A person with long hair, seen from behind, stands on a sandy beach looking out at the ocean. The scene is bathed in the warm, golden light of a sunset. In the distance, a long pier with two pavilion-like structures extends into the water. The text "The Value of Beach Nourishment in Lee County" is overlaid in the center of the image.

The Value of Beach Nourishment in Lee County

Lee County

- Beach Nourishment Performance
- Importance of Tourism
- Value of Beach Nourishment

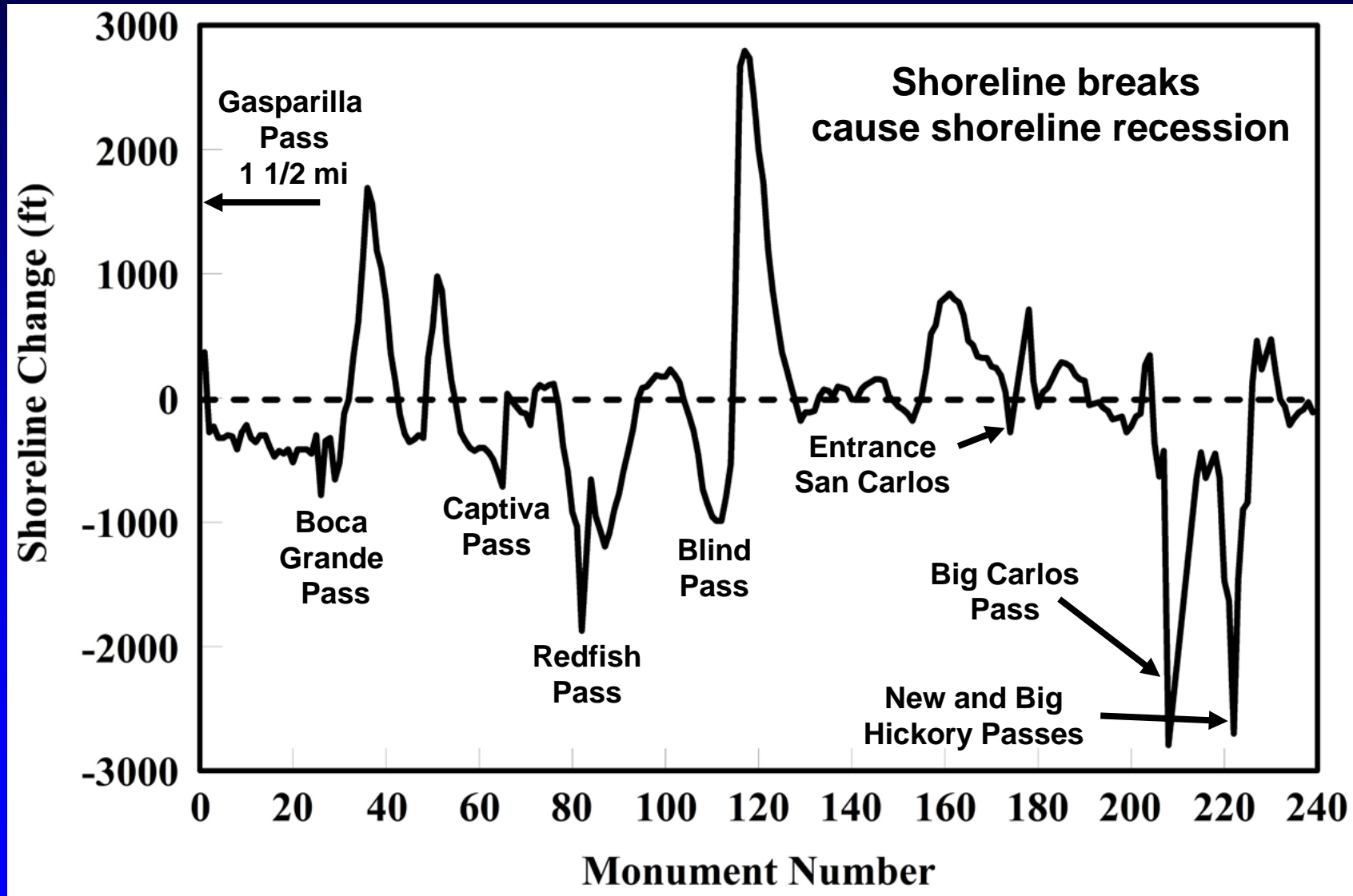


Ft Myers Beach

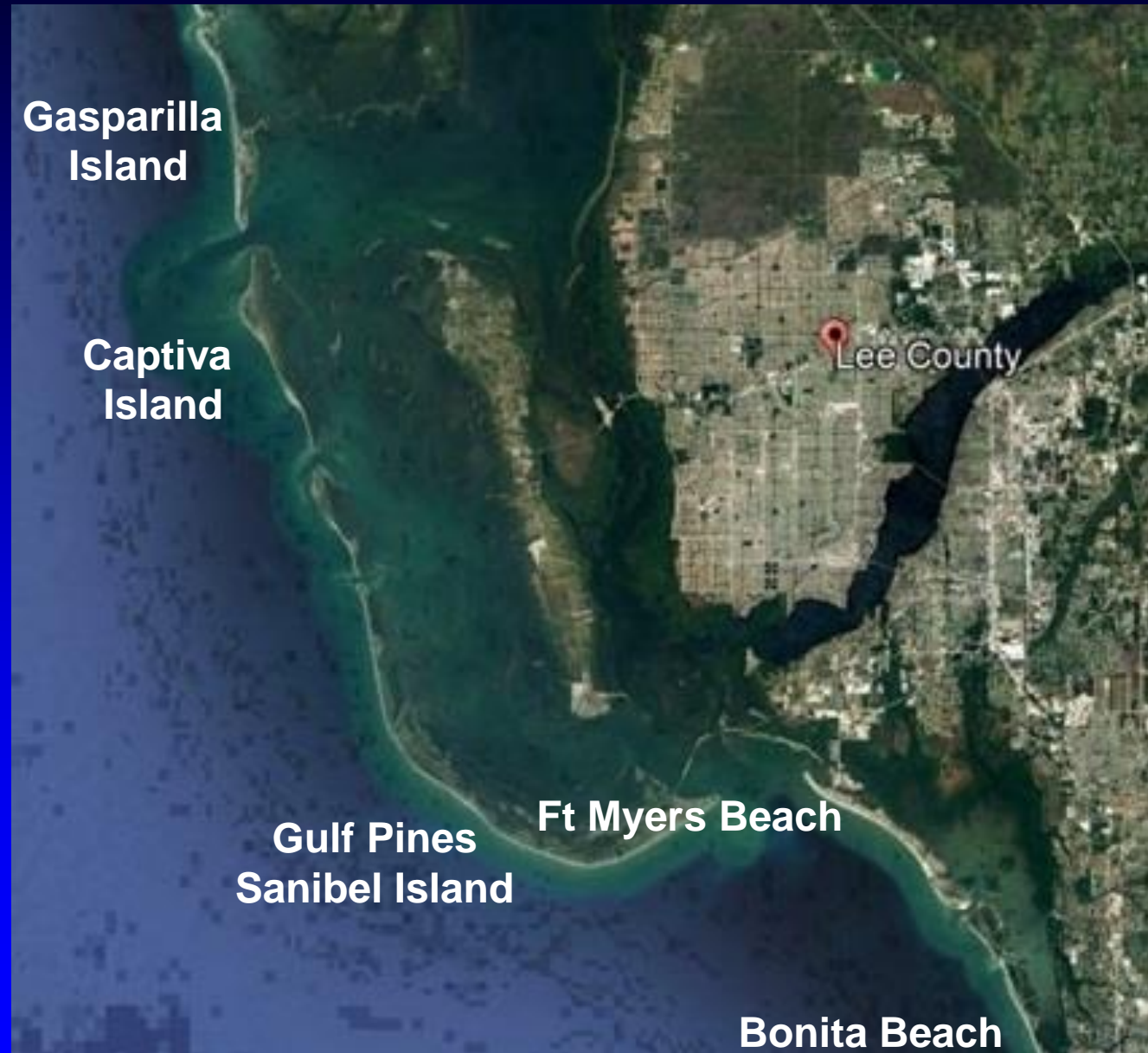
Lee County, Florida



Shoreline Change Before Beach Nourishment 1859 - 1980



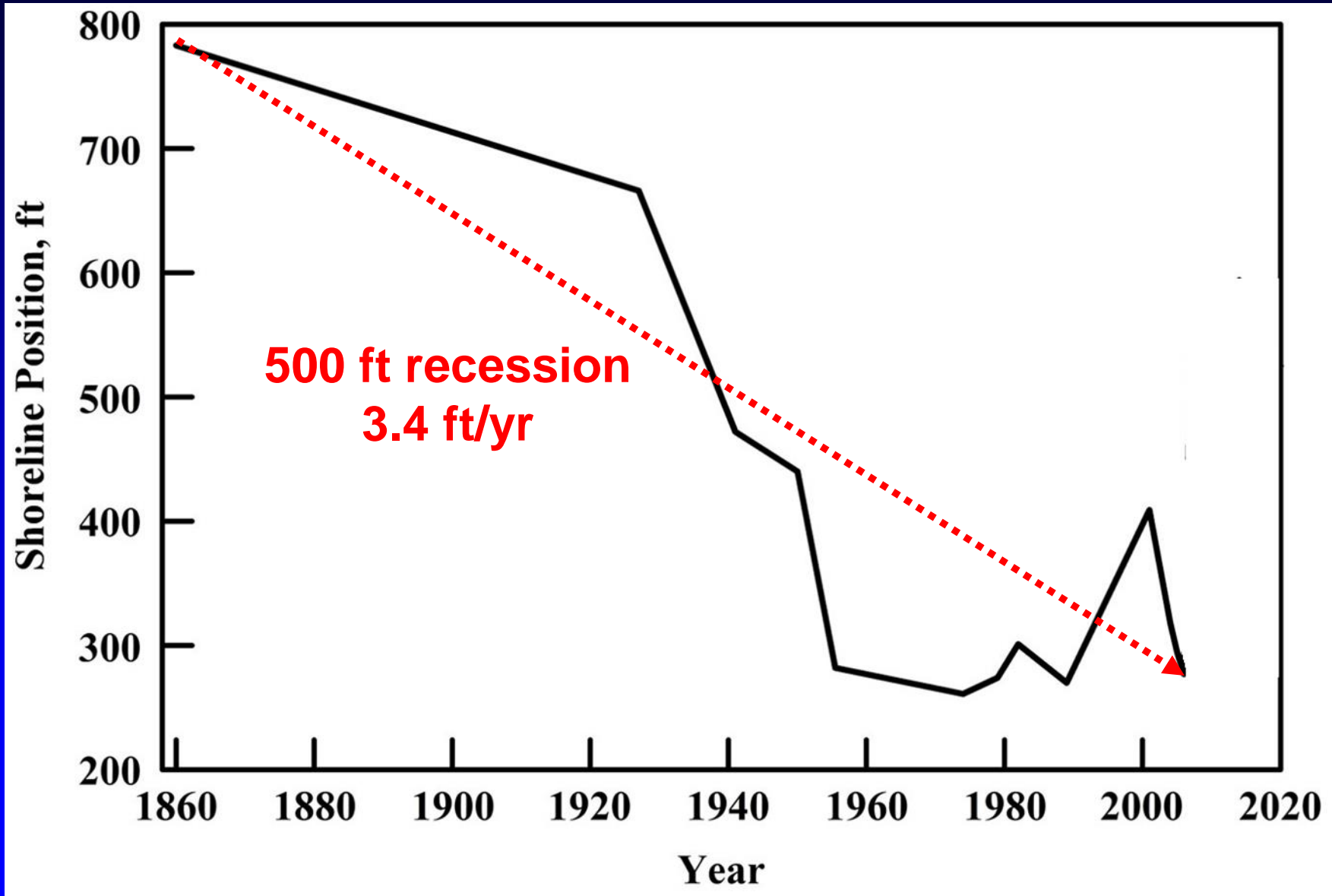
Five Beach Nourishment Projects



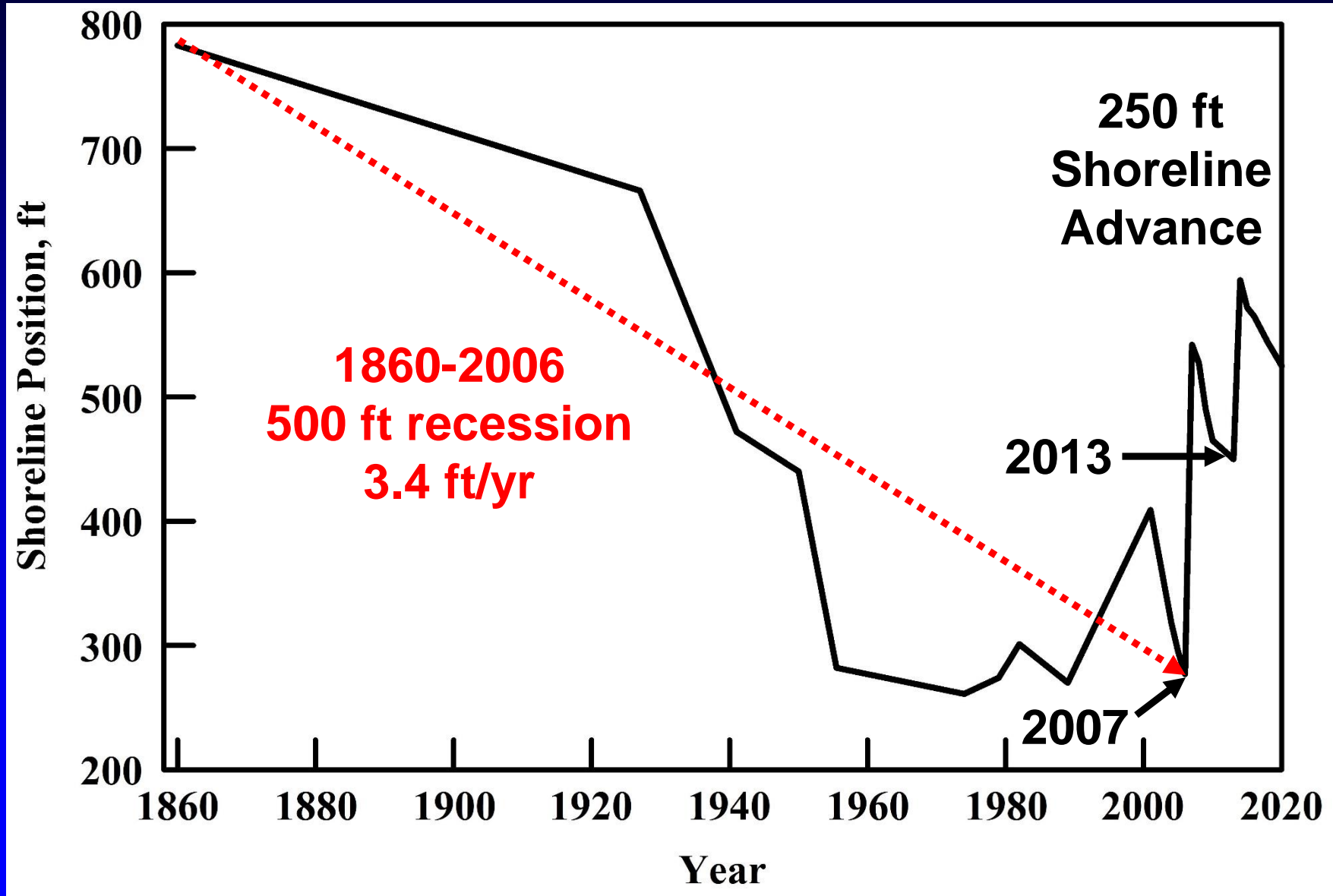
Gasparilla Island, Nourishments 2007, 2013



