The dredge-and-fill method, which would later be criticized for its environmental impact, employed in the peak years of the early 1960s as many as four dredges and ten draglines, which at times operated around the clock. Hydraulic dredges, such as *Oliver Douglas* (Figure 6), were floating barges that pumped bay-bottom sediments in a liquid solution onto an emerging upland site. Draglines mechanically moved fill from canals to the uplands by dragging buckets across the ground (Figure 7). Building sites were bulldozed and leveled, and, in the process, nearly all vegetation was removed prior to construction (Figure 8).

By the early 1960s, over 50 million cubic yards of fill had been moved to create the Cape Coral development (Figure 9). This included dredging some 170 miles of saltwater accessible canals and three basins, as well as 14

Figure 7. Dragline at Cape Coral, 1962.

Figure 8. Cape Coral oblique aerial photograph, 1959.

Figure 9. Cape Coral at Redfish Point, oblique aerial photograph, 1961.

landlocked lakes.Waterway construction totaled about 250 miles by the mid-1970s. But Gulf American's days were numbered. Conflicts over dredging permits, due to emerging public concerns about potential environmental impacts, were costly. The company misjudged the regulatory climate. Large holdings became undevelopable, and in 1969, the Rosen brothers sold out. The City of Cape Coral, incorporated in 1970, was a community of over 20,000 residents. Its location on the north shore of the Caloosahatchee and its canalfront homesite development have retained the hallmark qualities of the American Dream through the years — waterfront living in a Florida setting (Figure10).

Figure 10. Redfish Point, 1999.

The natural waterway along the winding Caloosahatchee was widened, straightened and deepened after flood waters of the 1928 hurricane killed hundreds of people around Lake Okeechobee. Today, Ft. Myers is the largest city on Florida's "original cross-state canal," linking the east and west coasts of the state.

The Ultimate Waterfront Paradise in Southwest Florida: Marco Island

Marco Island was the single-largest undeveloped track of barrier island property in Southwest Florida in 1962 when the Mackle brothers — Elliott, Robert, and Frank — visited the site, lured by the prospect that the Colliers (descendents of Barron Collier, the advertising magnate) were interested in selling their 10,327-acre land holding, 6,700 on Marco and the rest on the mainland. The brothers purchased the Collier property for $7 million. They were experienced land developers, having created Miami's Key Biscayne, an upscale waterfront community, and through General Development Corp., developed the 118,000-acre Port Charlotte community on Charlotte Harbor's north shore. The Mackles sold General Development in 1961 and formed a new company, Deltona, which proceeded to develop homesites near Deland and Daytona Beach, Fla. The Deltona Corporation would be the corporate instrument to transform Marco into the ultimate waterfront paradise.

Figure 11, taken in December 1951, shows Marco Island in its pre–development state. Only two settlements existed: Marco Village on the north and Goodland on the east. Scrub vegetation covered most of Marco Island and an extensive mangrove shoreline fringed the river and bays in the pre–development period of time. Crescent Beach, the 5-mile sweep of Gulf shore between Big Marco and Caxambas Passes, was a vast, expanse of white sand. Mosquitoes were a constant menace of Marco Island because of the large intertidal areas on the bayside. There was a limited supply of freshwater and no sanitation infrastructure.

