

CHAPTER ONE

Draining the Swamp: Development and the Beginning of Flood Control in South Florida, 1845-1947

In the mid-1800s, the Everglades, a region of water and sawgrass between Lake Okeechobee and the southern edge of Florida, percolated in Floridians' minds. What, they asked, was the purpose of this vast wetland? Was it destined to lay unoccupied, or were there measures they could take to make the area conducive to settlement? Unappreciative of the plethora of flora and fauna in the region, most Floridians could see only a wet swamp that had to be drained and seeded to crop before it could reach its full potential. Accordingly, throughout the late 1800s and the first decades of the twentieth century, Floridians, both privately and with state help, examined the possibility of draining the Everglades. Hamilton Disston and Napoleon Bonaparte Broward, for example, pursued drainage relentlessly, and railroads and land speculators marketed the dry land as an agricultural paradise. But problems appeared in the 1920s and 1930s: storms sporadically produced devastating floods, while flora and fauna dwindled because of the lack of water. Such problems required federal action; in 1930, the U.S. Army Corps of Engineers began a flood control project around Lake Okeechobee, and in the 1930s and 1940s, conservationists were able to secure protection for wildlife and vegetation through the creation of Everglades National Park. The state had sponsored drainage programs for much of the twentieth century, but by the mid-1940s, officials realized that federal help was necessary so that water in South Florida could be managed comprehensively.

Because this period of drainage, early flood control, and conservation laid the groundwork for the establishment of the Central and Southern Florida (C&SF) Flood Control Project in 1948 and for the subsequent water supply tensions prevalent throughout the rest of the century, it constitutes a critical era in the history of water management in South Florida. No flood control project or water supply scheme in the second half of the twentieth century began with a *tabula rasa*; instead, the Corps and other agencies had to construct projects in an environment that had already been extensively modified. In the words of historian George E. Buker, the Corps was "faced with correcting past mistakes."¹ By the time the Corps developed the C&SF Project, numerous political entities, including federal interests (the National Park Service and the U.S. Fish and Wildlife Service), state interests (the trustees of the Internal Improvement Fund), and local interests (boards of county commissioners) had already staked out their water terrain. Thus, the Corps would not only have to work within a manipulated and modified ecosystem, but also with existing political interests, each with a different perspective as to how water should be managed.²

Thousands of years before Americans had made any attempts to alter the South Florida environment, including the Everglades, native peoples had traversed the area, discovering ways to subsist and flourish within the soggy marshes. By the first years of the common era, three groups had settled in the Everglades area: the Calusa, who resided in a region that began north of the Caloosahatchee River and extended south through the Ten Thousand Islands to Cape Sable;

the Mayaimi, who occupied the shores of Lake Okeechobee; and the Tekesta, who lived on the east coast beaches from Boca Raton south to Biscayne Bay and the keys.³ By the time of Spanish contact in the early sixteenth century, the most dominant and populous group was the Calusa. This tribe, like the Mayaimi and the Tekesta, had learned how to use the Everglades, its water, and its resources in the most efficient ways. The groups subsisted mainly on food obtained in the freshwater and saltwater of the region, including cocoplum, sea grape, prickly pear, cabbage palm, and saw palmetto, as well as fish and game. They made clothes out of tree moss and palmetto strips, and employed conch shells as tools and drinking cups. They built houses using cabbage palm posts and palmetto, and applied fish oil to discourage mosquitoes and sandflies.⁴

Despite their knowledge of the land, the groups could not escape the problems that resulted from non-Indian settlement. In the early 1500s, Spanish explorers reached Florida, led by Juan Ponce de León in 1513. The first Spaniard to explore the region extensively was Pedro Menendez, who, in the 1560s, conducted investigations to try to find a waterway across the Florida peninsula to facilitate Spanish navigation to the Americas. By 1570, however, Spanish interest in South Florida had waned, mainly because no trans-peninsula waterway had been discovered. Yet non-Indians still influenced the region, and European diseases and slave raids decimated Indian populations. When Great Britain assumed authority over the area from 1763 to 1783, only 80 Calusa families remained, and they left with the Spanish. By the time the United States had gained official control over Florida in 1821, other Indian groups, including the Seminole, an offshoot of the Creek in Georgia, had moved into the Everglades, and Americans spent a great amount of time and energy trying to remove them in the 1830s, 1840s, and 1850s.⁵

The Second Seminole War (1835-1842) and the Third Seminole War (1854-1855), for example, represented concerted campaigns by the United States to extricate the Seminole from the Everglades. Although these battles were characterized by one scholar as “America’s first Vietnam,” in that it was “a guerilla war of attrition, fought on unfamiliar, unforgiving terrain, against an underestimated, highly motivated enemy who often retreated but never quit,” the expeditions provided numerous accounts and maps of the South Florida landscape, including the Ives map discussed below. Despite the colorful accounts of the landscape – or perhaps because of them, as most soldiers depicted the scenery as an “interminable, dreary waste of waters” infested with mosquitoes, snakes, and sawgrass – Floridians expressed little interest in the Everglades until the mid-1800s.⁶



Ken Hughes' rendition of Pedro Menendez, the first Spaniard to explore South Florida extensively. (Source: The Florida Memory Project, State Library and Archives of Florida.)

United States as the 27th state in the Union. Thereafter, the state’s legislature, seeking new areas

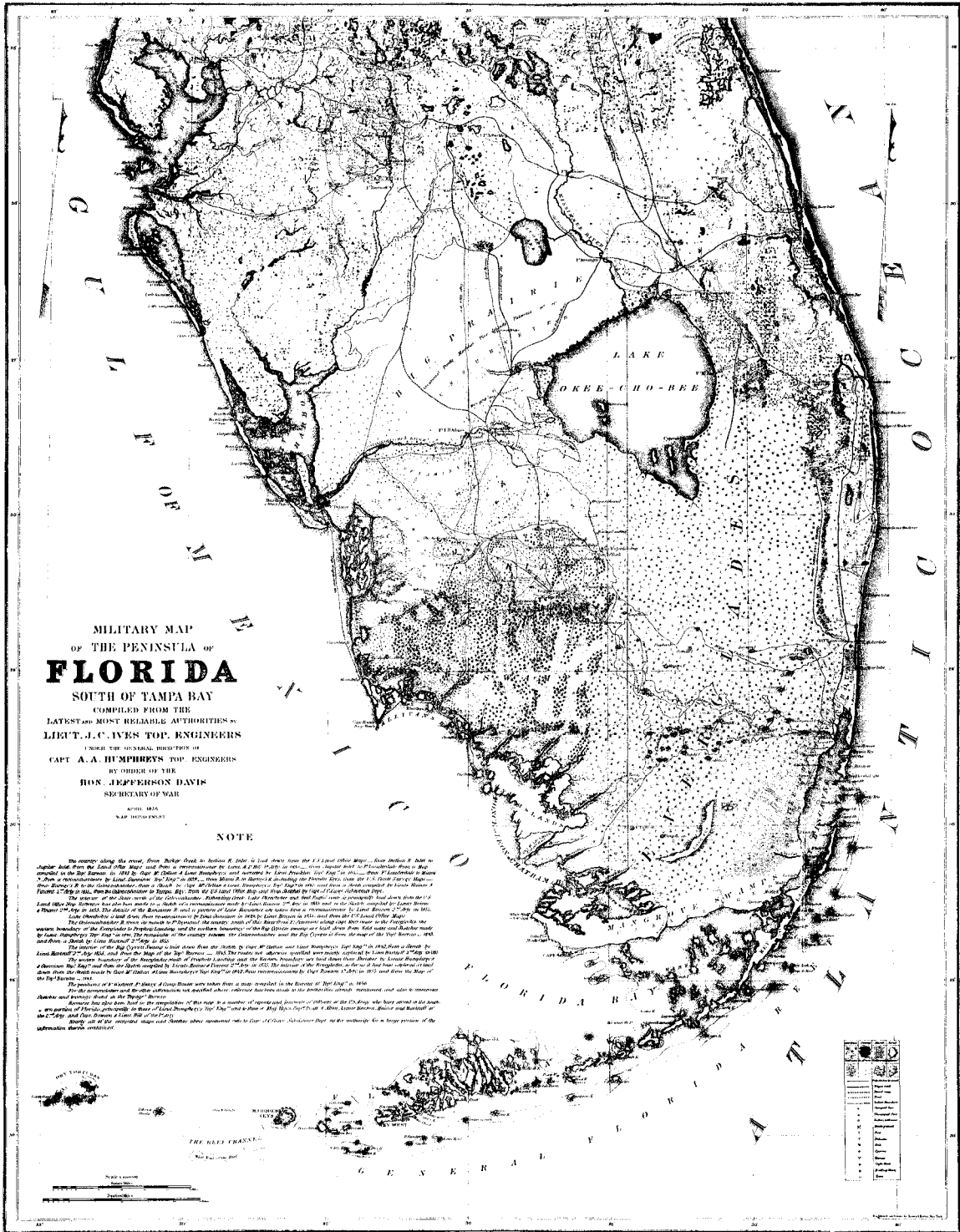
where people could settle, passed resolutions declaring that “there is a vast and extensive region, commonly termed the Everglades, in the southern section of this State, . . . which has hitherto been regarded as wholly valueless in consequence of being covered with water at stated periods of the year.” The resolution asked Florida’s representative and senators to “earnestly press upon” Congress to appoint “competent engineers to examine and survey the aforesaid region” in regard to the possibilities of drainage.⁷ Buckingham Smith, an attorney from St. Augustine, Florida, received this appointment, and he submitted a report to the secretary of the treasury on 1 June 1848. In this document, Smith provided a detailed description of the Everglades landscape:

The Everglades extend from the southern margin of Lake Okeechobee some 90 miles toward Cape Sable, the southern extremity of the peninsula of Florida, and are in width from 30 to 50 miles. They lie in a vast basin of lime rock. Their waters are entirely fresh, varying from 1 to 6 feet in depth. . . . As the Everglades extend southwardly from Lake Okeechobee they gradually decline and their waters move in the same course. They have their origin in the copious rains which fall in that latitude during the autumn and fall and in the overflow of Lake Okeechobee through swamps between it and the Everglades.⁸

