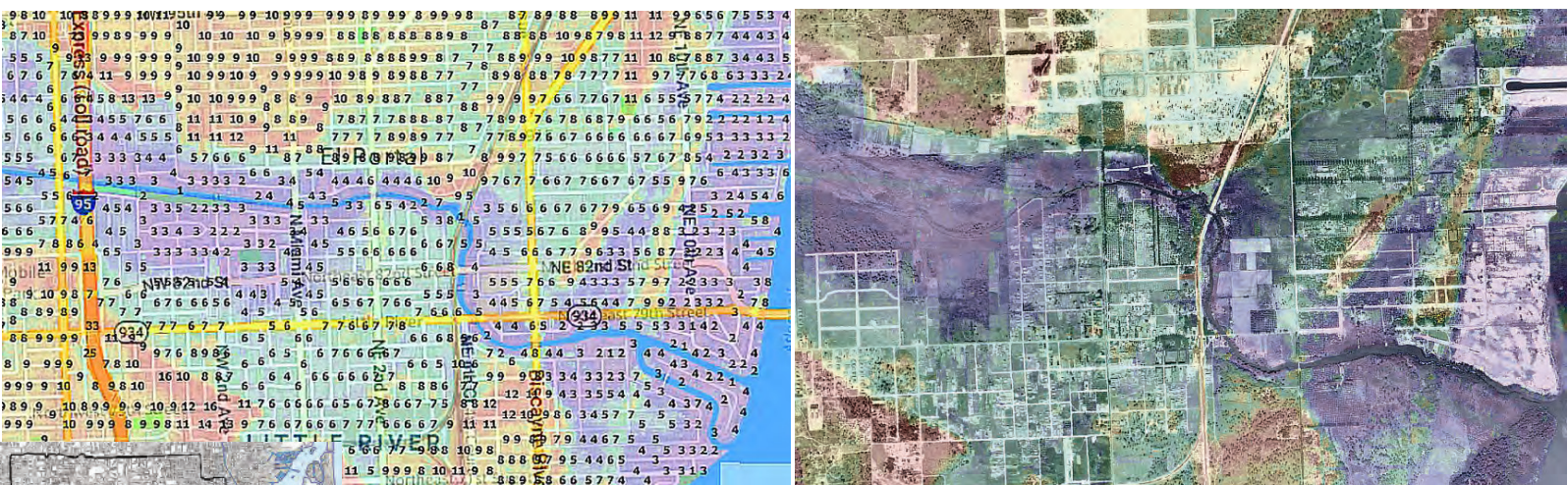


What does this history tell us about what we can do now here on the Little River?

Our account got us to the 1924 air photo looking at the place where we are standing now. Here are two views, now and 1924.



The current map shows elevation with feet numbers and colors. In the west end of El Portal and across the river in Larchmont you can see the low elevation area where we have a major flooding problem. And since much of rainwater runoff in northern Miami-Dade flows out here from the C-7 canal basin, the problem gets worse as sea-level rise reduces the gravity drop which is now less than five feet.

... as 100 years later

we are faced with learning to live with water levels up to what they were then, but with a South Florida population 25 times larger. Reading naturalist Charles Torrey Peterson's *In Lower Florida Wilds* about his observations (often with his friend John Soar who lived nearby and being remembered by young Thelma Peters growing up nearby too) we see people understanding nature in this place and working with it to live there. We can't go back to what they had, but we also, I think, have to realize the speculative economy that with its crash that ended so much for them is still with us. At some point soon, I think, we have to develop a leaner and more resilient economy that supports those who work here more than those who make money off of South Florida and then move on.

