million, $10 million by the Department of the Interior and $40 million by the Department of the Army, to acquire land located in Madison, Tensas, and Franklin Parishes, Louisiana. The refuge would be a mitigation bank, offsetting environmental damages associated with the Tensas River Project, the Tensas-Cocodrie Pumping Plant, the Sicily Island levee, the Bushley Bayou levee, the Below Red River levee, and a portion of the Red River navigation project. Administration of the refuge would be carried out by the Department of Interior. About 10,000 acres had been purchased by November 5, 1980, when the Tensas Wildlife Refuge was officially dedicated during a brief ceremony conducted on the banks of the Tensas River in Madison Parish. On hand for the event were U.S. Representative Jerry Huckaby of the 5th District in which the refuge lies, who had originally sponsored the measure, U.S. Senator Bennett Johnston, and Governor David C. Treen of Louisiana. At end of 1986, the acquisition of land was complete, and the Vicksburg District had turned the refuge over to the Fish and Wildlife Service.[10]

Habitat Becomes Precious

The environmental assessments on which the Vicksburg District makes its planning decisions are produced by the Environmental Analysis Branch, a part of the Planning Division. Included in those assessments are both natural phenomena, such as land, water, and wildlife, and cultural phenomena, such as prehistoric sites or buildings more than 50 years old. The most formal presentation of findings occurs in the Environmental Impact Statement

(EIS) required by the National Environmental Policy Act (NEPA) of 1969.[11] The EIS filed in June 1986 with the final report on the Slidell, Louisiana, flood-control project provides a good example of how environmental concerns had become an integral part of the planning process.

The recommended plan for flood control at Slidell involved building 15 miles of levees, 3 floodgates with pumps, and 14 small gated structures, and creating a sump area of several thousand acres where floodwaters would be stored. Among other things, the EIS pointed out that 29 acres of wetlands would be lost to the levees. On the other hand, 816 acres of wetlands and large amounts of forest and grassland would be included in the sump and protected from further encroachments by urban expansion. With respect to endangered species, the district reported one bald eagle nesting site that was already known, and its own searcher found a white-fringed orchid (*Plantanthea blepheriglotlis*), which was hitherto unknown in Louisiana. The Fish and Wildlife Service found that the project would pose no danger to either species.



With respect to wildlife of a more ordinary sort, the EIS reported the findings of a Habitat Evaluation Procedure (HEP) study. HEP, developed by the Fish and Wildlife Service, is a means of evaluating an environment with respect to its biological productivity. The study area is divided into habitat types, model species are chosen whose habitat needs represent those of most of the wildlife in the area, and a team of biologists rates samples of each habitat for its ability to support each of the model species. By multiplying the rating times the number of acres involved, it is possible to obtain a quantitative measure of the environmental loss or gain involved in any change. In the Slidell study, the model species were the raccoon, the gray squirrel, and the barred owl. The net impact of the project, based on a comparison of existing conditions with those that

would occur after its completion, showed that the raccoons, and species with the same habitat needs, would gain 409 average annual habitat units (AAHU) and the barred owls would gain 88, while the gray squirrels would lose 61. The EIS called this outcome acceptable in the sense that no mitigation would be required.

On another issue, action was required. An analysis by the EAB indicated that digging earth for the levees on the site would be "environmentally unacceptable," and it was also opposed by local residents for other reasons. High real estate values also made onsite borrow expensive, and the district chose the less costly option of excavating from existing borrow pits in the area.