Smith believed that in order to reclaim the Everglades, canals would have to be constructed from Lake Okeechobee to the Caloosahatchee and Loxahatchee rivers, thereby allowing the lake to drain into these rivers, lowering its water level and preventing it from sending water on its normal southward trek. Drains would also have to be placed at strategic locations “by which the waters accumulating from the rains may be conducted to the ocean or gulf.” If such actions were not taken, Smith claimed, “the region south of the northern end of Lake Okeechobee will remain valueless for ages to come.” But if drainage was implemented, the land could produce cotton, corn, rice, and tobacco, as well as lemons, limes, oranges, bananas, plantains, figs, olives, pineapple, and coconuts.⁹ According to historian David McCally, Senator Westcott forwarded this report to the *Commercial Review of the South and West*, which “embraced Smith’s conclusions and urged Congress to deed the Everglades to the State of Florida so that reclamation could begin.”¹⁰

Congress listened to the *Commercial Review’s* recommendation. In the Swamp Lands Act of 1850, Congress expanded the jurisdiction of an 1849 act granting swamp areas to the state of Louisiana, allowing the federal government to provide swamp and overflowed lands unfit for cultivation to other states as well.¹¹ Under the authority of this act, the federal government transferred title to more than 20 million acres to the state of Florida. In 1851 and 1855, the Florida legislature passed acts creating an Internal Improvement Fund (IIF), consisting of the land and the money obtained from land sales, and establishing a board of trustees to oversee the fund. This board, composed in part of the governor and his cabinet, essentially had authority over all state land sales and over all reclamation matters.¹²

In 1856, more information about the topographical features of South Florida was made available when Lieutenant J. C. Ives, a topographical engineer serving in the Third Seminole War, conducted a survey of the area and combined his data with other records produced in the 1840s by army officers traversing the region to produce a map of the “comparatively unknown region” south of Tampa Bay. The Department of War wanted the map to inform officers fighting the Seminole, but it became, in the words of Marjory Stoneman Douglas, “the first fine



Lieutenant J.C. Ives' military map of South Florida, 1856. (Source: U.S. Army Corps of Engineers, Jacksonville District.)

American map of the country.”¹³ Ives highlighted not only the Everglades, but other areas of South Florida, including Big Cypress Swamp and Lake Okeechobee, and he noted that the land was basically “a flat expanse, where the prairie of one day may at another be converted into a lake and where the lakes, rivers, swamps and hammocks” fluctuated as much as three feet at a time.¹⁴

Eager for a chance to promote the settlement of South Florida, the IIF began granting deals to railroad companies in which it would give the corporations land in return for completed rail lines. In this way, the IIF hoped to “open the interior and attract settlers, who would buy land and replenish the fund, which could perhaps be used to finance drainage ditches someday in the future.”¹⁵ After many railroads succumbed to financial difficulties in the post-Civil War era, the IIF essentially faced bankruptcy. Its situation worsened when Francis Vose, a New York metals manufacturer who had provided iron to railroad companies in Florida in return for state bonds, refused to accept the state’s offer of 20 cents on the dollar for the bonds and sued the IIF instead. From that suit, an injunction was placed against the IIF’s, preventing it from distributing any more land for discounted prices until Vose had been paid in full. Desperate for money, the IIF, under the leadership of Governor William D. Bloxham, began looking for new investors interested in obtaining land for reclamation purposes. In 1881, it found a candidate: Hamilton Disston.¹⁶

Disston was a 34-year-old entrepreneur from Philadelphia whose wealthy father owned a lucrative saw and file manufacturing company. First visiting Florida in 1877 on a fishing trip, Disston had been obsessed with draining the Everglades ever since. In 1881, Disston proposed to drain lands flooded by Kissimmee River and Lake Okeechobee waters by constructing a system of canals and ditches from Lake Okeechobee to the Caloosahatchee River, the St. Lucie River, and the Miami River, and by straightening and deepening the Kissimmee. This would convey water in the flooded Kissimmee basin to Lake Okeechobee, and the excess water would then be flushed out via the Caloosahatchee, St. Lucie, and Miami rivers, thereby lowering Lake Okeechobee’s water level and allowing vast acreages of land to be cultivated. In exchange, the IIF would give Disston and his associates “one-half of all the reclaimed land already belonging to the state or later turned over by the federal government,” as well as four million more acres for \$1 million.¹⁷ In September 1881, Disston’s corporation, the Atlantic Gulf Coast Canal and Land Sales Company, began drainage operations.

By deepening and straightening the Kissimmee River, and by constructing canals connecting the various lakes that formed the headwaters of the river, Disston was able to drain portions of the area and sell it to cattle operators as grazing land in the 1880s. Disston’s company also deepened the Caloosahatchee River and connected it to Lake Okeechobee through a linchpin canal. In addition, the corporation began a canal south of Lake Okeechobee, hoping to drain water into the Shark River, and started another east of the Kissimmee Valley toward the St. Johns River. To promote the reclaimed land, Disston produced advertising brochures, planned model cities, built hotels, settled families, and established agricultural enterprises such as sugar, rice, and peach cultivation. By the 1890s, however, Disston had overextended his operations, and the Panic of 1893 dealt a devastating blow to his finances. Banks began recalling loans and bonds became due. Faced with an increasingly precarious situation, Disston died on 30 April 1896, either through suicide or from a heart attack. Although his decade-long drainage effort

reclaimed less than 100,000 acres, he left two legacies: first, he demonstrated conclusively the agricultural potential of the region through his experimental farms, and second, his connection of the Caloosahatchee River to Lake Okeechobee was “the first significant step in draining the Everglades.”¹⁸

Meanwhile, the vision of canals and drainage lived on in other minds. John Westcott, for example, formed the Florida Coast Line Canal and Transportation Company in 1881 to build a canal from the mouth of the St. Johns River to Biscayne Bay. The enterprise received a boost in the 1890s when Henry L. Flagler, who became a millionaire with Standard Oil, formed the Florida East Coast Railroad to build a rail line from St. Augustine to Miami Beach. Flagler became interested in the canal project, perhaps because the company agreed to provide the railroad corporation with 270,000 acres of land it had obtained. However, even with Flagler’s interest and resources, canal construction proceeded slowly, not reaching completion until 1912, although the construction of his railroad did precipitate South Florida’s first settlement boom, leading to the establishment of West Palm Beach, Fort Lauderdale, and Miami.¹⁹



Hamilton Disston, the first to set up extensive drainage operations in South Florida. (Source: The Florida Memory Project, State Library and Archives of Florida.)

By the close of the nineteenth century, large-scale drainage and agricultural development of the Everglades, although attempted by many different parties, had not reached fruition. Despite the granting and sale of millions of acres of land in southern Florida to railroads and other corporations, successful reclamation lay in the future. An 1891 report written by H. W. Wiley of the U.S. Department of Agriculture observed that, although “the possibilities of bringing into successful cultivation the swamp lands of Florida have occupied the minds of capitalists for several years,” large tracts remained inundated. Even those that had been drained were “still in the wild state, . . . no attempts having been made to fit them for cultivation.”²⁰ Conditions were no better in 1903, leading Governor William S. Jennings to compare Florida’s drainage endeavors to “the man who undertook to lift himself,” opining that the state was “almost as helpless.”²¹

In the early 1900s, drainage schemes gained momentum, largely because of changing ideas about the human use of nature. The late 1800s and early 1900s saw the development of a conservation movement in the United States, characterized, in the words of historian Samuel P. Hays, by “rational planning to promote efficient development and use of all natural resources.”²² This movement expressed itself in several ways, including the formation of the U.S. Reclamation Service in 1902, and in the creation of national parks, which were conceived as areas to preserve pristine wilderness for the enjoyment of future generations. Other conservationists held that



Early settlers to South Florida. (Source: South Florida Water Management District.)

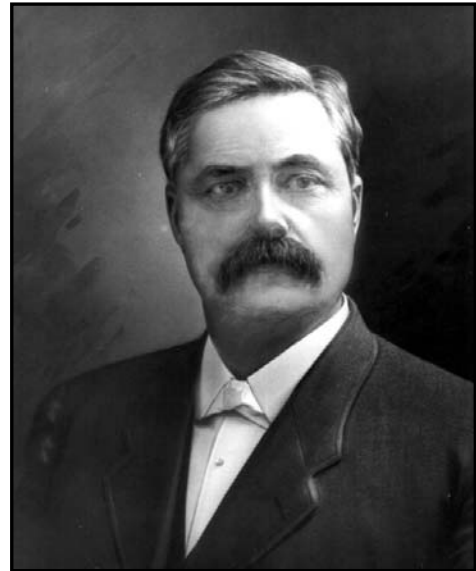
making wasteland productive was an excellent way to promote the efficient use of the nation's resources. The editors of *Collier's* magazine, for example, claimed that the terms "conservation" and "reclamation" meant not only the irrigation of dry land, but the draining of wetlands as well.²³ In Florida, these ideas, coupled with populist notions of the necessity of taking land from railroads and other large corporations to benefit small farmers, influenced state officials to implement drainage policies vigorously so that Everglades land could be used for agriculture.²⁴

The drainage program was facilitated in 1903 when the federal government provided the IIF trustees with the patent to over two million acres of the Everglades, thereby ending several disputes over whether the state, railroad interests, or corporations were entitled to the land.²⁵ With this title secured, state officials actively implemented their own drainage program. Napoleon Bonaparte Broward, a Jacksonville jack-of-all-trades who had previously been employed as a steamboat captain, a sheriff, and a gunrunner, was especially active in promoting drainage.²⁶ In 1904, Broward entered Florida's race for governor, concerned that the state was relying too much on railroads and special interests to drain the land (and consequently was allowing these entities to accumulate large holdings and vast amounts of Florida wealth). During his campaign, Broward "carried his map of the Everglades from one end of the State to another, always crying in the hustings, 'Save and reclaim the people's land!'"²⁷ He pledged that, if elected, he would use state money to drain the land, financing the endeavor by selling the dry tracts for \$5 to \$20 an acre.²⁸