Before Nourishment, 1860 - 2006

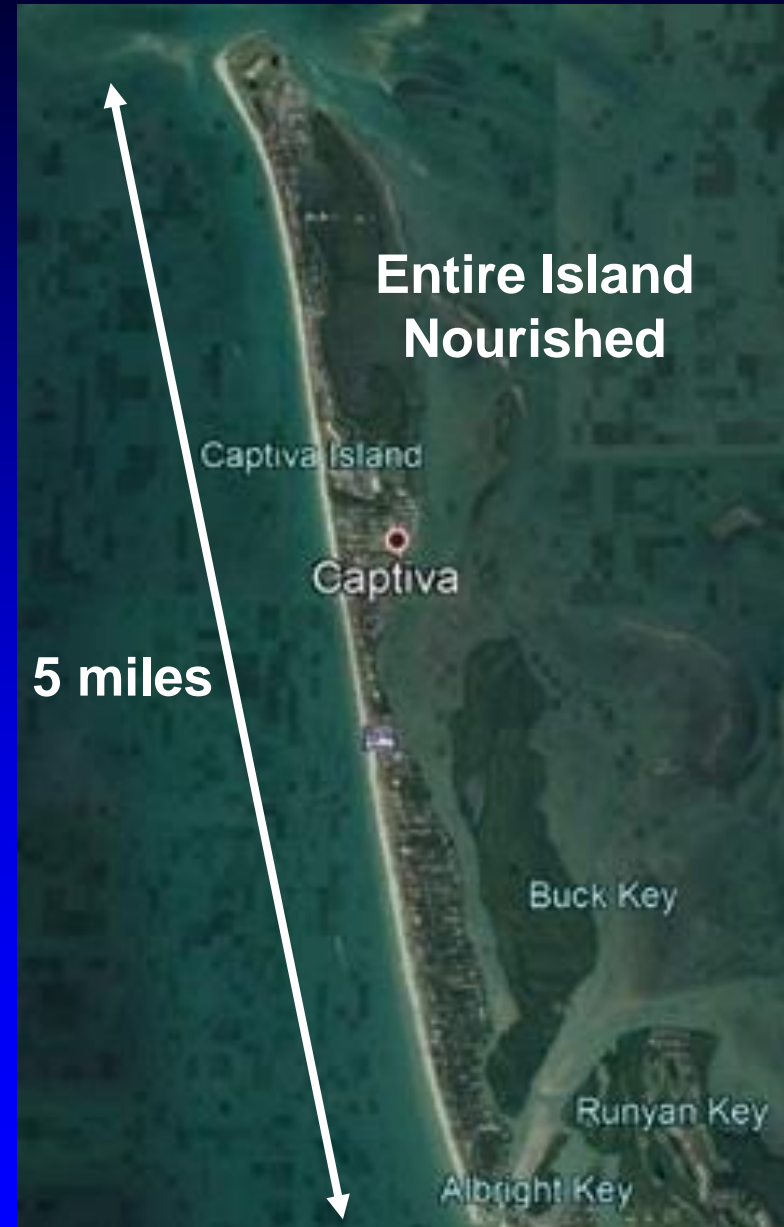


After Nourishment, 2007 - 2020

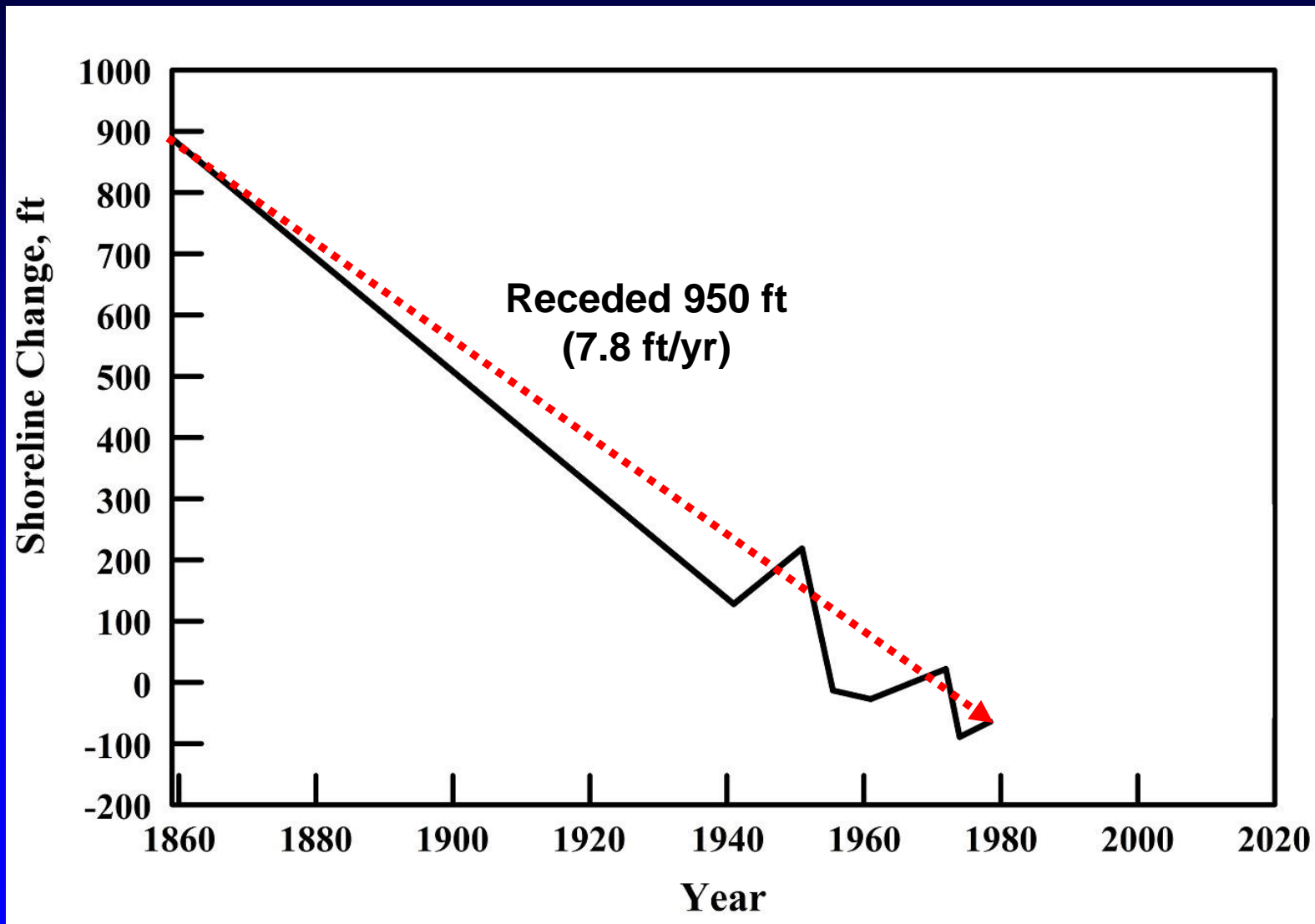


Captiva Island

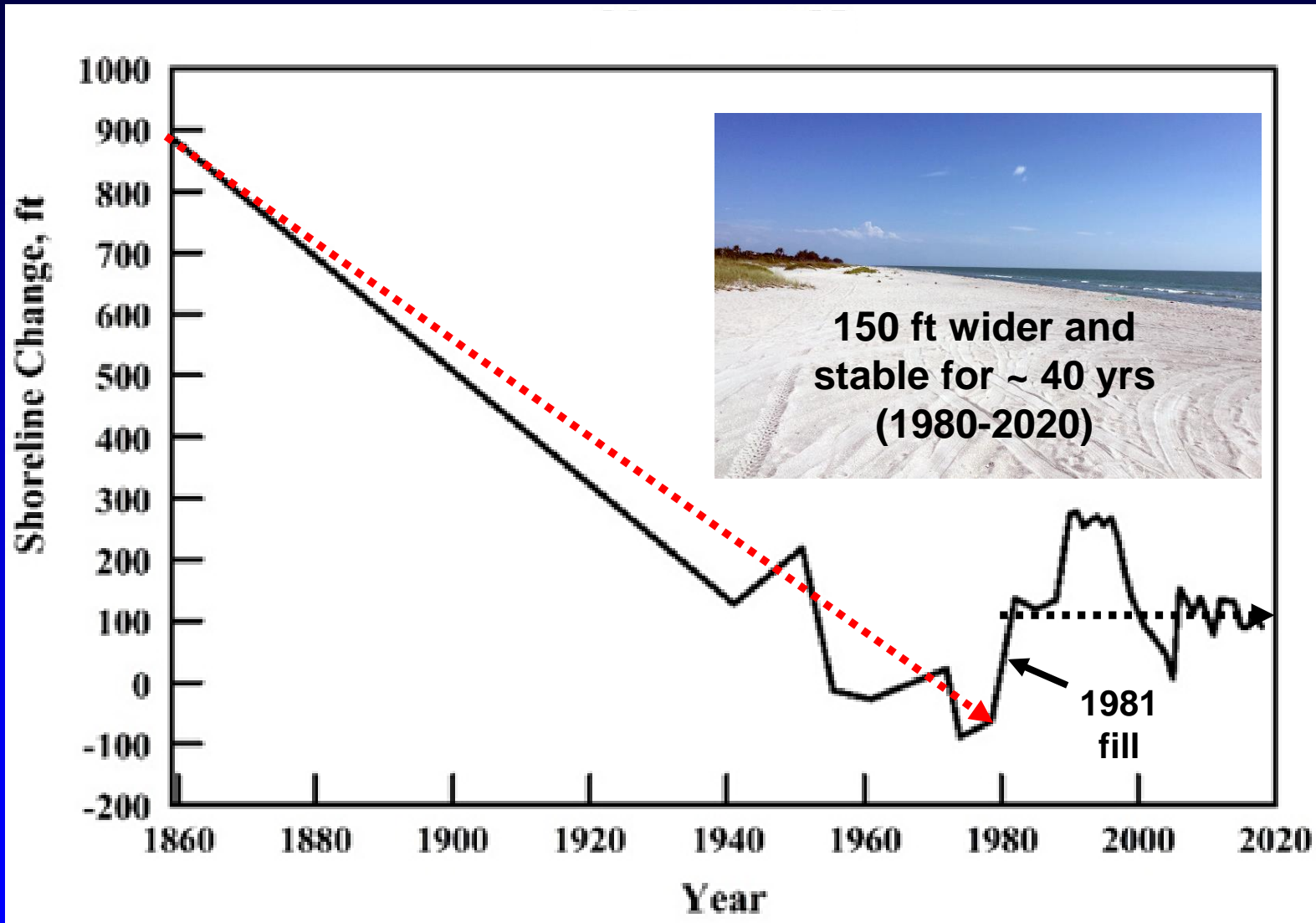
- Five nourishments over a period of 40 years (1981 – 2020)
- 2012 Best Restored Beach Award (American Shore and Beach Preservation Association)