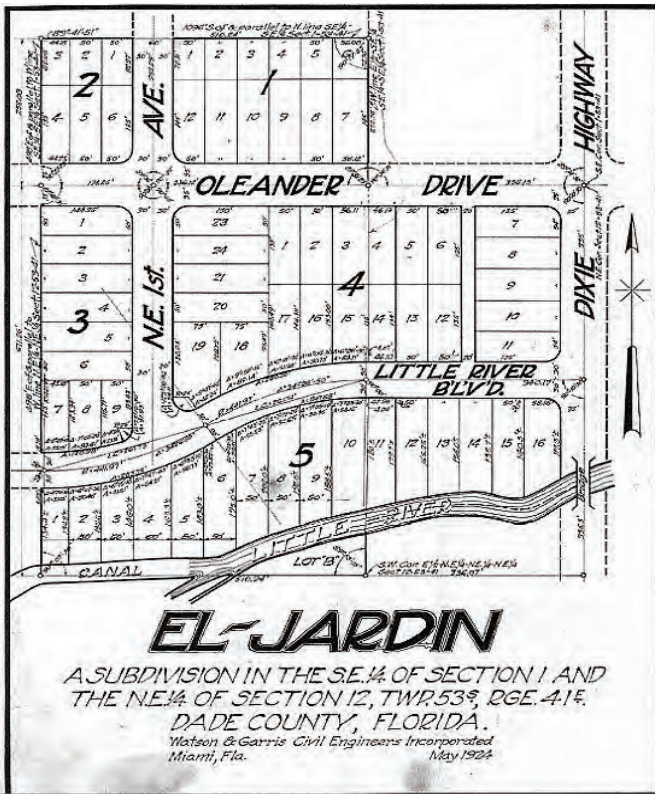
Of course it was a huge hurricane that also finished off the boom then. Weather is a threat even greater for us now not due to wind and storm surge (which we have learned to deal with) but due to inland conditions of inability to drain torrential rain flooding and pollution that threatens our water supply and the Bay and ocean environment that is the strength of our future



economy.
<-- this is a simulation of a 7-ft storm surge in Biscayne Bay. As storm surge it did not happen in 1926, and is extremely unlikely from a hurricane now. But this water level inland is likely to happen from an extreme rainfall event

The 1924 photo covers approximately the same area and has the same current elevation colors. However the indicated elevation would be incorrect in 1924 for the low-lying purple area on the left (west) side since many feet of peat soil were soon lost. In 1924 new roads and real estate action went with the speculative land boom with results we see in this El Portal plat below still used today. Though much ended with the 1926 hurricane, we can learn from the history of this

place then . . .



New bridge over the Little River on West Dixie, ca. 1922. McVeigh's Hammock was about 100 yards east of bridge. (El Portal Indian Mound)



2021 Little River Cleanup and Celebration

see maps and images full size at: c7rioichico.net/2021maps

Hugh Gladwin's thoughts on the Little River, past, present and future

Over the past 20 years of this Little River Cleanup event I have always had something to say about the history and current circumstances of the river and our neighborhoods around it. Usually I have a handout with maps and last year I took to writing what I had to say on it rather than taking up everyone's time in the hot sun. This time I'm going to do the same but go a bit more into the old professor mode since so much science and history is affecting what we have to learn to do now in this place.

In my decades of studying and teaching my areas of science and history I have learned (as a good scientist has to) not to blindly trust my own opinions and always seek further evidence and contrary arguments. But at the same time I have to give what are my best opinions about the importance of what we do now in this Little River place in terms of the science and history we have at the moment--even if there is still much left to learn.

So Prof Hugh asks you first to consider what we have accomplished in the over 20 years of these Little River cleanup events--some of you have been at almost all of them.

Second he asks you to think about the very long-term natural and human history of the Earth and then zoom to the here and now of this place in South Florida--to think about what this spot right here uniquely tells us about choices this long-term history has put on us.

Third, how are we going about learning what to do to make the best choices--starting right here and now?