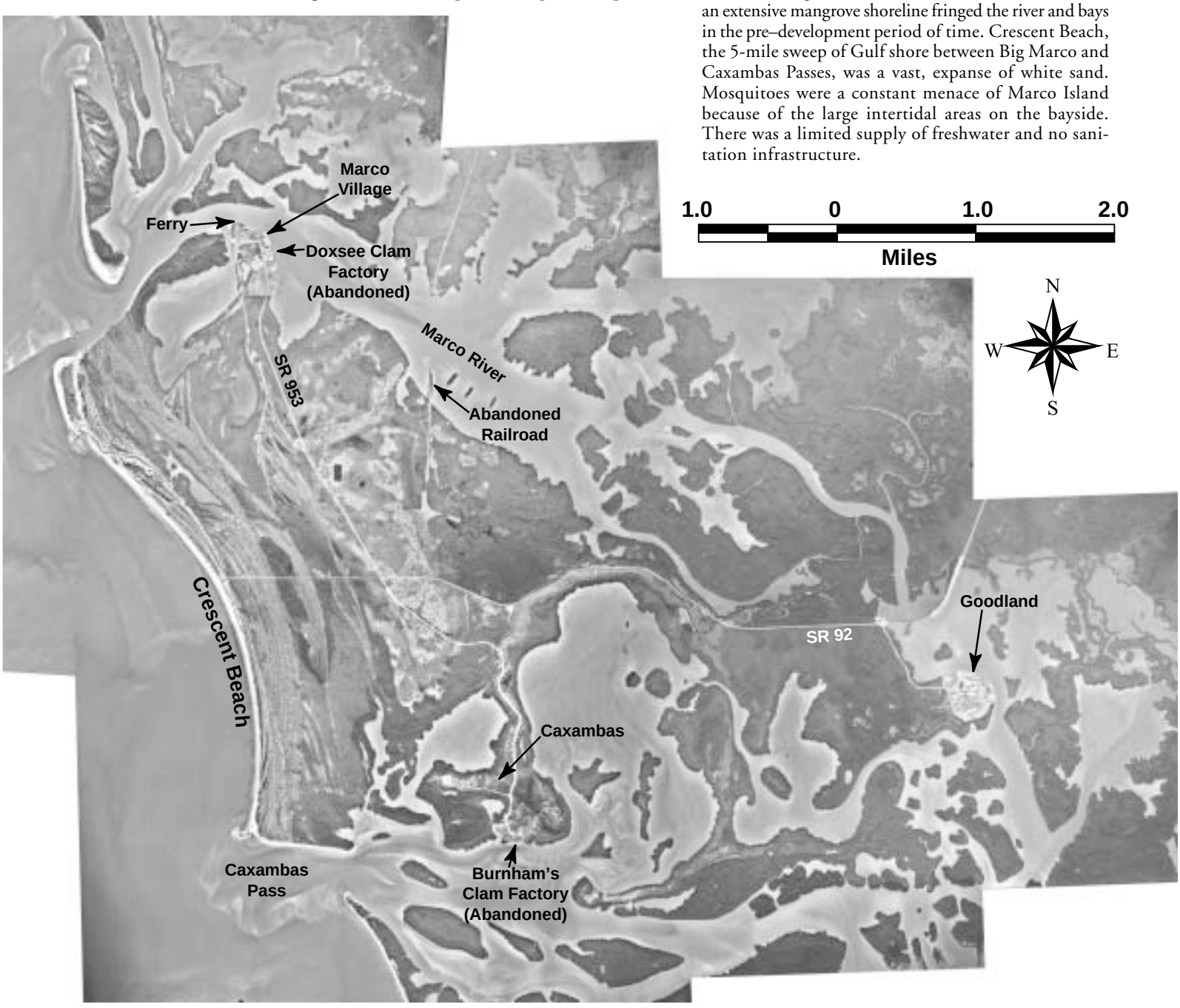


Figure 11. Marco Island aerial photomosaic, 1951.

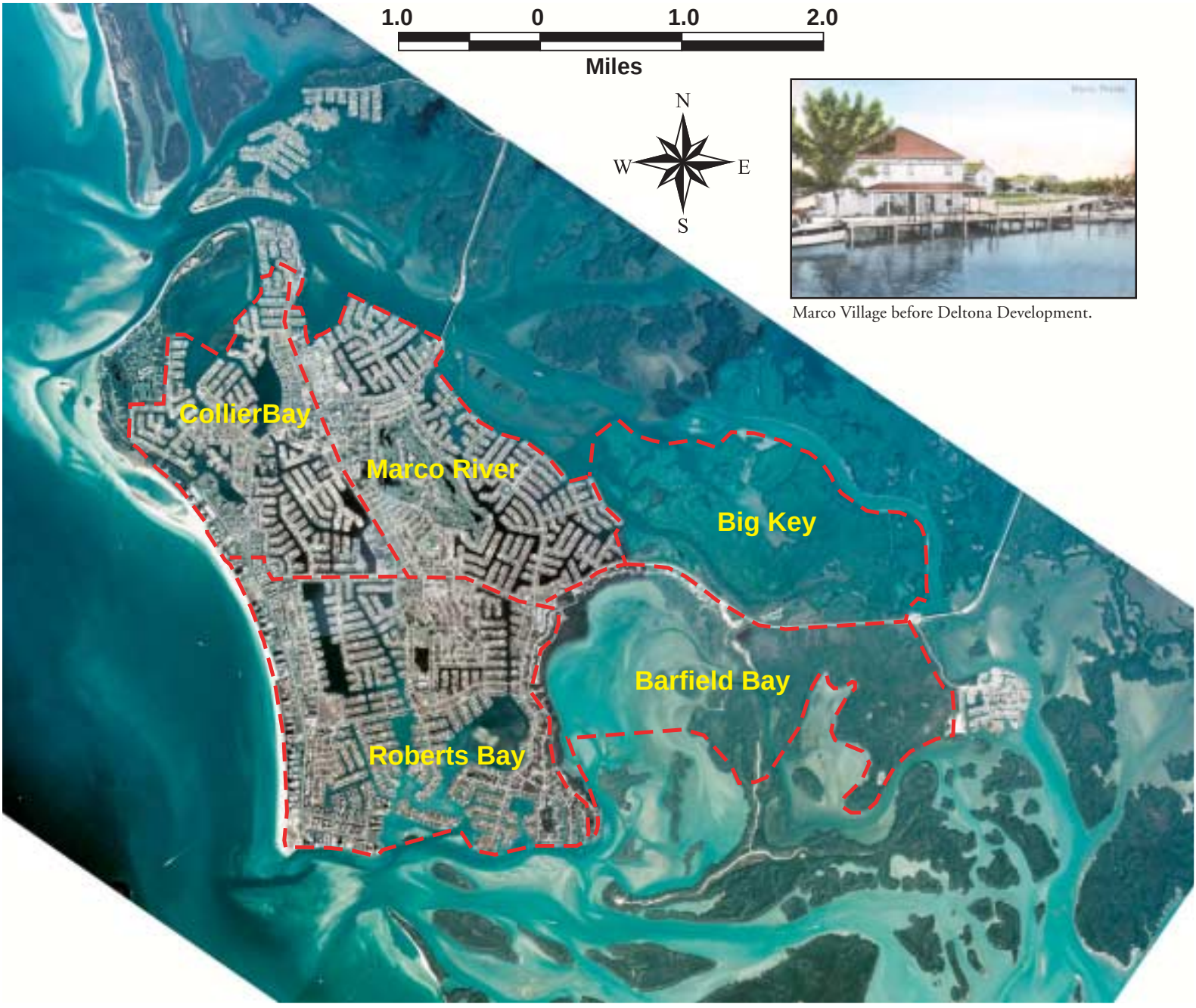
Clamming had been an economic mainstay of the island during the early 1900s, but the two major facilities — Doxsee's on Factory Bay and Burnham's at Caxambas Pass — closed when the clam beds were depleted.