After winning the election, Broward began to implement his promises, thereby inaugurating the first official state-sponsored drainage program. In May 1905, Broward gave a special message to the state legislature dealing exclusively with draining the Everglades. Insisting that it was the "duty" of the IIF trustees to drain Florida lands, he proposed that the state build a system

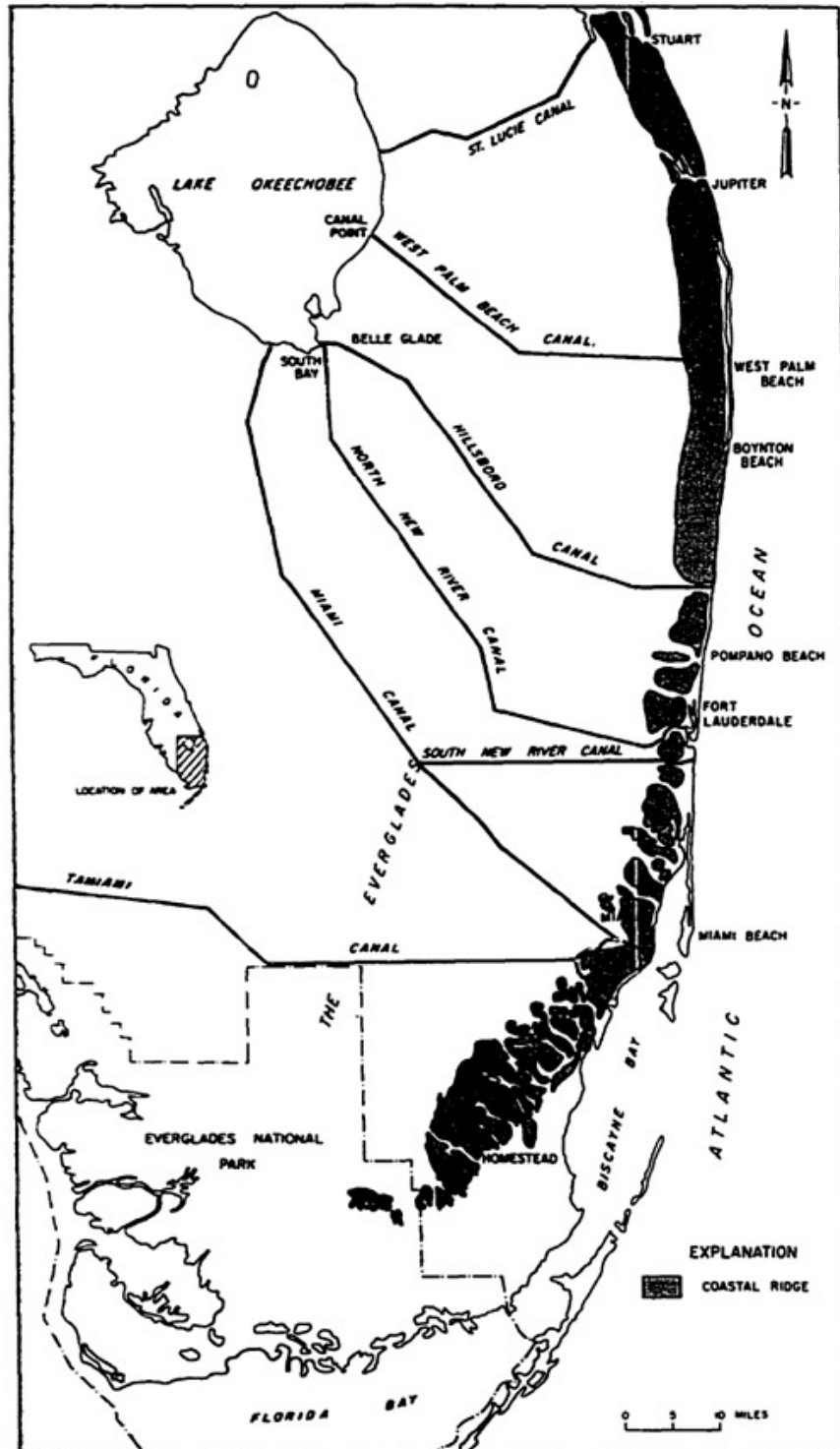
of canals from Lake Okeechobee to the St. Lucie, St. Johns, and Caloosahatchee river basins, thereby allowing the lake's level to drop six feet. Such a scheme would allow large amounts of land, including three million acres held by private interests, to become productive. Broward also proposed that the state pass a constitutional amendment creating a drainage district that would collect taxes from private landowners "in proportion to benefits that the land will derive," thereby producing more money to be used in other drainage efforts.²⁹ The state legislature acted on Broward's recommendation, passing an act in 1903 that created the Everglades Drainage District (EDD) with boundaries roughly corresponding to the two million acres patented to the state in 1903.³⁰

With the EDD in place, Broward ushered in an era of intensive state interest in drainage, including the construction of the New River Canal, running southeast from Lake Okeechobee to the New River near Fort Lauderdale. But in actuality, Broward accomplished relatively little; only 15 miles of canal were dug by the end of his term and the IIF fund had been depleted. Therefore, in December 1908, only a week before his term as governor ended, Broward convinced the IIF trustees to give Richard J. Bolles, a Colorado developer, 500,000 acres of land in exchange for \$1 million. The trustees then proposed that most of this money be used to build five major canals – the North New River, South New River, Miami, Hillsboro, and Caloosahatchee. However, no studies had been completed on whether or not these waterways were practicable, resulting in a sale that "irrevocably committed the State of Florida to a specific drainage project even before the first engineering study regarding its feasibility appeared."³¹



Napoleon Bonaparte Broward. (Source: The Florida Memory Project, State Library and Archives of Florida.)

For the next several years, the state commissioned numerous engineering reports that revised the best methods to drain the land. These included the Wright Report (1909), which facilitated land speculation in South Florida based on low cost estimates of drainage schemes (which turned out to be faulty at best and fraudulent at worst); an Everglades Land Sales Company examination (1912) which recommended that Lake Okeechobee's water levels be regulated to facilitate drainage; and the Randolph Report (1913), which recommended the construction of a control canal from Lake Okeechobee to the St. Lucie River (the St. Lucie Canal) and that became "the master plan for all drainage work."³² By the end of the 1920s, the major drainage canals were largely in place, consisting of the Caloosahatchee Canal, which ran from the western shore of Lake Okeechobee to the Gulf of Mexico; the St. Lucie Canal, which extended from the eastern side of Lake Okeechobee to the Atlantic Ocean; and the West Palm Beach, Hillsboro, North New River, and Miami canals, which all ran from various points on the southern shore of Lake Okeechobee to the Atlantic Ocean.³³



Location of major canals in South Florida. (Source: U.S. Army Corps of Engineers, Jacksonville District.)

As these waterways were completed, agriculture developed in the region south of Lake Okeechobee. In the 1910s and 1920s, many new settlements appeared along the canals extending from Lake Okeechobee, including South Bay (on the North New River Canal), Lake Harbor (by the Miami Canal), Belle Glade (on the Hillsboro Canal), Pahokee (near the West Palm Beach Canal), and Moore Haven (on the southeast shore of Lake Okeechobee). By 1920, 23,000 people resided in the EDD. These numbers increased in the 1920s, in part because of better information about how to make Everglades soil productive and in part because of a growing demand for agricultural products. Perhaps even more important was the development of the sugar industry in the Everglades, started by the Southern Sugar Company in the 1920s and continued by Charles Stewart Mott, who rescued Southern Sugar from bankruptcy and reorganized it as the United States Sugar Corporation in 1931. Because of these efforts, cane sugar quickly became one of the predominant crops in the region.³⁴

Yet even with the drainage works, flooding still occurred periodically in the Everglades region. After excessive rainfall in 1924, the EDD constructed a small dike around the southern end of Lake Okeechobee from Bascom Point to Moore Haven, the region's largest town.³⁵ Unfortunately, the barrier did not hold in 1926 when a hurricane swept over Moore Haven with winds between 130 to 150 miles an hour. Over 400 people were killed, approximately 1,200 had to be evacuated, and thousands of dollars of property damage occurred. Because of the devastation, the IIF trustees appointed an Everglades Engineering Board of Review in 1927 to examine the drainage program established by the Randolph Report, and to make additional recommendations about Everglades reclamation.³⁶