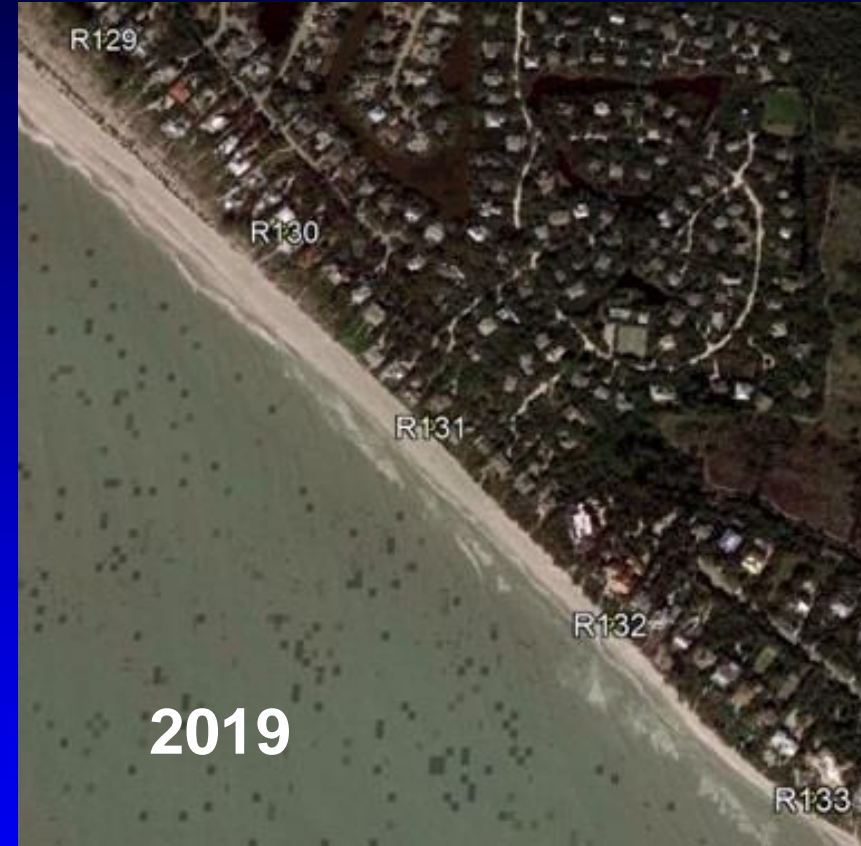
Before Nourishment, 1859 - 1980



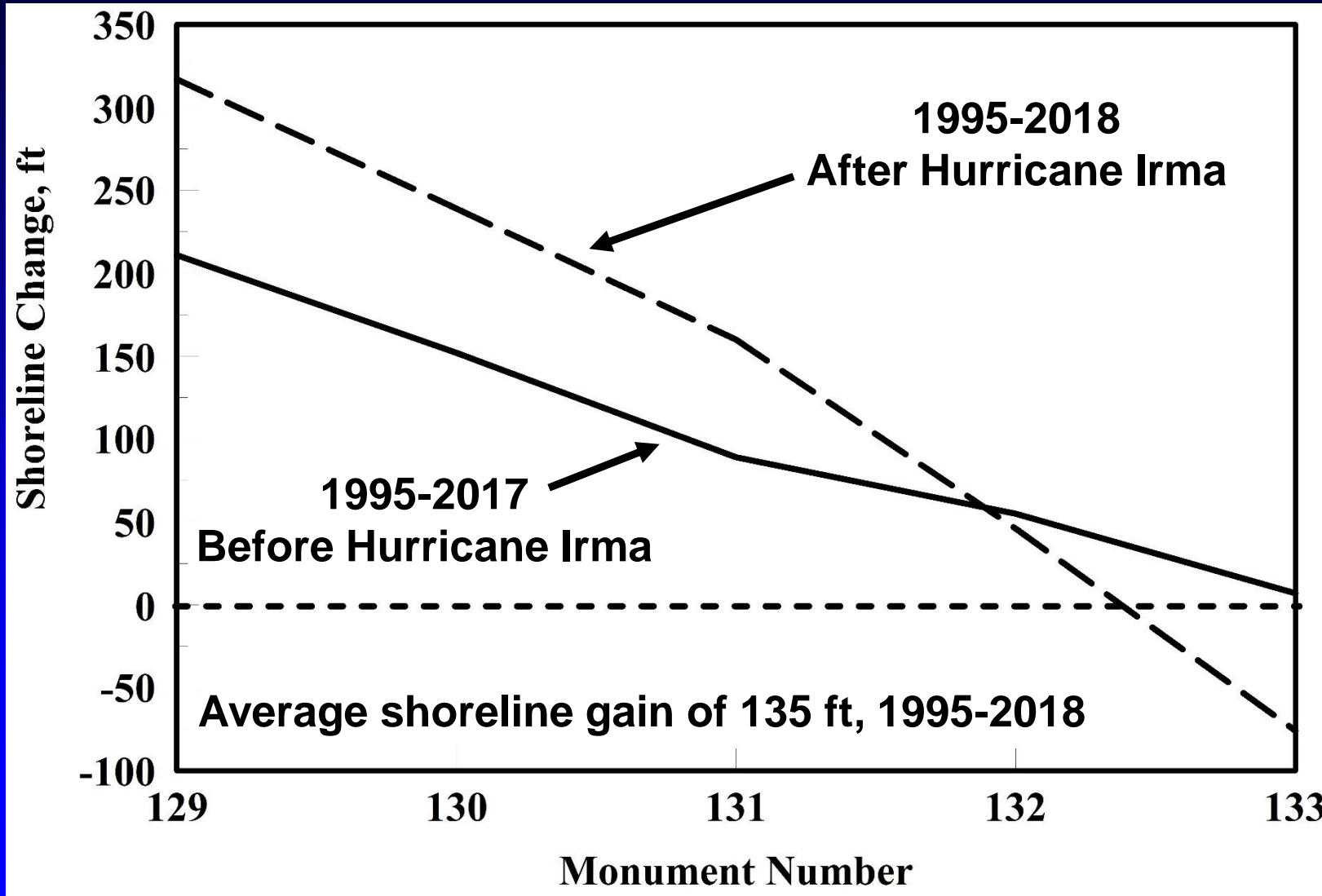
Beach Nourishments Starting in 1981



Gulf Pines, Sanibel Island



Gulf Shores, Sanibel Island

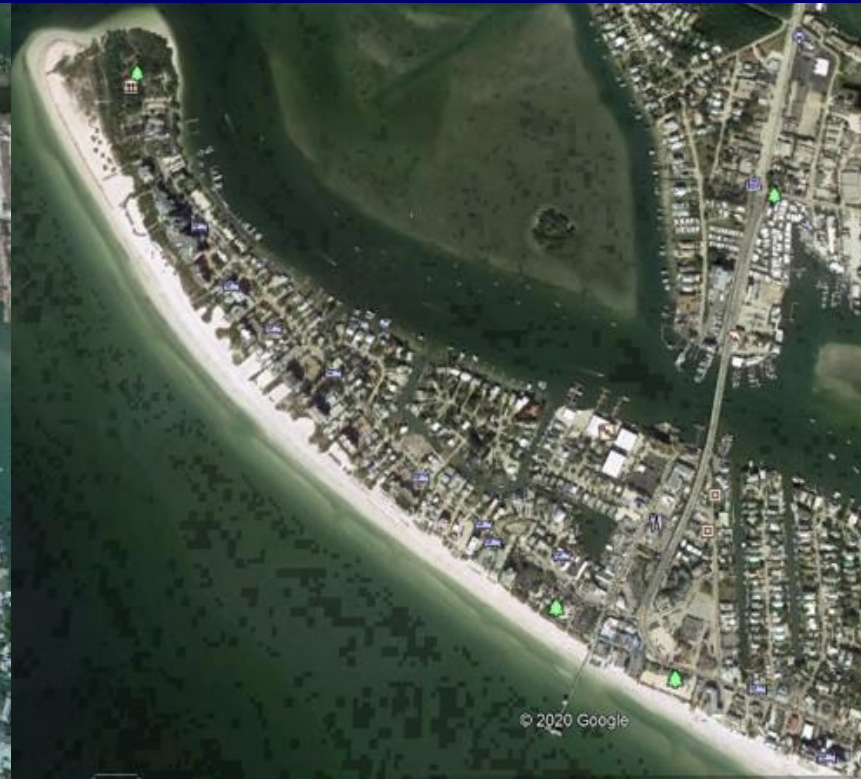


Ft Myers Beach – 2011 Nourishment 403,000 yd³ (1.3 mi)