Digging up the Past

Finally, there was also a cultural analysis. Under EAB auspices, researchers conducted a cultural resources survey of the project. Nineteen sites were located, two of them prehistoric in origin. Those two and three others, a brick kiln, a creole-style house, and a sunken barge, were deemed possibly worthy to be included on the National Register of Historic Places. There were also cemeteries and grave sites, some of which might be affected by the levee construction. Noting this conclusion from the EIS, the report itself indicated that every effort would be made to avoid the cemeteries, but, if necessary, individual graves or the entire site would be relocated.[12]

The EAB had become an integral part of the Vicksburg District by the late 1980s, and environmental considerations were taken into account by the district as a normal part of doing business. Meanwhile, however, the environmental consciousness of the public was increasing at a rate that threatened to leave the Corps of Engineers behind once more. The controversy over flood-control projects in the Yazoo Basin, encapsulated in the Save the Yazoo slogan, indicated that for many Mississippians the dangers of environmental destruction were more real than those of flooding. High water, particularly in 1991, reawakened concerns about flooding and generated a renewed interest in flood works. Still, as the Vicksburg District began the process of reformulating its flood-control plans for the Yazoo Basin, it recognized

the need for a more comprehensive and sensitive approach to the environment that had been used in the past.[13]

From 1977, cultural analysis at Vicksburg had been carried out under the direction of archaeologist Shelia Lewis, whose twin goals were to keep the district in compliance with federal law and to preserve cultural resources.[14] An example of how that was done occurred in the summer of 1978, when the district contracted with the University of Mississippi for a team of archaeologists to excavate part of the Lightline Lake Site near Teoc Creek, northeast of Greenwood, Mississippi, where a levee was soon to be built. Working for ten weeks in the levee right-of-way, the team unearthed a variety of prehistoric pottery shards, stone tools, projectile points, clay balls used to heat cooking water, and the largely intact skeleton of a young Indian woman buried about 1,500 years ago. Ten days after the dig ended, and the cultural evidence had been preserved, bulldozers began building the levee.[15]

Another historical archaeology project carried on by the Vicksburg District involved Bailey's Dam, located in the Red River just above Alexandria, Louisiana, and now covered by the pool of Overton Lock and Dam. In 1864, Union forces were retreating after their unsuccessful effort to capture Shreveport when low water trapped their fleet of 10 gunboats, placing the fleet in imminent danger of capture. Building a dam in order to raise the water level was the idea of Lieutenant Colonel Joseph Bailey, a gifted engineer who had learned about impromptu dams while working in the Wisconsin lumber industry. Bailey's fellow officers ridiculed the plan, but the perilous circumstances of his command convinced General Nathaniel Banks to give it a chance. Some 3,000 soldiers went to work under Bailey's direction, felling timber on the east bank for a dam of trees and logs, and building wooden cribs on the west bank that were made from lumber taken from Alexandria and then filled with sand and stone. The gap between the two dams extending out from either side of the river was filled by four coal barges. In less than a month, the job was finished, and the water level rose more than five feet. Opening the center of the dam and getting the gunboats through the space created more problems, but Bailey was equal to them, and the Union fleet rode to safety.[16]

Portions of Bailey's Dam remained visible at low water, and the structure is on the National Register of Historic Places. Because it would

be affected both by revetment work at Alexandria and by the rising waters of the navigation system, the Vicksburg District had to file a report for the Historic American Engineering Record.[17] Historical and archaeological research related to this effort at cultural preservation ensured that while the dam went under water for what may be the last time, it has a more accurate and more secure place in American history.

In addition to research that is related to a particular site or project, the district also contracts for work of a broader nature in order to better understand the cultural context in which its analysis must take place. These larger studies sometimes make very significant contributions to historical and archaeological knowledge.

An example of that phenomenon is a 1979 study done under a Corps of Engineers contract by Harry P. Owens through the Center for Archaeological Research at the University of Mississippi. Essentially an examination of nineteenth century cultural resources along the Yazoo River, Owens' study provides a wealth of detailed information about commerce on the river, the steamboats that carried commerce, and the places where steamboats stopped.[18]

Similarly, a 1979 survey of cultural resources on a part of Steele Bayou, done for the district by Coastal Environments, Inc., yielded much new information about prehistoric and historic sites. Using evidence from the Swan Lake bend of the Mississippi, the authors also provided a hypothetical model for the prehistoric settlement of oxbow lakes.[19] At the end of 1991, ongoing studies included a cultural resources survey at a berm near Lake Beulah in Bolivar County, Mississippi, a documentation of several railroad bridges over the Red River in Alexandria, Louisiana, and an archaeological survey of a levee on Sicily Island in Catahoula Parish, Louisiana.[20] This work, taken together with other activities of the EAB, make clear that the analysis of cultural

resources in the Vicksburg District, done to prevent their damage or destruction, is having the additional effect of increasing both public appreciation and scholarly understanding of those resources.