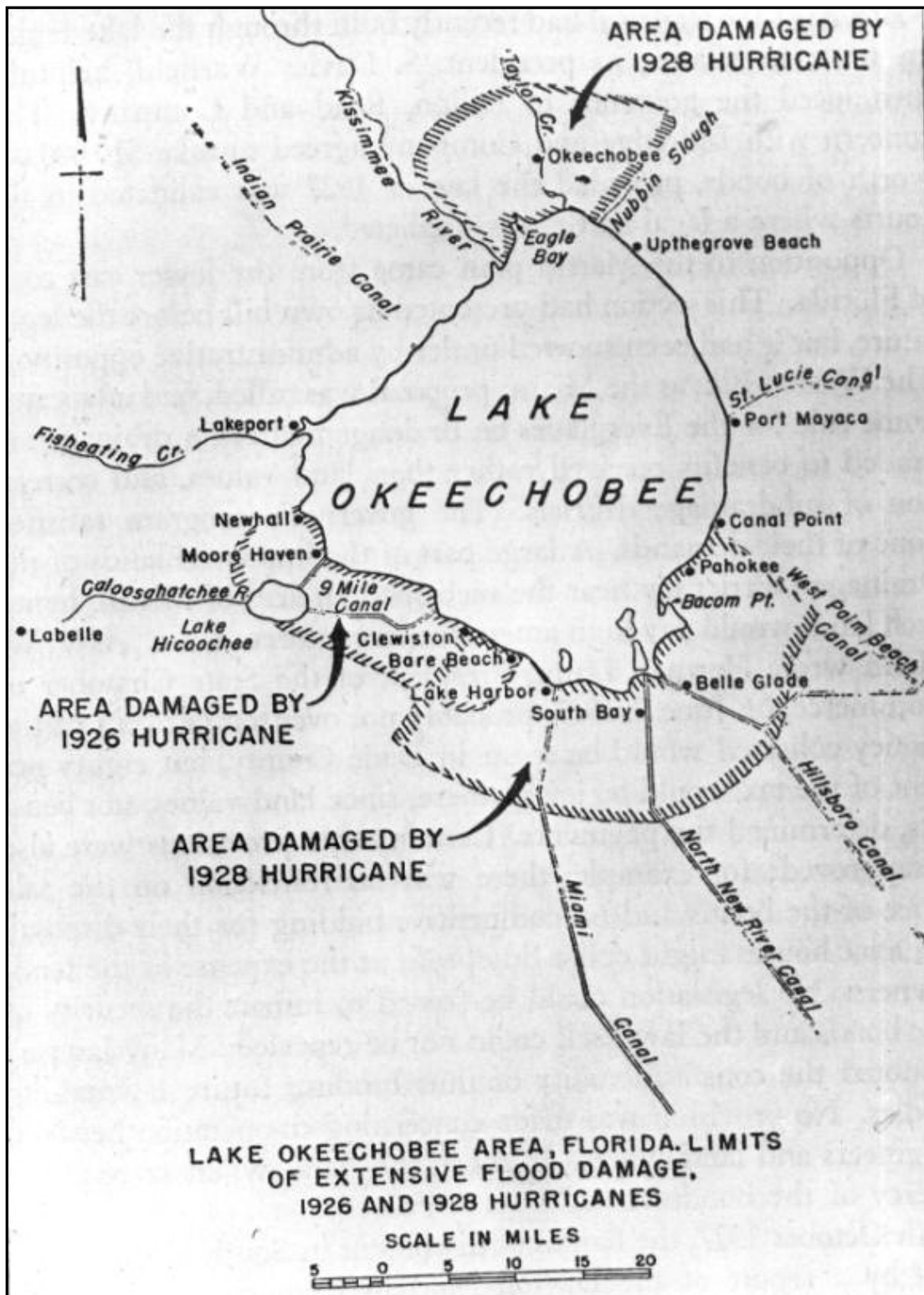
Destruction wreaked by the 1926 hurricane. (Source: The Florida Memory Project, State Library and Archives of Florida.)

The board, which consisted of Anson Marston (a prominent transportation engineer who had worked on the establishment of different highways), S. H. McCrory, and George B. Hills, spent two weeks examining drainage works, records, and data pertaining to reclamation. In its final report, published in May 1927, it stated that the Randolph Report's drainage plan had several fatal flaws, especially in terms of controlling floods. To correct the problems, the board recommended that the EDD complete and deepen the St. Lucie Canal as soon as possible (since its operation would have aided flood control efforts during the 1926 storm); that it enlarge the Caloosahatchee Canal; that Lake Okeechobee be controlled to a maximum and minimum level of 17 and 14 feet above mean low water (Punta Rosa datum, which the U.S. Coast and Geodetic Survey had determined to be 0.88 foot below mean sea level), respectively; and that a "greatly enlarged and highly safeguarded levee" be constructed on the south shores of Lake Okeechobee to protect the surrounding communities.³⁷

The chances of the EDD implementing the board's suggestions were slim, however, because of continued financial problems.³⁸ Then, in 1928, another disaster struck the Lake Okeechobee region. In August and September, torrential rain fell in the area, causing the lake to reach a high level. On 16 September, another hurricane appeared, striking Florida at West Palm Beach and traveling northwest across Lake Okeechobee. Winds reached velocities of 135 miles per hour, causing wind tides and waves on the lake to exceed 29 feet in height on the southeastern shore. Unfortunately, the existing levees extended only 22 feet in elevation, causing water to pour over the dikes and into the streets of Belle Glade and other shore communities to depths of eight feet. The water ripped houses from their foundations and swept terrified residents to their deaths. By the time the hurricane moved on, it had killed over 2,000 people, most of them migrant black laborers.³⁹

Emerging from the disaster, residents called for help. But because of the financial difficulties of the EDD, and because it was unclear whether or not the EDD could properly operate for flood control instead of drainage, the state could do little to provide the desired flood protection. To rectify the situation, the state legislature created the Okeechobee Flood Control District in 1929, with boundaries including all of South Florida beginning at the northern shore of Lake Okeechobee, and directed it to construct flood control structures and to regulate Lake Okeechobee and the Caloosahatchee River to prevent damaging floods.⁴⁰

To fulfill these missions, the Okeechobee district worked closely with the U.S. Army Corps of Engineers, which had already been making investigations as to what could be done to alleviate flooding from Lake Okeechobee. Since the early 1800s, the Corps had been the federal government's leading civil works agency, but most of its construction involved navigation projects on rivers and lakes. Until the 1930s, the federal government regarded flood control mainly as a local responsibility; not until 1936 would Congress recognize flood control as a proper federal activity nationwide, although it did pass a flood control act in 1917, allowing the construction of works on the Sacramento and Mississippi rivers.⁴¹ Likewise, in 1928, Congress authorized the Corps to undertake an ambitious effort on the Lower Mississippi River, covering several states.⁴² In 1924, U.S. Representative Herbert Drane, a Democrat from Florida, introduced a bill into Congress requesting that the Corps examine the Caloosahatchee River to ascertain whether deepening the channel could relieve flooding. Congress passed the act and provided \$40,000, but the Corps, under the leadership of Chief of Engineers Major General



Area hit by the 1928 hurricane. (Source: The Florida Memory Project, State Library and Archives of Florida.)

Edgar Jadwin did not commence any work. After the hurricane passed, the Corps held public hearings at Pahokee and Moore Haven and completed its study, but found no justification for federal action. Nevertheless, Congress passed another bill requiring the Corps to investigate more comprehensively the problem of flood control in the region. After holding public hearings in communities around the lake, Jadwin recommended to Congress in April 1928 that the Corps take no flood control action until state and local resources had been exhausted. Jadwin believed that the plans already in place by the EDD, including enlargement and completion of the St. Lucie Canal, were sufficient. “If carried out,” he promised, “they will provide for the control of floods in these areas with a reasonable factor of safety.”⁴³

After the devastation of the 1928 hurricane, Jadwin reexamined flood control possibilities around Lake Okeechobee, in part because Florida Governor John W. Martin and his cabinet sent a resolution to Congress asking that the federal government construct a high levee around the lake’s southern shore. After considerable study by the Jacksonville District, Jadwin recommended that the Corps undertake a flood control and navigation program consisting of “a channel 6 feet deep and at least 80 feet wide from Lake Okeechobee to Fort Myers” (basically deepening the Caloosahatchee River to make it a second control canal); “the improvement of Taylor Creek to the extent of providing a channel 6 feet deep and 60 feet wide to Okeechobee [C]ity”; and the construction of levees along the south and north shores of the lake to heights of at least 31 feet. Jadwin estimated that the project would cost over \$10 million, and he suggested that the state of Florida or other local interests provide 62.5 percent of that cost, not to exceed \$6.74 million.⁴⁴

Because of the expense of the Corps’ proposal, the Okeechobee Flood Control District hired George B. Hills, one of the members of the 1927 Everglades Engineering Board of Review, to conduct an independent investigation of flood control. He recommended early in 1930 that Congress authorize a navigation and flood control project whereby the Corps, using the existing Caloosahatchee and St. Lucie canals, would build a waterway across Florida through the Everglades. At the same time, Congress requested that the Board of Engineers for Rivers and Harbors review Jadwin’s 1929 report, and in March 1930, the board recommended that the levees be at least 34 feet above sea level and that instead of the \$6 million contribution, the state provide \$3.8 million and build at its own cost the north shore levee.⁴⁵

In the spring of 1930, Congress passed a general river and harbor bill that included these provisions for flood control and navigation. Because many representatives were uneasy about the Corps implementing a flood control project, the House and Senate portrayed the program as primarily one that would improve navigation and provide only incidental flood protection. No matter how it was depicted, the plan, according to U.S. Senator Duncan Fletcher, would allow the Corps to make improvements to the St. Lucie Canal, to expand the levees along Lake Okeechobee’s north and south shores, and to complete the “canalization” of the Caloosahatchee River. Fletcher believed that this would provide a “complete solution of the problems of adequate interstate navigation facilities and flood-control protection.”⁴⁶

Following this plan, the Corps built over 67 miles of dikes along Lake Okeechobee’s south shore – later named the Hoover Dike after President Herbert Hoover – and another 15 miles of levees along the north shore near the city of Okeechobee. These were all constructed to handle crests of 32 to 35 feet in height. The Corps also performed the required deepening of the

Caloosahatchee River, and by March 1938, the entire project was completed.⁴⁷ The Corps then assumed control of regulating the water level of Lake Okeechobee, maintaining a level between 14 and 17 feet through discharges to the St. Lucie Canal and the Caloosahatchee River.

Interesting, however, was the fact that in the 1930s, the U.S. Coast and Geodetic Survey, which had originally demarcated Lake Okeechobee's water levels in accordance with the Punta Rosa Datum (corresponding to the mean low water elevation of the Gulf of Mexico), discovered that the datum plane was not 0.88 foot below mean sea level, but was actually 1.44 feet below mean sea level. Therefore, the original levee construction around Lake Okeechobee, which was supposed to have been 31 feet, was actually only 29.56 feet according to the National Geodetic Vertical Datum (NGVD) of 1929. Many continued to use the old Punta Rosa Datum plane for Lake Okeechobee (designating it as Lake Okeechobee Datum), even though the Corps had to convert the datum before designing any Lake Okeechobee project in order to avoid errors.⁴⁸ Regardless, by the end of the 1930s, the drainage system in southern Florida essentially consisted of the structures that enabled the Corps to regulate Lake Okeechobee; the four major drainage canals (West Palm Beach, Hillsboro, North New River, and Miami); and two canals connecting the four waterways (the Bolles and Cross canals).⁴⁹



A poster commemorating the construction of Hoover Dam. (Source: South Florida Water Management District.)