The railroad, built in 1927, had been abandoned in the mid-1940s. A swing bridge over the Marco River connected Goodland with the mainland.

Villagers at Caxambas had been moved to Goodland in 1949 preceding the Colliers' attempt to develop the island. Nothing materialized from this Collier development plan. The U.S. Air Force had established a missile tracking station in the late 1950s on the southwest tip of Marco Island adjacent to Caxambas Pass.

The Mackles wanted to build a resort community from scratch and Marco Island, in 1962, presented them with such opportunity.

As land would have to be created from wetlands and bay bottom, the Mackles' 15-year development plan hinged on dredge-and-fill, a widely adopted and accepted 1960s land development method. The 6,700-acre site was subdivided into over 10,000 homesites, and other areas were set aside for commercial and public uses. Deltona's 1964 Plan (Map 2) shows the extent of the proposed development, which included 90 miles of canals with 8,000 waterfront parcels.



Marco Village before Deltona Development.

Figure 12. Marco Island permit areas (1992 aerial photograph).

The Army Engineers claimed jurisdiction and required its approval, in addition to county and state 'building' permits, since dredge-and-fill could potentially affect navigation on public waterways. Deltona subdivided the island into five areas, based on completing dredging and filling in each area within the Army Engineer three-year permit period (Figure 12). The company submitted its permit application for the Marco River area first, in 1964, and received Corps approval shortly thereafter. A Corps permit was requested for Roberts Bay in 1967, but the approval process took two years. The Collier Bay subdivision, submitted to the Corps in 1971, was not approved until 1976. The Barfield Bay and Big Key areas, which were scheduled to be developed in the late 1970s, never received Corps approval for dredging. The battle over Deltona's dredge-and-fill permit applications was an indication of a nationwide, emerging, environmental ethic that had prompted passage of landmark legislation to reign in widescale filling of wetlands, both freshwater and marine, and destruction of wildlife habitats.

The denial of permit applications by the Army Engineers made it impossible for Deltona to honor its sales contracts, since it began selling homesites in 1965 in all of the five areas based on the assumption of 'business-as-usual' in obtaining the federal permits to dredge and fill in order to create buildable waterfront properties. Though the company stopped land sales in 1973 within the unpermitted areas, it had already sold 75 percent of the sites in Collier Bay, 90 percent in Barfield Bay, and almost 100 percent in Big Key. Lawsuits and counter-suits, concerning the constitutionality of the Army Engineers decision and regarding just compensation were all decided against the company. In 1982, Deltona turned over almost all its remaining undeveloped holdings on Marco Island to the state for use as a nature preserve.

Figure 12 shows the extent of Marco's developed and undeveloped lands. The dream of an ultimate waterfront residential paradise, thus, came to an abrupt end, and under current federal, state, regional and local laws, finger-canal developments will never again be allowed in Southwest Florida.

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Map 2.
Marco Island development plan.