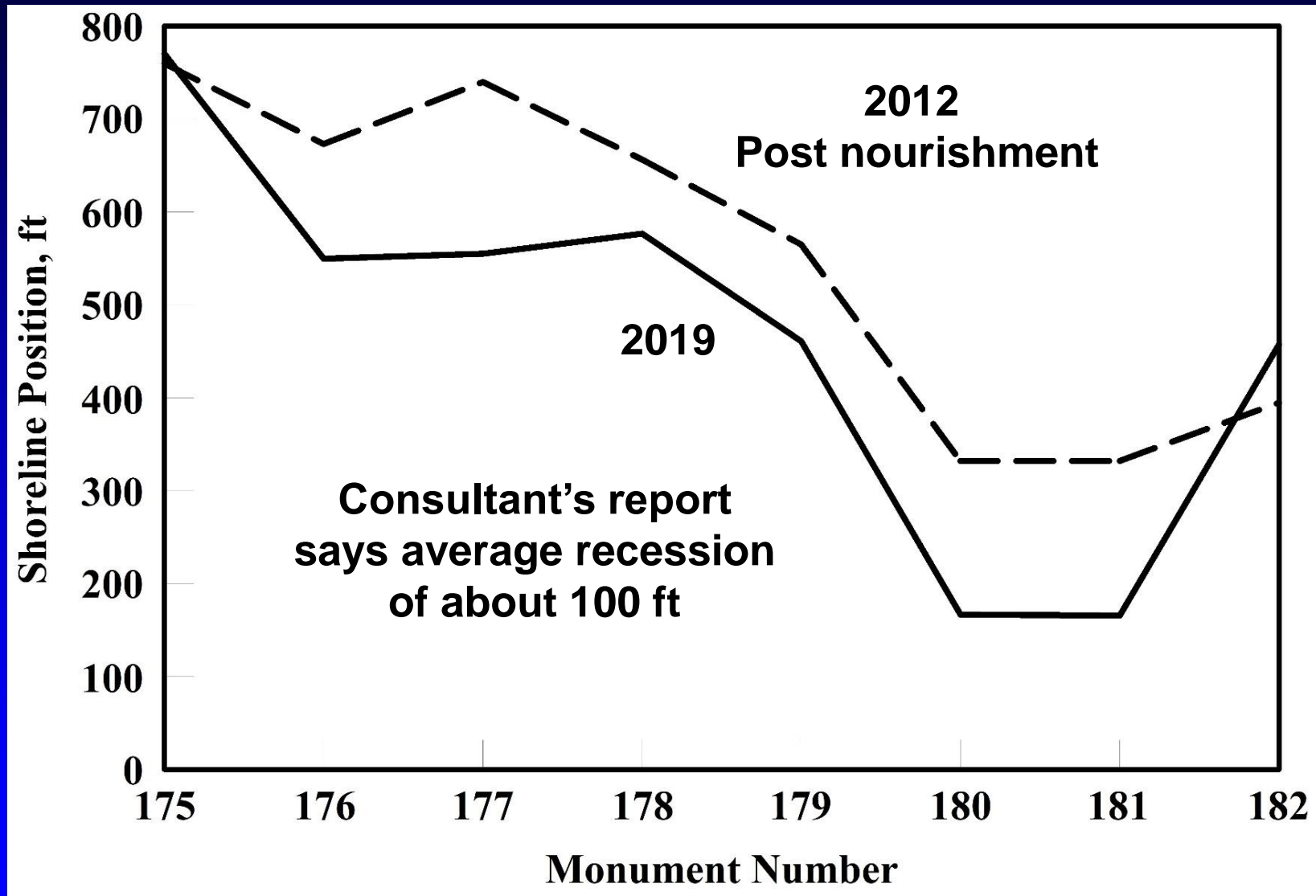
Pre-Nourishment 2011



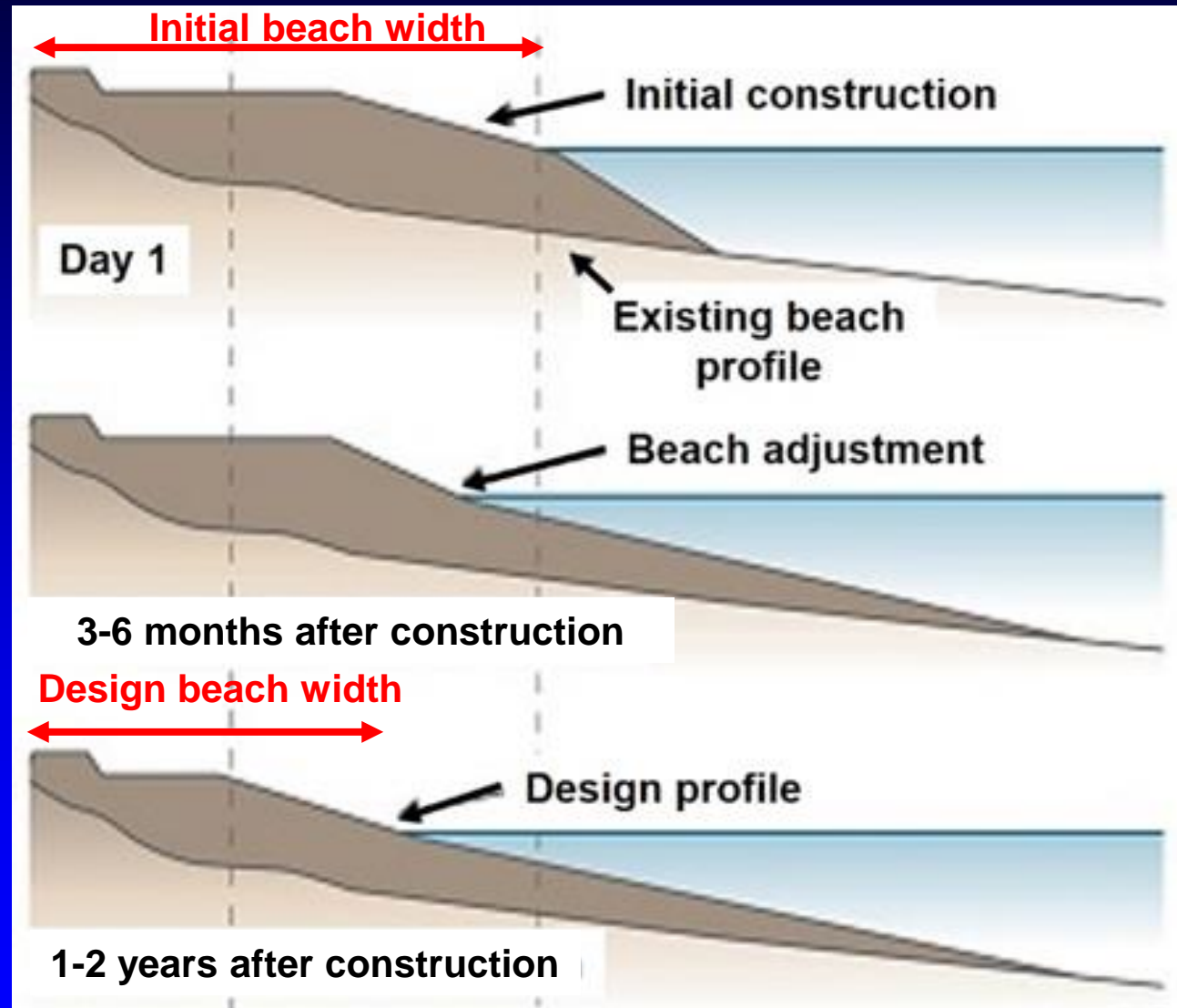
2020



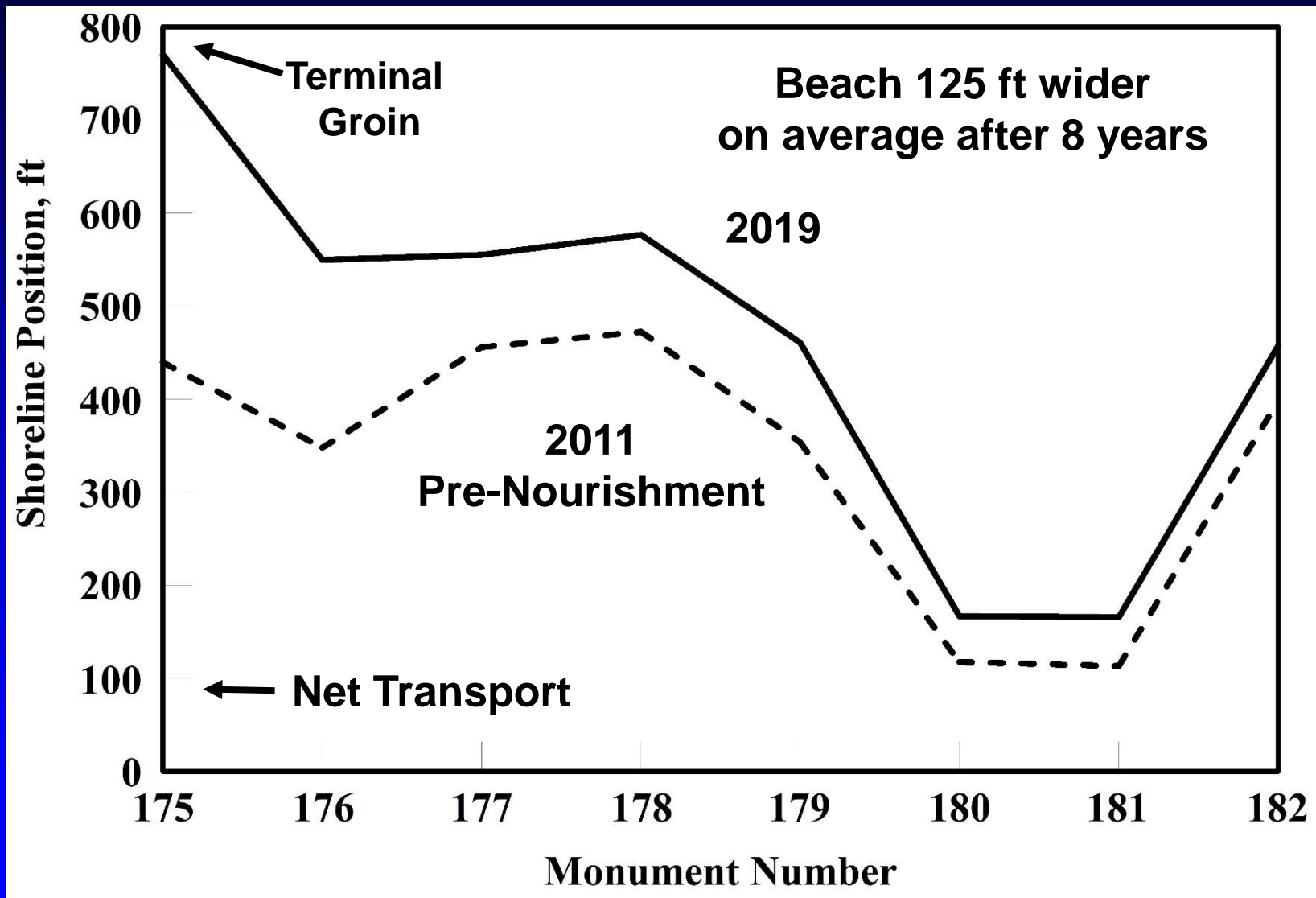
Ft Myers Beach – 2011 Nourishment



Design Beach Width \neq Initial Width