The success of drainage and flood control efforts, coupled with periods of drought, had detrimental effects on flora and fauna in the Everglades, emphasizing that proper amounts of water were essential to preserve the unique natural resources of the area. The region housed, among other things, orchids, mangroves, magnolia, cypress, mahogany, lignum vitae, rubber trees, egrets, cranes, herons, flamingos, spoonbills, alligators, turkeys, bear, deer, fox, wildcats, panthers, raccoons, and opossums. However, drainage, human settlement, and hunting slowly destroyed this rich diversity of life.⁵⁰ In the late 1800s, a flourishing plume trade brought

hunters of all kinds to the Everglades, where they massacred thousands of egrets by invading rookeries.⁵¹ The Florida state legislature passed a law in 1901 outlawing plume hunting, and the National Audubon Society, first formed in the 1880s, hired four game wardens to patrol the rookeries and enforce the law. Hunters did not welcome this supervision, and on 8 July 1905, Guy Bradley, one of the wardens, was murdered as he investigated a poaching incident, becoming America's first environmental martyr. This event led to laws "which strengthened bird protection and helped bring the significance of the Everglades to the American people."⁵²

Drainage in South Florida only compounded the poaching destruction, as it enabled settlement to encroach on the Everglades. Recognizing the danger that human habitation posed, James Ingraham of the Florida East Coast Drainage and Sugar Company called for the preservation of Paradise Key, located in the Royal Palm area of the current Everglades National Park, in 1905. His efforts led Mary Barr Munroe of the Florida Federation of Women's Clubs to

join the fight, and she, along with several scientists, including botanists David Fairchild and J. K. Small, advocated the creation of a Paradise Key reserve. Heeding these cries, the state established Royal Palm State Park in 1916.⁵³

In the 1920s, Ernest Coe, a landscape architect from Connecticut who had moved to the Miami area, became the loudest voice for Everglades preservation. Coe had always been interested in nature, and he became entranced with the mangroves, the orchids, the giant royal palm trees, and other plants in the Everglades region, as well as the numerous bird rookeries and other wildlife. Coe claimed that these natural attributes justified the creation of a national park to preserve the unique ecology.⁵⁴ In promulgating these views, Coe was drawing on the ideas of many conservationists in the late 1800s and early 1900s who believed that the nation's natural wonders should be preserved as national parks for the enjoyment of future generations. Beginning with Yosemite and Yellowstone, Congress set aside vast tracts of land characterized by monumental scenery – huge mountain peaks, pristine vistas, waterfalls, canyons, and geysers – to protect these resources from exploitation and development, and in 1916, it created the National Park Service (NPS) to manage these areas.⁵⁵

By the 1920s, some Americans had decided that national parks could also preserve plant and wildlife as well as scenery. Coe was one of these, and he began agitating for the creation of a national park to protect the ecology of the Everglades. In 1928, he formed the Tropic Everglades National Park Association and persuaded David Fairchild, a botanist with the U.S. Department of Agriculture, to serve as its first president. For the next several months, Coe, with the aid of the association, studied and mapped the area, conducting surveys by plane and boat. He brought his data to U.S. Senator Duncan U. Fletcher, a Democrat from Jacksonville, and in 1929, Fletcher ushered a bill through Congress authorizing an investigation of the Everglades as a possible national park.⁵⁶

In 1930, an NPS committee, consisting of Director Horace Albright, Assistant Director Arno Cammerer, and Yellowstone National Park Superintendent Roger Toll, explored the Everglades on a four-day tour sponsored by the Tropic Everglades National Park Association. At the conclusion of this inquiry, the committee made a favorable report on the park's creation, and in December 1930, the secretary of the interior recommended that Congress establish a park constituting 2,000 square miles in Dade, Monroe, and Collier counties. However, Florida's congressional delegation had a difficult time passing a bill to create the park, mainly because many members of Congress could not understand why preservation of the area was necessary or important.⁵⁷

The task became easier as more evidence mounted of how drainage and a lack of water affected plants and wildlife in the Everglades. In 1929, New York botanist John Kunkel Small had warned of the pending "extermination" of plants and wildlife in the Everglades because drainage facilitated fires that destroyed the soil. "Florida is being drained and burned to such an extent that it will soon become a desert!" he exclaimed.⁵⁸ Secretary of the Interior Ray Lyman Wilbur echoed these thoughts in 1933, stating that drainage prevented enough fresh water from reaching the Shark River and other waterways in South Florida, thus destroying "the most unique qualities" of the area.⁵⁹ John O'Reilly, a reporter for the *New York Herald Tribune*, also explained how the lack of water affected wildlife, noting that drainage had removed "a single block in the foundation on which the wild beauty and natural abundance of such a region is

built.” The evidence for this, he claimed, was “in the brown and dying vegetation; in the vast fires that have been eating plants and soil alike; [and] in the wholesale migration of birds and animals from a habitat which has been their home since before history.” The solution, O’Reilly believed, was “to get the overflow of Lake Okeechobee directed back onto the Everglades,” thereby reestablishing feeding grounds and allowing “thousands upon thousands of White Ibises and other water birds [to] return to their rookeries.”⁶⁰



The effects of drought on the land. (Source: The Florida Memory Project, State Library and Archives of Florida.)

Influenced by these arguments, Congress passed an act in 1934 authorizing the creation of Everglades National Park. Heeding the report submitted by the NPS committee, this law recommended that an area of approximately 2,000 square miles be established as the Everglades National Park as soon as the state was able to transfer title to the lands to the United States.⁶¹ This large area included much of Dade, Monroe, and Collier counties, including what would become known as the East Everglades area and islands in Florida Bay and the southern Gulf of Mexico. According to NPS Director Arno Cammerer, one of the main reasons for the establishment of the park was “so that the wild life may in fact be protected. . . . [T]he only hope the wild life has of surviving is to come under the protective wings of the National Park Service.”⁶²

Yet one group lost out in this effort to preserve Everglades flora and fauna: the Seminole Indians. The Seminole had originally been part of the Creek Confederacy. After the Yamasee War in the 1710s, a group of Creeks moved into northern Florida. After several years, those Creek that had not relocated began referring to the Florida Creek as *simanó·li*, meaning “wild” or “runaway.” This term eventually morphed into “Seminole,” the English term for this group. After a series of wars in the first half of the nineteenth century, the United States removed the Seminole to southern Florida, establishing a reserve for the group in 1849 in Big Cypress Swamp, and most Seminole took up residence in either the swamp or the Everglades. When the Tamiami Trail was built in 1928, some families moved to areas surrounding the highway in order to conduct business with tourists.⁶³

In 1917, the state of Florida created a reservation for the Seminole out of 99,000 acres of land in Monroe County. Likewise, in the early 1930s, the federal government consolidated several small areas of land into tracts set aside for the Seminole: Brighton (located to the northwest of Lake Okeechobee), Big Cypress (in the northeastern part of Big Cypress Swamp) and Dania (later called Hollywood, located near the eastern coast just south of Fort Lauderdale). Most Seminole ignored these reservations and continued to live wherever they wanted. Yet problems resulted in 1934 because the state reservation lay within the proposed boundaries of Everglades National Park. To resolve the situation, the state agreed to provide the federal government with the Seminole land in exchange for 104,800 acres in Broward and Palm Beach counties. This land lay north of the Tamiami Trail in the eastern part of Big Cypress Swamp.⁶⁴

With the Seminole situation resolved, the state of Florida turned to the task of acquiring additional lands for the park, and it passed an enabling act allowing it to convey tracts to the United States as soon as it acquired them. But despite the best efforts of the Everglades National Park Association and the State Everglades National Park Commission (which had been created in 1935 to handle the land purchase and transfer issues), acquisition proceeded slowly.⁶⁵ One of the problems was that in the early 1940s oil was discovered in southern Florida, and the state began issuing oil and gas leases on the land it owned within the proposed park boundaries. By 1947, Humble Oil and Refining Company alone had produced 230,701 barrels of oil. This caused consternation among many conservationists; an article in *Natural History*, for example, lamented that “liquid death may ooze up from the bowels of the earth to spread its polluting destruction through the fresh water” and called for immediate action “to make certain that the production of oil entails a minimum of damage to the numberless natural assets of this exotic wilderness.”⁶⁶ Despite conservationists’ concerns, drilling continued, and the NPS reported in the early 1940s that it “saw no way of establishing a national park for some time, since the area would be constantly subject to pressure for exploring and drilling for oil.”⁶⁷

In the meantime, wildlife and plants continued to be destroyed. In 1937 and 1938, Daniel Beard, a wildlife technician for the NPS, traversed the Everglades region and made observations about its flora and fauna and the effects of drainage on them.⁶⁸ Beard reported that before drainage began, “the park got the bulk of the western flow and some of the eastern flow that went through the Everglade Keys.”⁶⁹ After the construction of the drainage canals, water entered the park only from the east. Drainage also lowered the water table, leading to the destruction of gator holes and the abandonment of large bird rookeries. According to A. E. Demaray, acting director of the NPS, Beard’s main finding was that “changed water levels are in all probability

fundamentally responsible for the depletion of characteristic plants and animals of the proposed park area.” Based on these conclusions, Demaray proclaimed that “restoration of water levels is fundamental and must be accomplished if the area becomes a park. . . . Water is the basis for the unique features of southern Florida that make it of national park caliber.”⁷⁰ The NPS therefore

called for another extensive study of how drainage and flood control systems had affected the wildlife.