Over 20 years of the Little River cleanup and Celebration

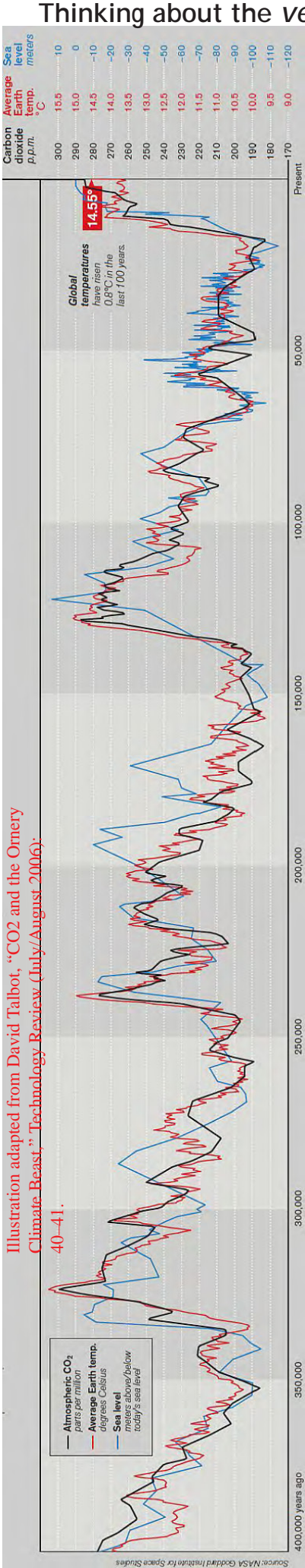
For the first 10 years the impetus for the Cleanup event came mainly from the Oakland Grove neighborhood.

The Sierra Club Inner Cities Outings youth program in Oakland Grove organized the first Cleanup events. A major but short-lived achievement was working with the City of Miami to win funding in 2000 from Florida Communities Trust for a Little River Preserve Park on the site where the Pelican Harbor Seabird Station will now be located.

From 2002 to 2010 the Cleanup continued with other groups spiritual, artistic, and environmental joining the effort. In 2011 in El Portal the Architecture, Landscape, and Environment Committee included the Cleanup in a major artistic and community event.



In recent years the Cleanup and Celebration planning has been led by the Little River Conservancy with many groups and local governments participating and supporting. As attention has turned to the critical role of the Little River/C7 canal for dealing with potential hurricane rainfall flooding of much of northern Miami-Dade County, the Cleanup event has given officials and residents a chance to meet and talk about the planning that has been taking place to meet this challenge. For me all the years of working with people who care about the river and our neighborhoods around it have also been the years after Hurricane Andrew when my work has focused more and more on the connection of maintaining resilience in the face of threats that can only be done when humans work with nature starting from the ground (and water) up. On the next page starts a very long view of this.



Thinking about the very long-term natural and human history of the Earth and then zooming to the here and now of this place in South Florida

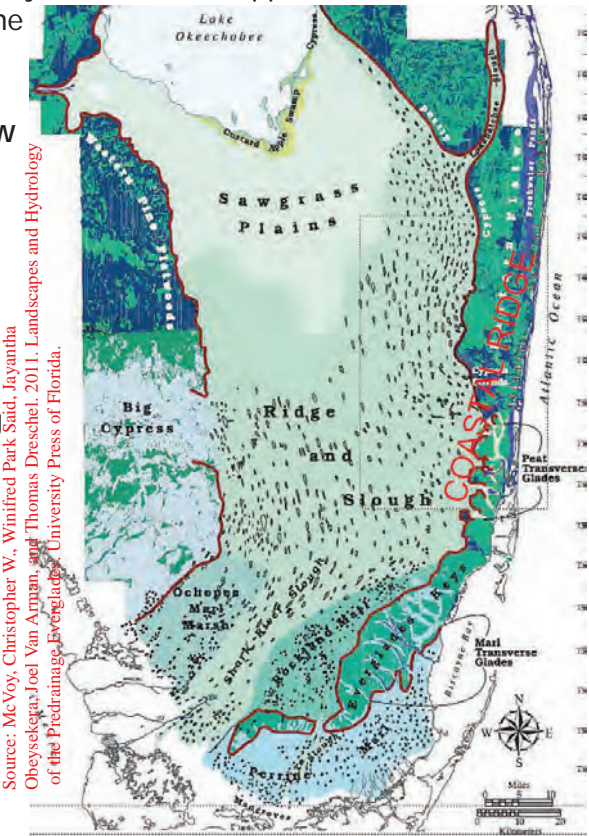
Whatever one thinks about climate change, it is not new. As the chart on the side of this page shows, over the last 400,000 years, the earth's changing tilt relative to the sun warming it has produced average Earth temperature changes (red line) of more than 5° C. This seeming small amount when it warms expands ocean waters and melts glaciers thus raising the sea level (blue line). Warmer ocean water releases dissolved CO² so that in the atmosphere goes up also (black line).^{*} Humans have been around for about 300,000 of these years but changing amounts of sea level and glaciers kept them on the move. They hunted and gathered what nature could provide but no more than other creatures could. ^{*} [unfortunately this process can happen in reverse as is happening now]