Ft Myers Beach

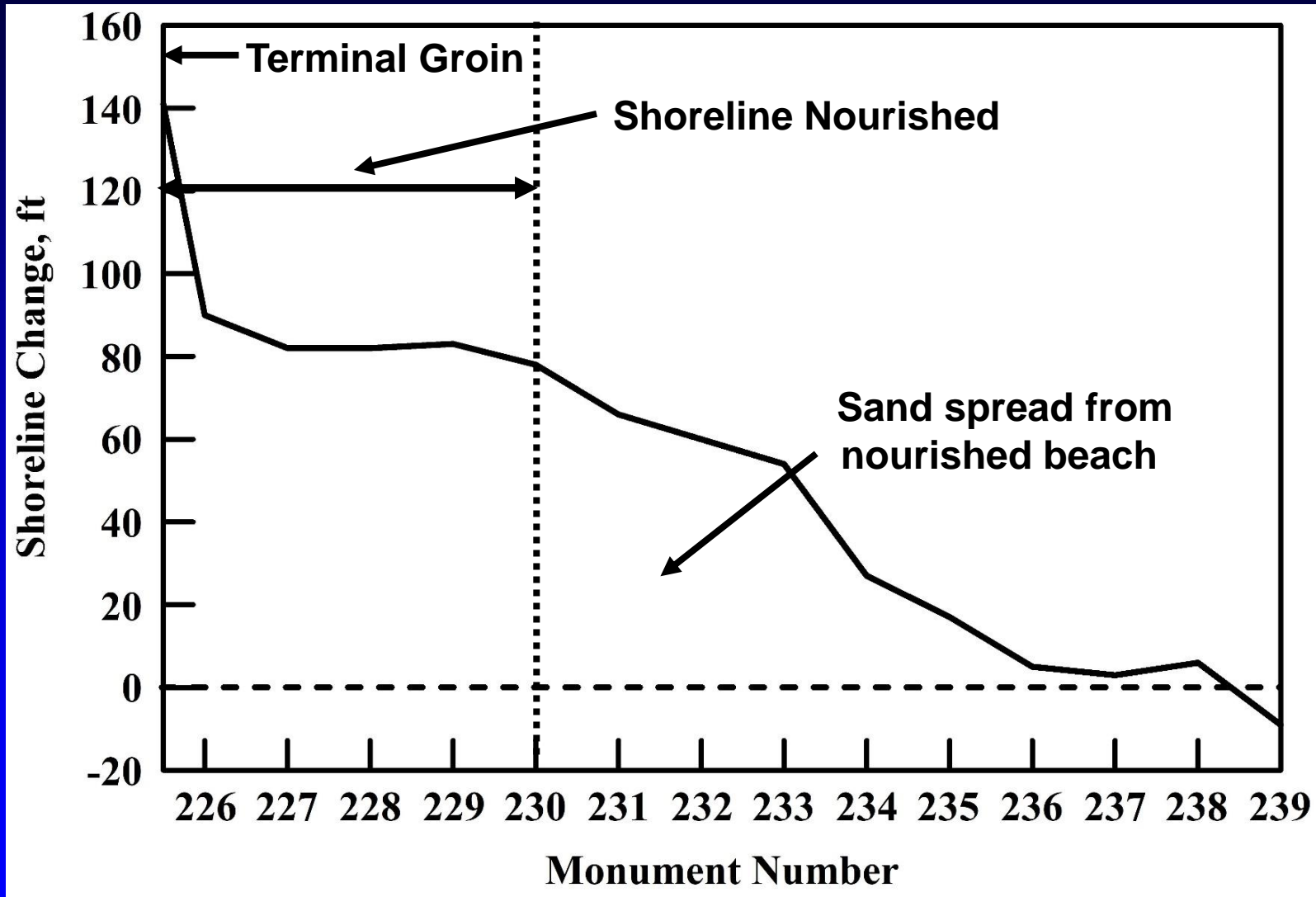


Bonita Beach

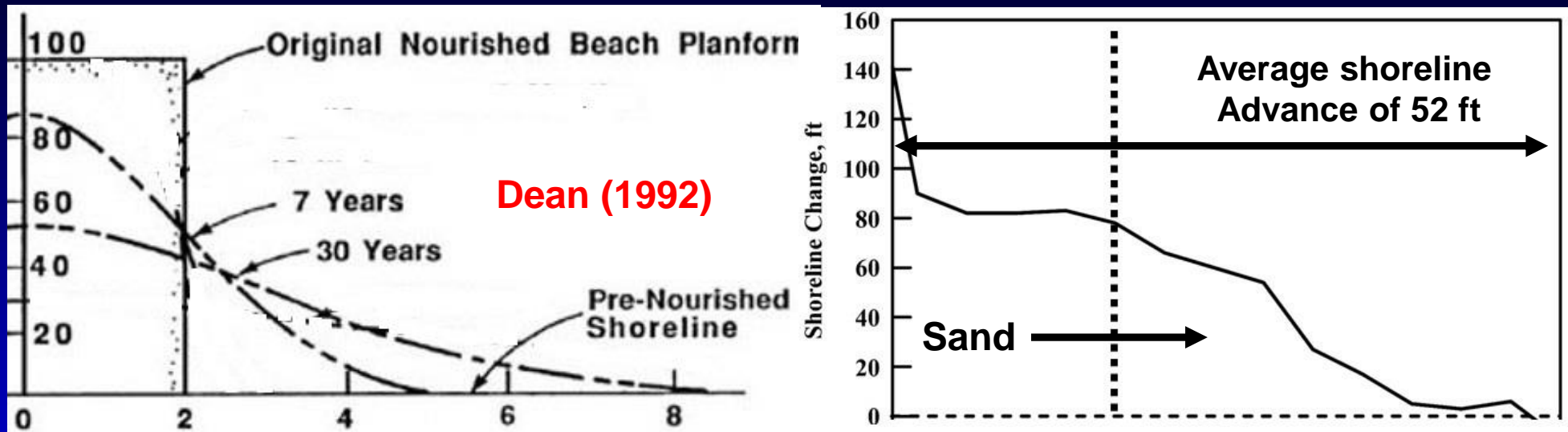
- Beach nourishments 1995, 2004, 2014 (over 25 years)
- Total volume placed 501,000 yd³