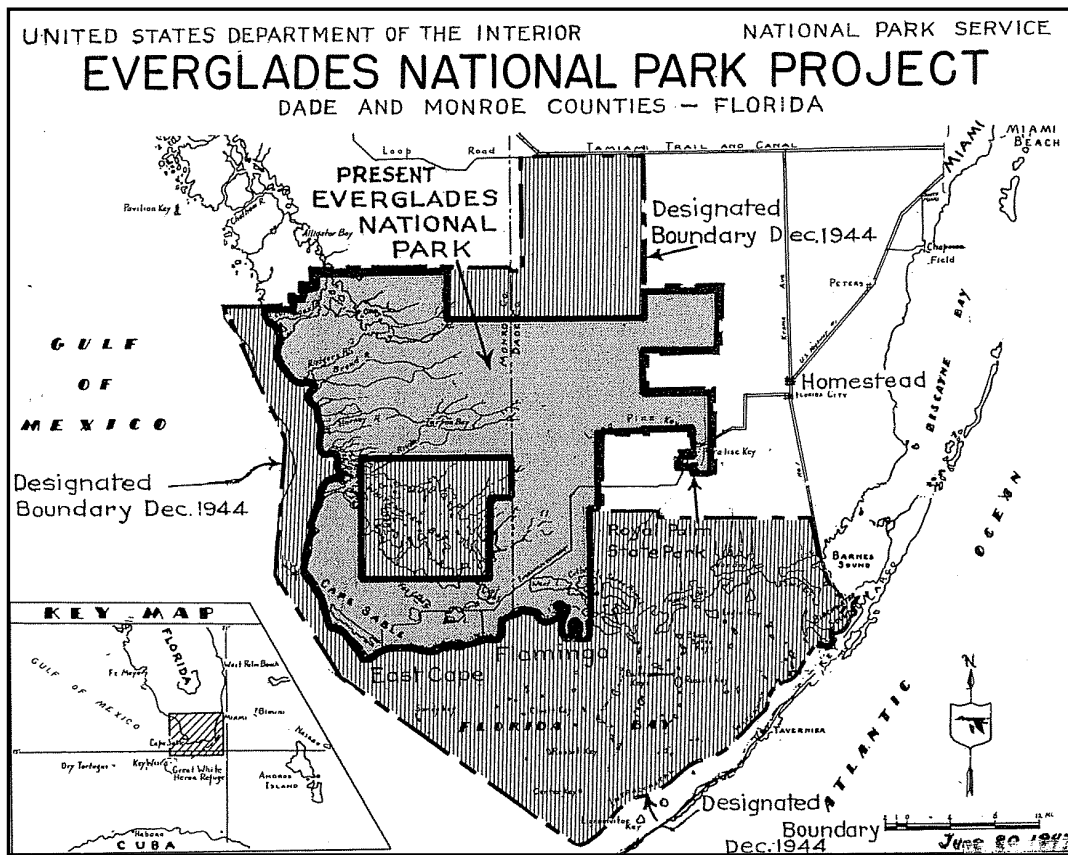


White ibis. (Source: The Florida Memory Project, State Library and Archives of Florida.)

Meanwhile, the NPS participated in meetings in 1939 about saltwater intrusion and a shortage of drinking water for municipalities in South Florida. Although the conference focused on these issues, NPS representatives emphasized that state and federal interests should not deprive the Everglades of water in order to solve the problems. Continued inadequate water supplies, they stated, would “result in increasing the fire risk, decreasing soil building and destroying wildlife.”⁷¹ What was necessary, NPS officials declared, was the “restoration and maintenance of normal water conditions” in order to guarantee the “preservation and restoration of the national park character.”⁷²

An inspection of the Everglades in 1939 by Clifford C. Presnall, assistant chief of the NPS’s Wildlife Division, reiterated the importance of water. Presnall reported that water levels were as much as three feet below normal and that some ditches were completely dry. He believed that “this lowering of the water table would not have been nearly so pronounced had there been no drainage canals.” He blamed drainage for causing bird migrations and for decimating tree snail populations, thereby drastically reducing the number of Everglades kites. Drainage had also caused fire to become “unnaturally preponderant.” Only the restoration of the “unhampered overflow from lake Okeechobee into the Everglades such as existed before the construction of dikes” would alleviate the situation, Presnall asserted, but he understood that the preponderance of agriculture south of Lake Okeechobee would make such a renewal difficult.⁷³

In order to ensure that the animals and plants in the region had at least some form of protection, the state established a state wildlife refuge within the proposed park boundaries. Unfortunately, the designation did little to reduce the destruction, whether by drought or by poaching.⁷⁴ Therefore, on 6 December 1944, Congress passed an act allowing the secretary of the interior to accept “submerged land, or interests therein, subject to such reservations of oil, gas, or mineral rights” within the 2,000 square mile boundary, and to protect such land until the federal government could clear the mineral reservations.⁷⁵ The state then conveyed to the United



Everglades National Park boundaries, 1944. (Source: Records of Everglades National Park, Record Group 79, National Archives and Records Administration II, College Park, Maryland.)

States more than 850,000 acres of land within the proposed boundaries. One publication noted that the land consisted of three areas: Florida Bay; a 34-mile long and three-mile wide strip between Cape Sable and Lostman's River; and 400,000 acres from the Shark River to Royal Palm State Park and north to Forty Mile Bend on the Tamiami Trail, a highway constructed in the 1910s and 1920s from Miami to Fort Myers and Tampa. Some of the lands not included were those in the Big Cypress region, those north of the Tamiami Trail, those located on the upper keys, and those which would become known as the East Everglades.⁷⁶ All of the deeded land was designated as the Everglades Wildlife Refuge, and the U.S. Fish and Wildlife Service was given administrative authority over it, with Daniel Beard as manager.⁷⁷

Because of continuing difficulties with acquiring private land and with oil and gas rights, the state agreed in 1947 to the establishment of a "minimum" park, something that would at least get portions of the Everglades protected. This acreage, totaling 454,000 acres and corresponding roughly to the third section deeded to the United States in 1944, became Everglades National Park on 27 June 1947 when Secretary of the Interior J. A. Krug issued Order No. 2338.⁷⁸ Both park and state officials regarded this "minimum" park as only the beginning, noting that additional land to total 1,282,000 acres would "ultimately . . . be added to the park."⁷⁹ President Harry Truman officially dedicated the park on 6 December 1947, making it the first national park

to be established not for its scenery but solely to protect its flora and fauna.⁸⁰ According to Acting Secretary of the Interior Warner W. Gardner, the establishment of the park only was a first step in its creation; more acreage would be added as it became available.⁸¹

Everglades National Park advocates, as well as NPS personnel, were enthusiastic about the park's creation, believing that it was a step in the right direction for the preservation of the unique flora and fauna of southern Florida. However, because it was, in the words of Marjory Stoneman Douglas, "the only national park in which the wild-life, the crocodiles, the trees, the orchids, will be more important than the sheer geology of the country," it was essential that the flora and fauna had sufficient water.⁸² Just two days before the creation of the park, NPS officials had reiterated that "this new national park is dependent to a large degree on the conservation and favorable distribution of the surface waters of the lower Everglades drainage basin." Therefore, "the restoration of natural conditions is the first requirement in any plan for bringing back many forms of wildlife which have been reduced to critical numbers." The NPS expressed its interest and concern "with any plans dealing with drainage, storage, and distribution of the waters of the lower Everglades," and believed that it was now an active player in any decisions involving this resource.⁸³

In the 100 years following the state's declaration of interest in drainage, southern Florida had undergone vast transformations. Several canals had been built, and rivers flowing out of Lake Okeechobee had been channelized in order to control flooding from the lake and to remove water from the land. Settlement and agriculture had quickly followed the desiccation of land; the lower east coast of Florida's population had increased from 22,961 in 1900 to 228,454 in 1930, while cane sugar production had doubled between 1931 and 1941. Although the state had initiated drainage operations and implemented them for much of the first half of the twentieth century, it ultimately had to turn to the U.S. Army Corps of Engineers for flood control works. Yet all of these structures, whether for drainage or for flood control, had serious consequences for southern Florida's flora and fauna, especially in the Everglades.

The federal government created Everglades National Park in 1947 to protect these resources, but the problem of ensuring that the park received adequate water remained. Many, including John H. Baker, executive director of the National Audubon Society, believed that the solution lay in "an intelligent water-control and land-use plan, backed by adequate legislative and administrative authority" and executed by "a qualified hydraulic engineer."⁸⁴ Whether one could be developed remained to be seen.



August Burghard and Ernest Coe at the dedication of Everglades National Park. (Source: The Florida Memory Project, State Library and Archives of Florida.)

Chapter One Endnotes

¹ George E. Buker, *Sun, Sand and Water: A History of the Jacksonville District, U.S. Army Corps of Engineers, 1821-1975* (Fort Belvoir, Va.: U.S. Army Corps of Engineers, 1981), 104.

² For examples of discussions of this period, see McCally, *The Everglades*; Nelson Manfred Blake, *Land Into Water – Water Into Land: A History of Water Management in Florida* (Tallahassee: University of Florida Presses, 1980); Lamar Johnson, *Beyond the Fourth Generation* (Gainesville: The University Presses of Florida, 1974); Junius Elmore Dovell, “A History of the Everglades of Florida,” Ph.D. dissertation, University of North Carolina at Chapel Hill, 1947; and Christopher F. Meindl, “Past Perceptions of the Great American Wetland: Florida’s Everglades during the Early Twentieth Century,” *Environmental History* 5 (July 2000): 378-395.

³ Marjory Stoneman Douglas, *The Everglades: River of Grass*, 50th anniversary edition (Sarasota, Fla.: Pineapple Press, 1997), 68.

⁴ Douglas, *The Everglades*, 68-70; McCally, *The Everglades*, 39-53.

⁵ McCally, *The Everglades*, 53-57, 59-60 (quotation on p. 56); see also Charlton W. Tebeau, *A History of Florida* (Coral Gables, Fla.: University of Miami Press, 1971), 19; Douglas, *The Everglades*, 185-188, 196-245; and Robert H. Keller and Michael F. Turek, *American Indians & National Parks* (Tucson: The University of Arizona Press, 1998), 217.

⁶ Grunwald, *The Swamp*, 40-47.