Then around 20,000 years ago this climate process enabled big changes for humans. 50,000 years of ice and low sea levels which had enabled humans to come to the New World were ending. They made a brief appearance in South Florida at a time when the sea level was about 300 feet lower than it is now. ^{**}

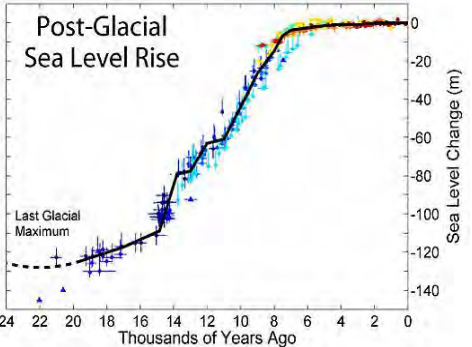
This chart is a closer look at the last 20,000 years. The colored marks are observations made underwater as sea level rising paused and left now submerged beaches and reefs. What then happened had a huge effect on human history: sea level rise slowed and then almost stopped in the last 6,000 years. Permanent coastal populations and river and sea trade became possible. Human labor augmented by wind, water, and animal power struggled to produce enough food and other products needed. For many areas coerced labor (slavery in one form or other) was the answer.

Another consequence of sea level rise stopping was that places were stuck with whatever configuration of elevation and geology they had when it stopped. In South Florida this was a very flat surface of porous limestone that collected fresh water in and over it.

One major consequence of this configuration is that South Florida then and now is based on a unique low-nutrient water environment. Compared to other tropical lands choked with vegetation, the Everglades appeared to be a vast mostly open grassland with abundant fresh water overlaying peat above the limestone bedrock. Abundant sea grass and mangroves in coastal waters supported rich marine life. It took a very long time for covetous humans to realize what an extremely unique and vulnerable ecosystem was present to maintain this seeming paradise. A barrier of coastal ridge slightly higher ground kept fresh water inland over and permeating the flat porous limestone. Fresh water pressure in this limestone aquifer resisted ocean salt water intrusion. What Europeans did not realize was that this situation could not have lasted any length of time anywhere else. With tropical sun and abundant fresh water, vegetation would have grown explosively choking the Everglades area and consuming most of the fresh water. However that would have required some amount of nutrients in the water, nitrogen and phosphorous, of which in the unique Everglades ecosystem there were almost none. This situation of low-nutrient abundant surface water persisted until after 1910 when humans began draining the Everglades and introducing nutrients, particularly phosphorous.



Source: McVoy, Christopher W., Winifred Park Said, Jayantha Obeyesekere, Joel Van Arman, and Thomas Dreschel. 2011. Landscapes and Hydrology of the Predrainage Everglades. University Press of Florida.