Shoreline Change 25 yrs (1995 – 2020)



Sand Movement, 25 yrs



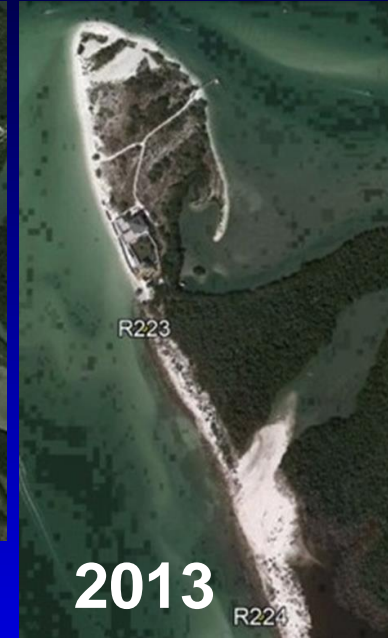
- Sand volume down to closure depth for average shoreline advance of X is $V = X * [(h_* + B) * L]$ (Dean and Charles, 1994)
- $V = 494,000 \text{ yd}^3$
- Beach nourishment placed $501,000 \text{ yd}^3$, 1995 - 2020

Lovers Key and Big Hickory Island



Lovers Key

Nourished 2004, 2014
90 ft wider after 16 years



Big Hickory Island

Nourished 2013
105 ft wider after 6 years

Lee County Beach Nourishment Very Successful

- The 47-mi shoreline receded 45 ft on average, 1859-1980
- It advanced 110 ft on average, 1980-2020
- Therefore, the shoreline has advanced 65 ft on average over the past 160 years despite sea level rise of about 1 ft (Houston, 2015)



The Power of Beach Nourishment

Let's Talk Economics



Lee County has a Goose that Lays Golden Eggs



The Golden Eggs

- **“Tourism is the backbone of our economy”** (Lee County, 2020)
- It has an economic impact in the County of **\$5.3 billion/yr**
- It is the largest employer
- Lee County had the greatest business growth in 2019 of Florida’s 10 counties with the largest GDPs



(Lee County Tourism & Convention Bureau, 2020; SmartAsset, 2020)

Beaches Are Key to County Tourism

- “Lee County's beaches are its No. 1 economic and environmental asset” (Lee County, 2020)
- 90% of Lee County tourists visit its beaches
- 93% give high experience ratings to beaches



How Important Are Beaches to Tourism?



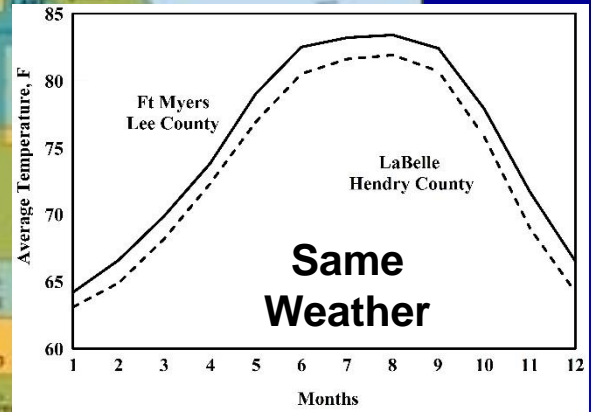
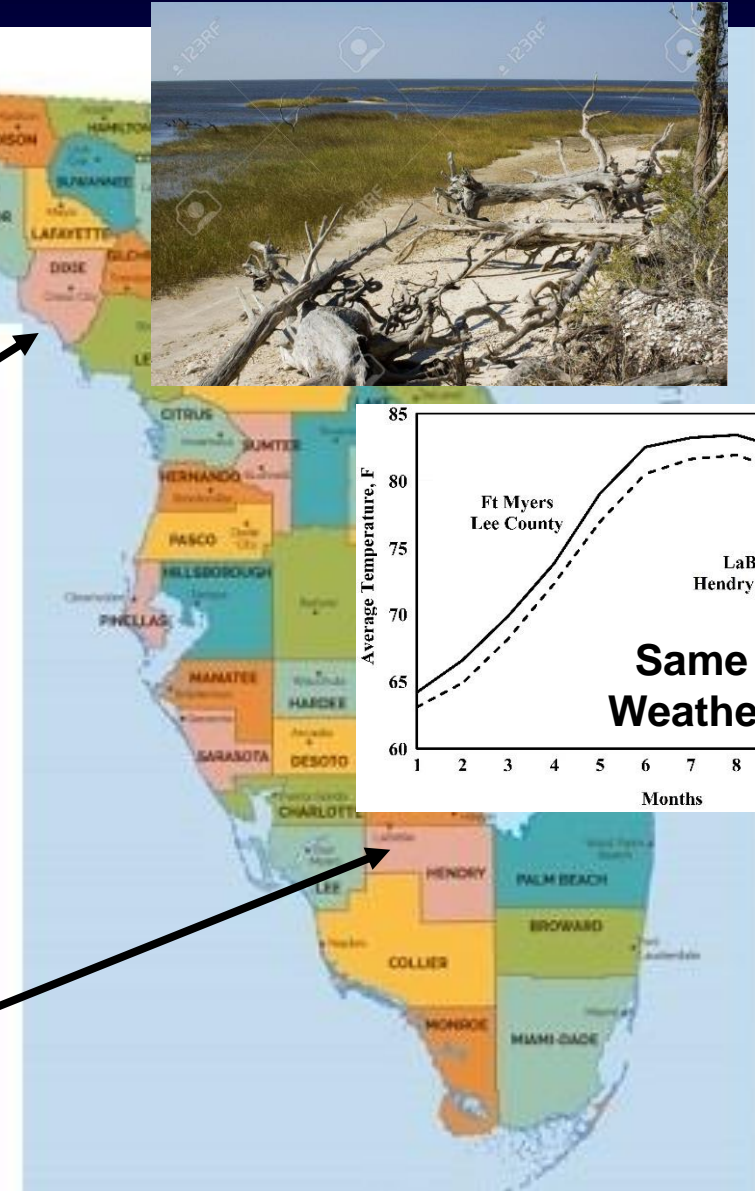
Does being on the ocean
make a difference?