The work of the EAB in the Planning Division affects how the Vicksburg District itself operates with respect to the environment. The Regulatory Branch in the Operations Division, on the other hand, regulates certain activities of private landowners whose operations may affect the navigable streams and other water resources of the United States.

Statutory authority for this regulation began with Section 10 of the Rivers and Harbors Act of 1899, which required a license from the Secretary of War before any person could engage in dredging, filling, or construction activities in navigable waters of the United States. Operating a permit program under Section 10, the Corps of Engineers carried out a limited form of regulation over the years, concerning itself primarily with gross obstructions in waters that were identified as navigable. During the 1960s, however, under the influence of the Fish and Wildlife Coordination Act of 1958 and the new environmental consciousness, the Corps of Engineers amended its regulations so they considered the public interest rather than simply the needs of navigation.[21]

A milestone in the expansion of Corps of Engineers authority came in the 1970 case of Zabel v. Tabb, in which a district engineer was upheld in the federal courts for denying a permit in a situation where dredged and fill activities would have had no adverse effect on navigation but would have damaged the marine life of a Florida bay. In 1974, the Corps issued new regulations stating that permits would be issued or denied on the basis of the public interest, as defined by all of the following considerations: "conservation, economics, aesthetics, general environmental concerns, historical values, fish and wildlife values, flood-damage prevention, land-use classifications, navigation, recreation, water supply, water quality . . ."[22]

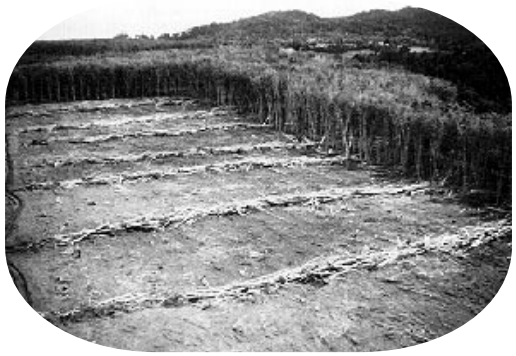
Even as the subject matter to be taken into account was being expanded, so also was the territory of Corps of Engineers permit jurisdiction. In 1972, the Federal Water Pollution Control Act Amendments (Clean Water Act) established a goal of halting the degradation of American water and created a National Pollutant Discharge Elimination

System to be administered by the Environmental Protection Agency. However, apparently to prevent an overlap with the authority under the 1899 law, Section 404 of the 1972 measure assigned the Corps of Engineers the task of licensing the discharge of dredged and fill material into waters of the United States. In 1975, a federal court ruled in Natural Resources Defense Council, Inc. v. Callaway that, as a result of the Clean Water Act, the permit authority of the Corps of Engineers extended to "all waters of the United States" instead of the "navigable waters" to which it had been limited in the 1899 measure.[23]

Waters of the United States also include "wetlands," the significance of which was becoming increasingly appreciated. Wetlands are swamps, bogs, marshes, and similar areas that are inundated or saturated enough of the time so that their vegetation is adapted to that condition. Wetlands are extremely important for wildlife, serving as spawning grounds and feeding grounds for fish and shellfish and as resting places and habitat for migratory and residential birds. They also recharge groundwater supplies, filter polluted waters, and shield coastal areas from waves and storms. All of these functions have been threatened in recent years as developers have filled in wetland areas to provide new land for commercial and agricultural development.[24]

With the expansion of the permit program, the Vicksburg District created its Regulatory Branch in 1975. Beginning with five people, it contained twenty by the mid-1980s. By the latter years, some 250 individual permits were being processed annually; about 75 percent required public notice prior to approval. In each of the latter cases, the Regulatory Branch sent out announcements to about 400 newspapers, post offices, and interested parties, including other federal agencies such as the Fish and Wildlife Service, the Environmental Protection Agency, and state pollution and conservation agencies. When interest warranted, the branch held public hearings. On the basis of information received in response to these notices and its own investigation, the Regulatory Branch decided how the public interest was affected by an individual permit application. If an investigation determined that endangered species of wildlife or significant cultural resources were involved, the district applied the appropriate laws with regard to their protection in reaching the permit decision.