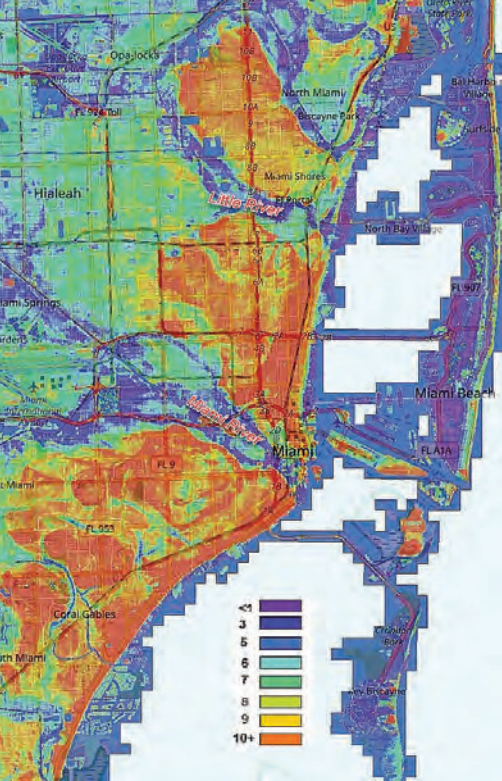


South Florida had 300 years of very slow population growth and it became an urban area only in the last 100 years.

Populated by relatively few Tequesta and Calusa who were gone by 1750, South Florida was a prime target for expanding the profitable sugar economies European nations had in their Caribbean colonies. There slavery provided the massive amount of labor power needed to make sugar cane growing and harvesting possible in the tropics. Florida still belonged to Spain, but Spain was too overextended to do much with it and France was probably ready to step in moving from its colony in Haiti. The Haitian revolution and Napoleon's defeat in trying to to reverse it ended that possibility. Under Spain, Florida continued as a sparsely populated area to which Indians and slaves fled the United States. Escaped slaves formed new communities in central Florida and Indians in Florida became known as the Semi-noles. Florida was acquired from Spain and became a US territory in 1822.

Then began three wars to expel the Seminoles lasting until 1858. Most of the fighting was north of the Everglades as is documented in this U.S Army map of military operations in Florida at right. After the wars south Florida remained with a relatively small population until just before 1900. As the map shows, the Everglades were close behind the dotted coastal ridge. It shows the Little River extending a way into the Everglades but it actually only went a short way climbing about 6 feet to peat transverse glade extension of the Everglades (see map on p. 2).

Around 1990 people started coming from the north to the coastal high ground of southeast Florida. As they started what was to become the urban area they were joined by an African-American workforce initially many from the Bahamas. Where people lived was dictated by elevation—the need to avoid Everglade swamps and coastal flooding—and the rigid residential segregation of the south. The coastal high ground was not really a “ridge” but rather “islands” of high ground separated by lower wet transverse glades. The current elevation map below shows these “islands” in orange. Travel between these high ground area was difficult even after the FEC railroad was extended to Miami in 1896 and the local history of them differered as a result. Historian Thelma Peters grew up then in what is now Miami Shores and in three books has chronicled life and events that took place up to 1926 showing the differences. With the railroad came a market for agriculture and people wanting to buy land to live or invest in sunny Florida. The high ground north and south of the Miami River followed Miami's urban path but further north agriculture dominated until the 1920's when a speculative land boom pushed dredging the transverse glades and launching planned residential developments in high ground places like Coral Gables.



El Portal, Sherwood Forest, and Miami Shores were planned, cleared, and streets laid out though they had been annexed by the City of Miami in 1925. This rush of events collapsed with the 1926 Great Miami Hurricane. Coral Gables survived as eventually did Miami Shores but El Portal and Sherwood Forest stayed bankrupt with only a few houses built.

The drainage of the Everglades had done its work to open future suburbs and with the building up of barrier islands allowed South Florida's population to spread and then grow rapidly after World War II. We will take a closer look at this 1924 aerial photo on the next page, but here on it the location of work on these real estate developments is outlined. The transverse glade to be drained by the C-7 canal in a year is on the left where it goes into the beginning of the Little River.