⁷ “Resolution by the Legislature of Florida,” in Senate, *Everglades of Florida*, 62d Cong., 1st sess., 1911, S. Doc. 89, Serial 6108, 34-35.

⁸ “Report of Buckingham Smith, Esq., on His Reconnaissance of the Everglades, 1848,” in Senate, *Everglades of Florida*, 46.

⁹ “Report of Buckingham Smith,” 46-47, 49-50, 53.

¹⁰ McCally, *The Everglades*, 88.

¹¹ Act of 28 September 1850, in Senate, *Everglades of Florida*, 67.

¹² Quotation in McCally, *The Everglades*, 88; see also “Acts of Florida Legislatures (1851-1855) Relating to the Everglades,” in Senate, *Everglades of Florida*, 67-68; and “History of Drainage and Reclamation Work in the Everglades of Florida,” in Senate, *Everglades of Florida*, 7.

¹³ Douglas, *The Everglades*, 266.

¹⁴ Lieutenant J. C. Ives, *Memoir to Accompany a Military Map of the Peninsula of Florida, South of Tampa Bay* (New York: M. B. Wynkoop, 1856), 5-7.

¹⁵ Grunwald, *The Swamp*, 67.

¹⁶ McCally, *The Everglades*, 89; Grunwald, *The Swamp*, 67-72.

¹⁷ Quotation in Blake, *Land Into Water*, 75; see also McCally, *The Everglades*, 89; Grunwald, *The Swamp*, 85-87.

¹⁸ Quotation in Ann Vileisis, *Discovering the Unknown Landscape: A History of America’s Wetlands* (Washington, D.C.: Island Press, 1997), 136; see also Blake, *Land Into Water*, 81-83; McCally, *The Everglades*, 89; and Light and Dineen, “Water Control in the Everglades: A Historical Perspective,” 53. The traditional historical accounts of Disston’s death label it as a suicide, but more recent publications, including works by Joe Knetsch, a historian with the Florida Division of State Lands, and Michael Grunwald, a *Washington Post* reporter, attribute his death to heart problems, citing the coroner’s report and several obituaries at the time. See Joe Knetsch, “Hamilton Disston and the Development of Florida,” *Sunland Tribune* 24, no. 1 (1998): 5-19; Grunwald, *The Swamp*, 96.

¹⁹ Blake, *Land Into Water*, 84-87; Grunwald, *The Swamp*, 99-109.

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²⁰ “Report by Dr. H. W. Wiley, of the Bureau of Chemistry, United States Department of Agriculture, in 1891, on the Muck Lands of the Florida Peninsula,” in Senate, *Everglades of Florida*, 73-74.

²¹ “Message of Gov. W. S. Jennings to the Legislature of Florida Relative to Reclamation of Everglades,” in Senate, *Everglades of Florida*, 84.

²² Samuel P. Hays, *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920* (Cambridge: Harvard University Press, 1959; reprint, New York: Atheneum, 1969), 2; references are to the reprint edition. Hays’ book is one of the best sources on the conservation movement in the late 1800s and early 1900s.

²³ Introduction to Napoleon B. Broward, “Homes for Millions: Draining the Everglades,” *Collier’s* 44 (22 January 1910): 19.

²⁴ Quotation in Blake, *Land Into Water*, 88; see also Meindl, “Past Perceptions of the Great American Wetland,” 379; Vileisis, *Discovering the Unknown Landscape*, 113. For information about engineering studies and the Progressive influence, see Jeffrey Glenn Strickland, “The Origins of Everglades Drainage in the Progressive Era: Local, State and Federal Cooperation and Conflict,” M.A. thesis, Florida Atlantic University, 1999, 69-81.

²⁵ Quotations in W. Turner Wallis, “The History of Everglades Drainage and Its Present Status,” *Soil Science Society of Florida Proceedings*, 4-A (1942): 31-32; see also Dovell, “A History of the Everglades of Florida,” 178; Strickland, “The Origins of Everglades Drainage in the Progressive Era,” 127; McCally, *The Everglades*, 88; and Blake, *Land Into Water*, 94.

²⁶ For a complete biography of Broward, see Samuel Proctor, *Napoleon Bonaparte Broward: Florida’s Fighting Democrat* (Gainesville: University of Florida Press, 1950).

²⁷ Quotation in S. Mays Ball, “Reclaiming the Everglades: Reversing the Far Western Irrigation Problem,” *Putnam’s Magazine* 7 (April 1910): 798; see also Grunwald, *The Swamp*, 131.

²⁸ N. P. Broward, “Draining the Everglades,” *The Independent* 64 (25 June 1908): 1448; Blake, *Land Into Water*, 95-96; Vileisis, *Discovering the Unknown Landscape*, 136-137.

²⁹ “Message of Gov. N. B. Broward to the Legislature of Florida Relative to Reclamation of Everglades,” in Senate, *Everglades of Florida*, 99-109.

³⁰ Blake, *Land Into Water*, 97; McCally, *The Everglades*, 92; Grunwald, *The Swamp*, 134-140.

³¹ Quotation in McCally, *The Everglades*, 93-94; see also Blake, *Land Into Water*, 105; Grunwald, *The Swamp*, 141-142. For more information about drainage under Broward’s administration, see Proctor, *Napoleon Bonaparte Broward*, 216-224, 240-260

³² McCally, *The Everglades*, 114.

³³ McCally, *The Everglades*, 95-98, 100-102, 109-110; Blake, *Land Into Water*, 107-112, 116-117, 120-121, 127-128; Meindl, “Past Perceptions of the Great American Wetland,” 383-384. For information about the Wright Report, see “Report on the Drainage of the Everglades of Florida by J. O. Wright, Supervising Drainage Engineer,” in Senate, *Everglades of Florida*, 140-180; and Aaron D. Purcell, “Plumb Lines, Politics, and Projections: The Florida Everglades and the Wright Report Controversy,” *The Florida Historical Quarterly* 80 (Fall 2001): 161-197. For the Everglades Land Sales Company report, see Daniel W. Mead, Allen Hazen, and Leonard Metcalf, *Report on the Drainage of the Everglades of Florida* (Chicago: Board of Consulting Engineers, 1912). For the Randolph Report, see Senate, *Florida Everglades: Report of the Florida Everglades Engineering Commission to the Board of Commissioners of the Everglades Drainage District and the Trustees of the Internal Improvement Fund, State of Florida*, 63d Cong., 2d sess., 1913, S. Doc. 379, Serial 6574.

³⁴ Blake, *Land Into Water*, 130-132; McCally, *The Everglades*, 121-125; Howard Sharp, “Farming the Muck Soil of the Everglades,” *The Florida Grower* 32 (7 November 1925): 4; John A. Heitmann, “The Beginnings of Big Sugar in Florida, 1920-1945,” *The Florida Historical Quarterly* 77 (Summer 1998): 44, 50-54; J. Carlyle Sitterson,

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³⁵ Robert Mykle, *Killer 'Cane: The Deadly Hurricane of 1928* (New York: Cooper Square Press, 2002), 34, 36.

³⁶ McCally, *The Everglades*, 135; Blake, *Land Into Water*, 134-136; Grunwald, *The Swamp*, 186-189; Okeechobee Flood Control District, *A Report to the Board of Commissioners of Okeechobee Flood Control District on the Activities of the District and on Lake Okeechobee*, copy in Library, Jacksonville District, U.S. Army Corps of Engineers, Jacksonville, Florida.

³⁷ Everglades Engineering Board of Review, *Report of Everglades Engineering Board of Review to Board of Commissioners of Everglades Drainage District* (Tallahassee, Fla.: T. J. Appleyard, 1927), 5-16, 52.

³⁸ McCally, *The Everglades*, 139-140.

³⁹ Blake, *Land Into Water*, 136; McCally, *The Everglades*, 139; Grunwald, *The Swamp*, 192-194; Edgar Jadwin, Major General, Chief of Engineers, to Hon. Wesley L. Jones, 31 January 1929, in Senate, *Caloosahatchee River and Lake Okeechobee Drainage Areas, Florida*, 70th Cong., 2d sess., 1929, S. Doc. 213, Serial 9000, 2. For a full discussion of the hurricane and its impacts, see Mykle, *Killer 'Cane* and Eliot Kleinberg, *Black Cloud: The Great Florida Hurricane of 1928* (New York: Carroll & Graf Publishers, 2003).

⁴⁰ Okeechobee Flood Control District, *A Report to the Board of Commissioners of Okeechobee Flood Control District on the Activities of the District and on Lake Okeechobee*, 7-8; see also Senate Committee on Commerce, *Rivers and Harbors: Hearings Before the Committee on Commerce, United States Senate, Part 3*, 71st Cong., 2d sess., 1930, 322-323.

⁴¹ For more information on the 1917 act, see Matthew T. Pearcy, "A History of the Ransdell-Humphreys Flood Control Act of 1917," *Louisiana History* 41 (Spring 2000): 133-159.

⁴² Joseph L. Arnold, *The Evolution of the 1936 Flood Control Act* (Fort Belvoir, Va.: Office of History, United States Army Corps of Engineers, 1988), iii; Martin Reuss, *Designing the Bayous: The Control of Water in the Atchafalaya Basin, 1800-1995* (College Station: Texas A&M University Press, 2004), 121. Because the Flood Control Act of 1917 only applied to the lower Mississippi and the Sacramento river basins, Reuss contends that the 1936 Flood Control Act was "the real beginning of comprehensive federal flood control work." Martin Reuss, "Introduction," *The Flood Control Challenge: Past, Present, and Future*, Howard Rosen and Martin Reuss, eds. (Chicago: Public Works Historical Society, 1988), x-xi.

⁴³ Quotation in Edgar Jadwin, Major General, Chief of Engineers, to The Secretary of War, April 2, 1928, in House, *Caloosahatchee River and Lake Okeechobee Drainage Areas, Florida*, 70th Cong., 1st sess., 1928, H. Doc. 215, Serial 8900, 5; see also McCally, *The Everglades*, 138-139; Blake, *Land Into Water*, 142-143; Grunwald, *The Swamp*, 197-199.