Less than 5 percent of the applications were turned down, but more than 75 percent of them were modified through the permit process. Nonetheless, the evaluation process is complex and has been lengthy. In 1979, the average permit was processed in 150 days; under the Reagan Administration, an effort was made to speed the process, and the average dropped to 58 days. General permits were also created under which landowners can do certain defined things according to specific guidelines after simply writing a letter and obtaining permission.[25]



As elsewhere, the expanded scope of the Corps' regulatory program has generated controversy in the Vicksburg District. In 1978, District Engineer Col. John H. Moellering issued a cease and desist order against Albert Prevot, who was clearing land in Avoyelles Parish near Alexandria, Louisiana. Prevot was clear-cutting trees at ground level, burning the wood and brush, and discing the cleared land to create agricultural acreage. The operation was being carried out on a 20,000-acre tract of bottomland hardwoods that included small lakes, streams, and swamps. Moellering's order applied to about 30 percent of the land, that portion that the Corps defined as wetlands, and on which ditching and road building were leading to the discharge of materials into the waters of the United States.

The Environmental Protection Agency, supported by the Fish and Wildlife Service, felt the Vicksburg District was too conservative in applying the wetlands definition and that 80 percent of the Prevot land qualified. It also believed that the regulatory authority of the Corps should apply to the land clearing operation as well as to the moving of earth. While he felt his position was legally correct under Section 404, Moellering noted that Prevot was exploiting a "loop hole" that would allow him to clear the land so that it lost its character as wetlands and then proceed to dredge and fill without the need for a permit. Within the government, the dispute between the Corps and the Environmental Protection Agency was settled by Attorney General Benjamin Civiletti, who empowered the Environmental Protection Agency to decide what were wetlands.

Meanwhile, however, environmental groups, among them the Environmental Defense Fund and the National Wildlife Federation, had become interested in the situation, and they sued the government over both issues, whether

clear-cutting was subject to regulation and how wetlands should be determined. A district court decision found for the environmental plaintiffs on both issues, but the circuit court overruled on behalf of the Environmental Protection Agency definition of wetlands. Clear-cutting on wetlands was subject to regulation in the western judicial district of Louisiana for a time, although nowhere else in the country. Disputes over wetlands in the Vicksburg District became infrequent as falling agricultural prices led to a decline in the value of farm lands and less interest in creating more of it.[26]

In other litigation, the district was more successful. In 1984, for example, the Louisiana Wildlife Federation, the Environmental Defense Fund, and the National Wildlife Federation, among others, filed suit against District Engineer Dennis J. York on the basis of six permits he had issued and the district's own construction activities related to the Sicily Island levee project in the Red River backwater area. In an unambiguous decision, the court found that York had operated properly. In another recent suit, the district won a $150,000 verdict against a landowner who persistently and publicly refused to acknowledge Corps jurisdiction over his property and the landfill activities he had conducted.[27]

A controversial regulatory issue in the district's backyard involved Eagle Lake, a former Mississippi oxbow just north of Vicksburg. Prior to the construction of the mainline levee, the Mississippi River flowed into Eagle Lake in the spring and freshened its waters. After being cut off from that source, Eagle Lake received water only from Muddy Bayou, which connected with Steele Bayou, a carrier of agricultural runoff heavy with pesticides and silt. Once a renowned fishing location, Eagle Lake had deteriorated badly by the 1970s when the Vicksburg District stepped in and built the Muddy Bayou control structure, designed to keep polluted waters out of the lake.