⁴⁴ Quotations in Jadwin to Jones, 31 January 1929, in Senate, *Caloosahatchee River and Lake Okeechobee Drainage Areas*, 7; see also Blake, *Land Into Water*, 143-144; McCally, *The Everglades*, 139.

⁴⁵ Quotation in Blake, *Land Into Water*, 146; see also Lytle Brown, Major General, Chief of Engineers, to Hon. Hiram W. Johnson, 15 March 1930, in Senate, *Caloosahatchee River and Lake Okeechobee Drainage Areas, Fla.*, 71st Cong., 2d sess., 1930, Serial 9219, 4-6; Okeechobee Flood Control District, *A Report to the Board of Commissioners of Okeechobee Flood Control District*, 8-9.

⁴⁶ Quotation in Duncan U. Fletcher to Hon. Hiram W. Johnson, 13 May 1930, in Senate Committee on Commerce, *Rivers and Harbors: Hearings Before the Committee on Commerce, United States Senate, Seventy-First Congress, Second Session, Part 1*, 71st Cong., 2d sess., 1930, 203-205; see also Johnson, *Beyond the Fourth Generation*, 151.

⁴⁷ Untitled document beginning "Q3: Hoover Dike Design," File Lake O, Box 745, JDAR; Okeechobee Flood Control District, *A Report to the Board of Commissioners of Okeechobee Flood Control District*, 22. The dike itself was not formally dedicated until 12 January 1961, when it was named after President Herbert Hoover. Kleinberg, *Black Cloud*, 198.

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⁴⁹ Light and Dineen, “Water Control in the Everglades: A Historical Perspective,” 55.

⁵⁰ “Florida Fairyland,” *Reader’s Digest* 28 (June 1936): 32.

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⁵² Quotation in Cesar A. Becerra, “Birth of Everglades National Park,” *South Florida History* 25-26 (Fall 1997/Winter 1998): 12. For more information on Bradley’s death, see Stuart A. McIver, “Death of a Bird Warden,” *South Florida History* 29 (Fall 2001): 20-27; Stuart A. McIver, *Death in the Everglades: The Murder of Guy Bradley, America’s First Martyr to Environmentalism* (Gainesville: University Press of Florida, 2003).

⁵³ Becerra, “Birth of Everglades National Park,” 12-14; Vileisis, *Discovering the Unknown Landscape*, 157-158; Grunwald, *The Swamp*, 170-171.

⁵⁴ Theodore Pratt, “Papa of the Everglades National Park,” *The Saturday Evening Post* 220 (9 August 1947): 46, 49; Grunwald, *The Swamp*, 206-208.

⁵⁵ For more information on the development of the national park movement in America, see Alfred Runte, *National Parks: The American Experience*, 3rd edition (Lincoln: University of Nebraska Press, 1997).

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⁵⁷ See, for example, Fletcher to Paine, 10 July 1934; David Fairchild, “The Everglades National Park as an Introduction to the Tropics,” at Library of Congress, “Reclaiming the Everglades: South Florida’s Natural History, 1884-1934” <<http://memory.loc.gov/ammem/award98/fmuhtml/everhome.html>> (1 December 2004).

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⁵⁹ As quoted in “The Proposed Everglades National Park,” *Science* 77 (17 February 1933): 185.

⁶⁰ John O’Reilly, “Wildlife Protection in South Florida,” *Bird-Lore* 41 (May-June 1939): 130, 136, 138.

⁶¹ Act of 30 May 1934 (48 Stat. 816).

⁶² Quotation in Arno B. Cammerer, Director, Memorandum for Mr. Poole, Assistant Solicitor, 2 April 1934, File Everglades H.R. 2837, Box 903, Entry 7, RG 79, NARA II; see also Newton B. Drury, Director, to The Secretary, 10 May 1948, File 0-10 Laws and Legal Matters, Box 902, Entry 7, RG 79, NARA II.

⁶³ Buffalo Tiger and Harry A. Kersey, Jr., *Buffalo Tiger: A Life in the Everglades* (Lincoln: University of Nebraska Press, 2002), 7; William C. Sturtevant and Jessica R. Cattelino, “Florida Seminole and Miccosukee,” in *Handbook of North American Indians*, ed. William Sturtevant, vol. 14, *Southeast*, ed. Raymond D. Fogelson (Washington, D.C.: Smithsonian Institution, 2004), 429-438; Keller and Turek, *American Indians and National Parks*, 217. For more information on the early history of the Seminole in the Everglades and Big Cypress Swamp, see Brent Richards Weisman, *Unconquered People: Florida’s Seminole and Miccosukee Indians* (Gainesville: University Press of Florida, 1999), 66-89, 123-124.

⁶⁴ Sturtevant and Cattelino, “Florida Seminole and Miccosukee,” 438; Harry A. Kersey, Jr., “The East Big Cypress Case, 1948-1987: Environmental Politics, Law, and Florida Seminole Tribal Sovereignty,” *The Florida Historical Quarterly* 69 (April 1991): 457-458; Patricia R. Wickman, “The History of the Seminole People of

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Florida,” *The Seminole Tribune*, copy at <<http://www.semtribe.com/tribune/40anniversary/history.shtml>> (5 January 2006).

⁶⁵ A. S. Houghton to Hon. Harold L. Ickes, Secretary of the Interior, 15 April 1938, File Everglades H.R. 2837, Box 903, Entry 7, RG 79, NARA II.

⁶⁶ Quotation in Kenneth D. Morrison, “Oil in the Everglades,” *Natural History* 53 (June 1944): 282; see also Alfred Jackson Hanna and Kathryn Abbey Hanna, *Lake Okeechobee: Wellspring of the Everglades* (Indianapolis, Ind.: The Bobbs-Merrill Company, 1948), 345.

⁶⁷ Quotation in Department of the Interior, Information Service, National Park Service, For Immediate Release, n.d., File 714 Fishes, Box 919, Entry 7, RG 79, NARA II; see also Ernest F. Coe, Director, Everglades National Park Assn., Inc., to Honorable Harold L. Ickes, Secretary of the Interior, 21 April 1937, *ibid.*

⁶⁸ A. E. Demaray, Acting Director, to Mr. Abel Wolman, National Resources Committee, 12 June 1939, File E. G. 660-05 Water Supply Systems (Gen.), Box 918, Entry 7, RG 79, NARA II.

⁶⁹ Daniel Beard, “Wildlife Reconnaissance: Everglades National Park Project,” October 1938, 46, 50, copy provided by Nancy Russell, Museum Curator, Everglades and Dry Tortugas National Parks, Homestead, Florida.

⁷⁰ Demaray to Wolman, 12 June 1939.

⁷¹ O. B. Taylor, Regional Wildlife Technician, Memorandum for the Regional Director, Region I, 18 July 1939, File 801-02 Floods Everglades, Box 920, Entry 7, RG 79, NARA II.

⁷² J. R. White, Acting Director, National Park Service, to C. G. Paulsen, Acting Chairman, Departmental Committee on Water Resources, 8 August 1939, File E. G. 660-05 Water Supply Systems (Gen.), Box 918, Entry 7, RG 79, NARA II.

⁷³ Clifford C. Presnall, “Wildlife Report on the Everglades National Park (Proposed),” 1-6, File 207 Paul Bartsch, Box 905, Entry 7, RG 79, NARA II.

⁷⁴ James O. Stevenson, Assistant in Charge, Section on National Park Wildlife, Memorandum for Mr. Ben Thompson, National Park Service, 26 June 1942, File 720-04 Everglades, Box 920, Entry 7, RG 79, NARA II.

⁷⁵ Act of 6 December 1944 (58 Stat. 794).

⁷⁶ Quotation in “The President’s Report to You,” *Audubon Magazine* 47 (January-February 1945): 46-47; see also Vileisis, *Discovering the Unknown Landscape*, 190-191.

⁷⁷ Newton B. Drury, Director, National Park Service, to The Secretary, 10 May 1948, File 0-10 Laws and Legal Matters, Box 902, Entry 7, RG 79, NARA II.

⁷⁸ United States Department of the Interior, Title 36—Parks and Forests, Chapter I—National Park Service, Department of the Interior, Order Establishing the Everglades National Park, Florida, in File Everglades National Park—Washington Liaison Office June 1947-July 1947, Box 900, Entry 7, RG 79, NARA II.

⁷⁹ “Everglades Becomes 28th National Park,” National Park Service Advance Release, 20 June 1947, File Everglades National Park—Washington Liaison Office, June 1947-July 1947, Box 900, Entry 7, RG 79, NARA II.

⁸⁰ J. A. Krug, Secretary of the Interior, to Hon. Millard F. Caldwell, Governor of Florida, 2 April 1947, File Everglades National Park—1947, Box Labeled Everglades National Park 1950’s, State Lands Records Vault, Division of State Lands, Florida Department of Environmental Protection, Marjory Stoneman Douglas Building, Tallahassee, Florida; Runte, *National Parks*, 108-109. For copies of speeches given during the dedication, see “Superintendent’s Monthly Narrative Report for the month of December 1947 for Everglades National Park,” 2 January 194[8], File 207-02.3 Everglades Supt. Report, Box 906, Entry 7, RG 79, NARA II.

⁸¹ Warner W. Gardner, Acting Secretary of the Interior, to Senator Butler, ca. 25 June 1947, File Everglades National Park—Washington Liaison Office June 1947-July 1947, Box 900, Entry 7, RG 79, NARA II. The Royal Palm State Park was included in the 454,000 acres.

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⁸² Douglas, *The Everglades*, 381.

⁸³ “Statement of the Interests of The National Park Service, United States Department of the Interior in the Water Resources of the Everglades,” 18 June 1947, File Everglades National Park—Washington Liaison Office June 1947-July 1947, Box 900, Entry 7, RG 79, NARA II.

⁸⁴ John H. Baker, “Time Is Running Out on the Everglades,” *Audubon Magazine* 45 (May-June 1943): 177.