In the spring of 1979, about two years after the Muddy Bayou control structure began to improve the quality of Eagle Lake, Larry and Murray Crowe began to develop nearby lands for agricultural purposes. They discussed the project with the Vicksburg District and were advised that a permit would probably be necessary under Section 404. Nonetheless, they went ahead with a land clearing and ditching project without getting the permit. District Engineer Col. Samuel P. Collins issued a cease and desist

order and required that an unauthorized ditch be restored to the original condition. This was done, and in November the Crowe brothers submitted a permit application for a drainage program, which resulted in a public discussion of the issues involved.[28] One outcome, shocking to residents of Eagle Lake, was that, while the Corps was empowered to regulate ditching through wetlands that would allow agricultural runoff to flow into Steele Bayou, it had no regulatory authority to halt the Crowes from draining their fields directly into the lake.[29]

Eventually, Collins recommended a plan for drainage into Steele Bayou for which he would issue a permit. The issue was complicated still further, however, by the arrival of two bald eagles who took up residence on the land in question, making it one of two nesting sites in Mississippi and calling into play the statutes dealing with endangered species. The matter was finally resolved in bankruptcy proceedings, where the Vicksburg District obtained a ruling in December 1986 that set aside 200 acres as permanent wetlands, compensating in part for about 500 acres that had been impacted.[30] Regulatory litigation dropped off after 1986, apparently because the district earned a reputation for careful preparation, avoiding the "arbitrary and capricious" decision-making that made for successful legal challenges. According to Gaylon McGregor, then chief of the Regulatory Branch, the major regulatory issue of the late 1980s was the question of jurisdiction—of what constituted wetlands.

The focal point of this new controversy was a 1989 publication titled "Joint Manual for Identifying and Delineating Wetlands in the United States," produced and approved by the Corps of Engineers, the Environmental Protection Agency, the Soil Conservation Service, and the Fish and Wildlife Service. This document incorporated a multiple parameter approach that defined wetlands in terms of soil type, vegetation, and hydrology. In the past the Vicksburg District had emphasized vegetation, a good indicator of wetlands that was also easy for the landowner to see and understand. The net effect of the new regulations was to greatly expand the amount of land that could be considered wetlands. With respect to hydrology, for example, the regulators declared that land that was flooded or saturated for seven consecutive days during the growing season could be considered wetlands, a requirement easy to meet in the Delta. A three-month test of

the new regulations in the Vicksburg District confirmed that they would greatly expand the district's jurisdiction.[31]

Agricultural interests became alarmed and angry as information about the new manual spread. The Regulatory Branch spent much of 1989 and 1990 meeting with the public, explaining the new regulations and pointing out that normal agriculture was exempt from regulations governing wetlands. On the other hand, farmers who went from growing soybeans to building levees to support catfish farming would be subject to regulation.

Eventually enough complaints reached Washington so that Congress included language in the 1990 Appropriations Act barring the use of the Joint Manual. It directed, however, that the Corps of Engineers use an earlier manual, developed by the Waterways Experiment Station in 1987, on which the 1989 document had been based. The multiple parameter approach remained in effect. In Vicksburg, the Regulatory Branch implemented the policy but followed a conservative approach that was designed to minimize the hardships to landowners making good faith efforts to follow the law.

Several other issues became important at the same time. One was the agreement between the Environmental Protection Agency and the Corps of Engineers that the goal of regulation should be "no net loss of wetlands." Unfortunately, the meaning of this goal was less clear. The Fish and Wildlife Service argued that mitigation should be acre for acre, while the Corps of Engineers defined loss in terms of functions and values. Wetland functions needed to be replaced but not necessarily acre for acre: functionless wetlands might not be a loss. However the loss was defined, the Vicksburg District developed an innovative approach to replacing it. Mitigation banking, as it was called, was the idea that landowners who destroyed wetlands might purchase mitigation acres in an area where they could be carefully monitored and serve a special purpose. Gaylon McGregor, who came up with the idea in conversations with catfish farmers, believed that

mitigation banks could provide useful corridors and greenbelts rather than having mitigation result in bits and pieces of land scattered about and serving little purpose.[32]

With respect to the regulatory program, the Corps of Engineers appears to see its role as one of finding a balance among various interests, particularly those of the economy and those of the environment, and arriving at a decision that will be most beneficial to the public as a whole. It sometimes finds itself at odds with the Fish and Wildlife Service, whose mission includes protecting fish, wildlife, and their habitat, and with environmental groups. At the same time, business and agricultural interests often feel that the Corps is impeding progress. At Vicksburg, district engineers have often been criticized and sometimes sued by partisans on both sides of a regulatory issue. Nonetheless, as it has exercised its authority under the Clean Water Act, the Vicksburg District emerged as a powerful defender of southern waters and wetlands and the plants and animals that inhabit them.

The Rebirth of Chicot

In the southeast corner of Arkansas, the efforts of the Vicksburg District have made another very significant environmental improvement. Lake Chicot is a 16-mile-long oxbow lake created about 400 years ago when the Mississippi cut through the neck of one of its meanders. The largest natural lake in Arkansas, Chicot was a beautiful home to fish and waterfowl until local ditches, levees, and the Flood of 1927 altered the pattern of drainage and allowed the lake to fill with silt-laden water.

Agricultural runoff, increasingly filled with fertilizers and pesticides, made the situation worse. In 1948, the Arkansas Game and Fish Commission built an earthen dam across the lake, isolating the quarter above where Connerly Bayou carried in silt and chemicals. The upper lake improved and became a recreation site while the lower 12 miles deteriorated further. Ditch Bayou, which runs out of Chicot on the south, was dammed in 1956 to raise the level of the lake, but the positive benefits of a deeper pool were outweighed by the increasing agricultural activity of the 1960s. An inch of silt collected on the bottom of the lower lake each year,

and its dark tan appearance contrasted with the aquamarine waves on the upper lake.[33]

In the Flood Control Act of 1968, Congress authorized the Vicksburg District to go ahead with a plan to improve Lake Chicot, the key feature of which was the Lake Chicot Pumping Plant. It also included two new control structures, one on Connerly Bayou to regulate water coming into the lake, and one on Ditch Bayou, the outflow channel, to maintain the lake at desired levels. When Connerly Bayou was turbid with agricultural runoff, the control structure would be closed and the water diverted into the Mississippi River through the pumping plant that would be located in the levee itself. When the Mississippi was low enough, gravity would allow Connerly Bayou to flow into the river. When the Mississippi was high, however, the pumps would carry the water over the closed gates of the pumping plant. Thus, the silted waters would go into the Mississippi, and Lake Chicot would be fed only during the winter when Connerly Bayou was relatively clean.

In 1976, ground was broken for the $90-million project, construction of which was supervised by the McGehee Area Office. In 1981, after the control structures on Connerly Bayou and Ditch Bayou had been built, the J.A. Jones Construction Company of Charlotte, North Carolina, began work on the pumping plant, which would eventually house twelve Allis-Chalmers pumps and motors, capable of pumping up to 6,500 cubic feet of water per second. On April 12, 1985, Lt. Gen. E. R. Heiberg III, Chief of Engineers, addressed a crowd of about 1,000 people to officially dedicate the Lake Chicot Pumping Plant. Among the other speakers were Arkansas Governor Bill Clinton, Senator Dale Bumpers, Senator David Pryor, Congressman Beryl

Anthony, and Judge James Burchfield, chairman of the Chicot County Rural Development Authority, which was the local sponsor of the project.

During the summer of 1985, Lake Chicot was drawn down 10 feet below its operational level in order to consolidate the sediment. The Arkansas Game and Fish Commission seeded the exposed ring of lake bottom to establish vegetation, applied chemicals to the remaining water in order to kill the existing population of less desirable species of fish, and then later restocked with bass, crappie, and bream. After being returned to its normal stage, the lake grew steadily cleaner. Increasingly also, visitors made use of the 98-unit campground and the two boat ramps that were part of the project. In 1989, a publication of the Arkansas Industrial Development Corporation called Lake Chicot "a supreme setting for viewing the area's large waterfowl and wading bird populations" and praised the fishing in the lake where the 1987 Mr. Bass of Arkansas Classic was held.[34]

Chapter Five Notes

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