Dixie County, is on the ocean, but
has few beaches
1% of GDP of Lee County

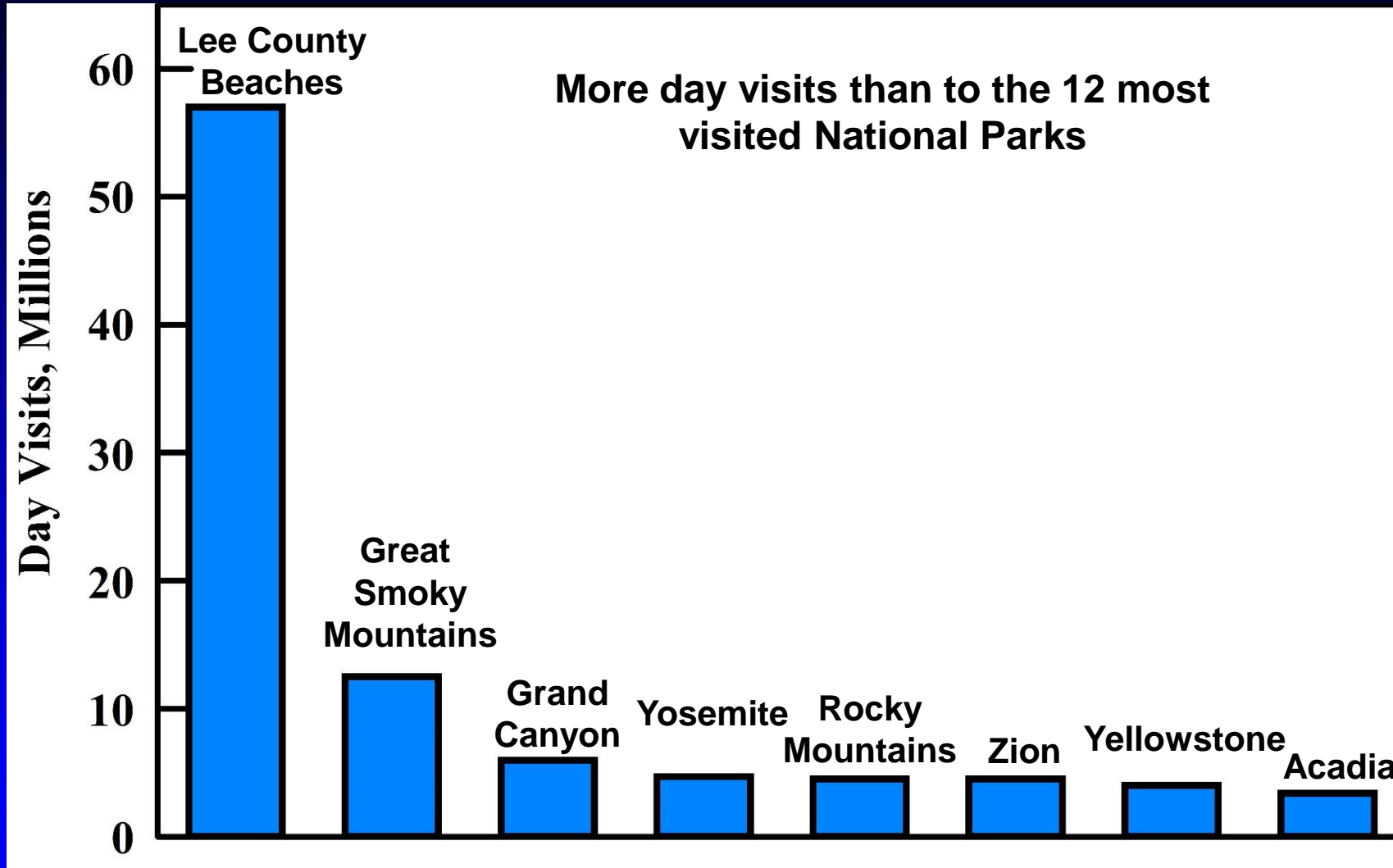
**Beaches make all the
difference in the world**

Does the weather make a
difference?

Hendry County adjacent to Lee,
same weather, no beaches
Highest unemployment
rate of Florida's 67 counties



Tourist Day Visits

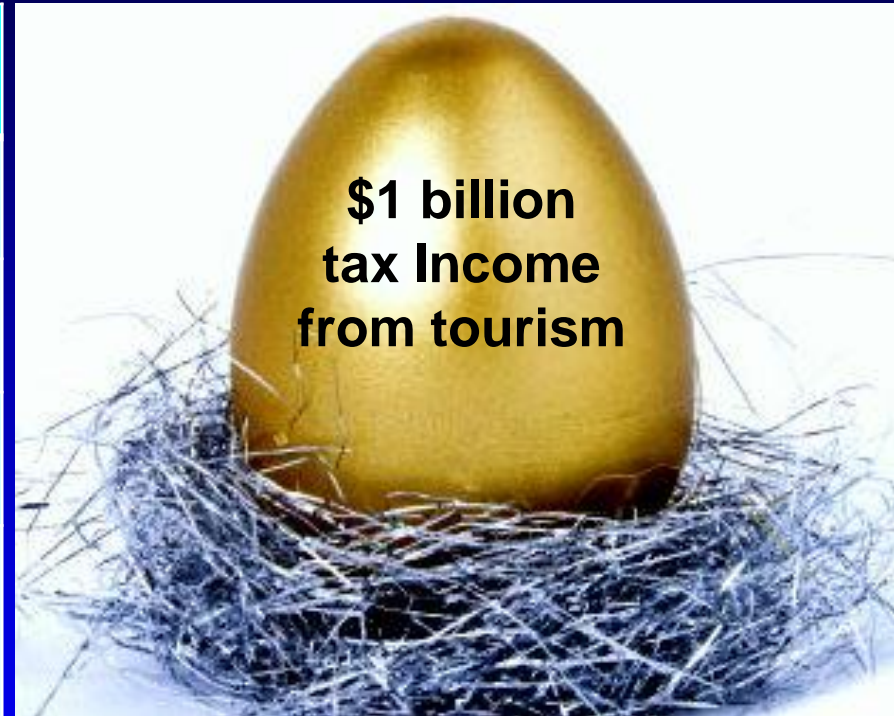


Lee County Visitor & Convention Bureau (2019), National Park Service (2019), Houston (2018)

Annual Tax Income from Lee County Tourism

Government	Taxes
Local	\$184 million
State	\$349 million
Federal	\$495 million
Total	\$1.03 billion

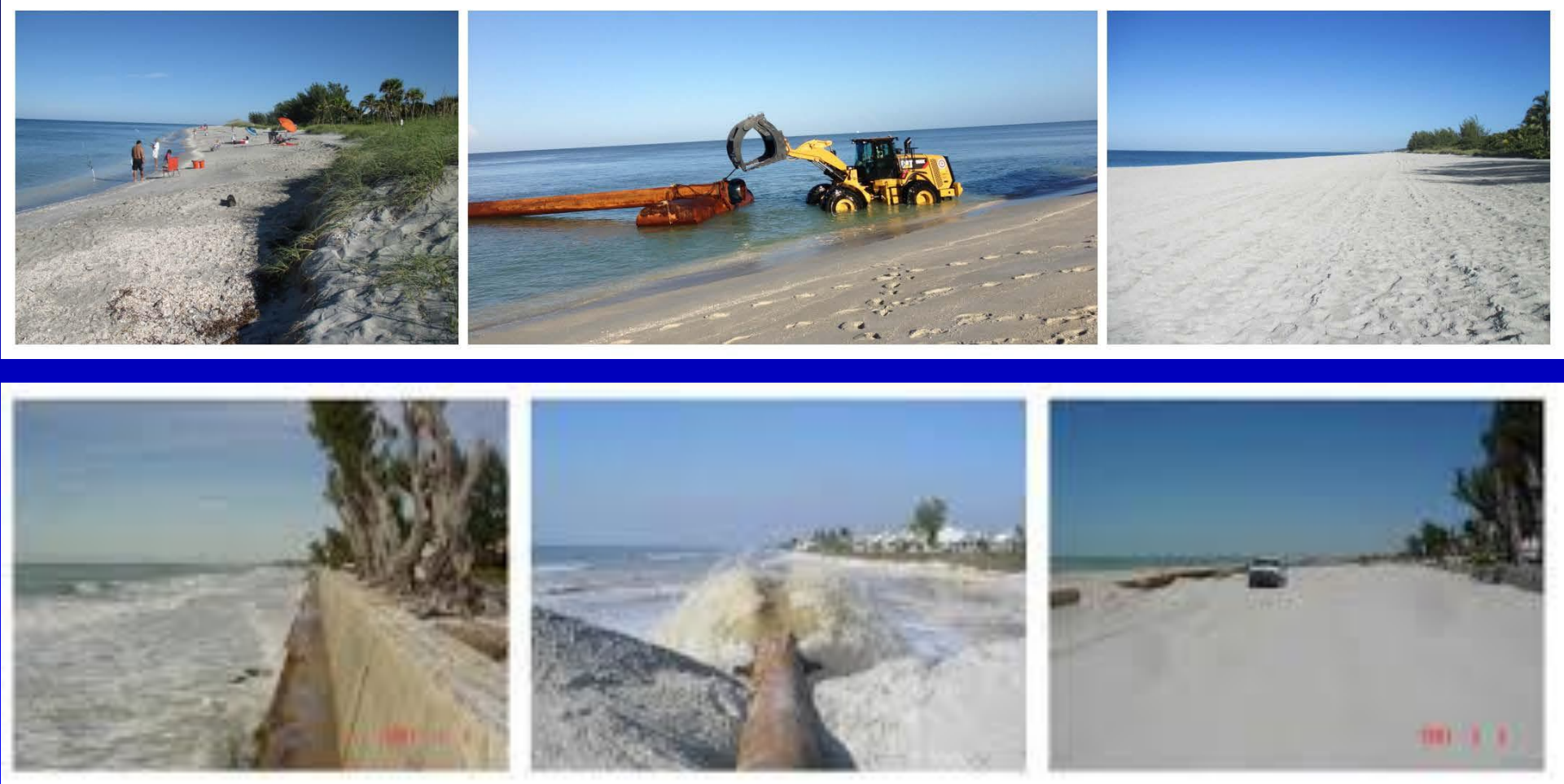
(Lee County Visitor & Convention Center, 2019)



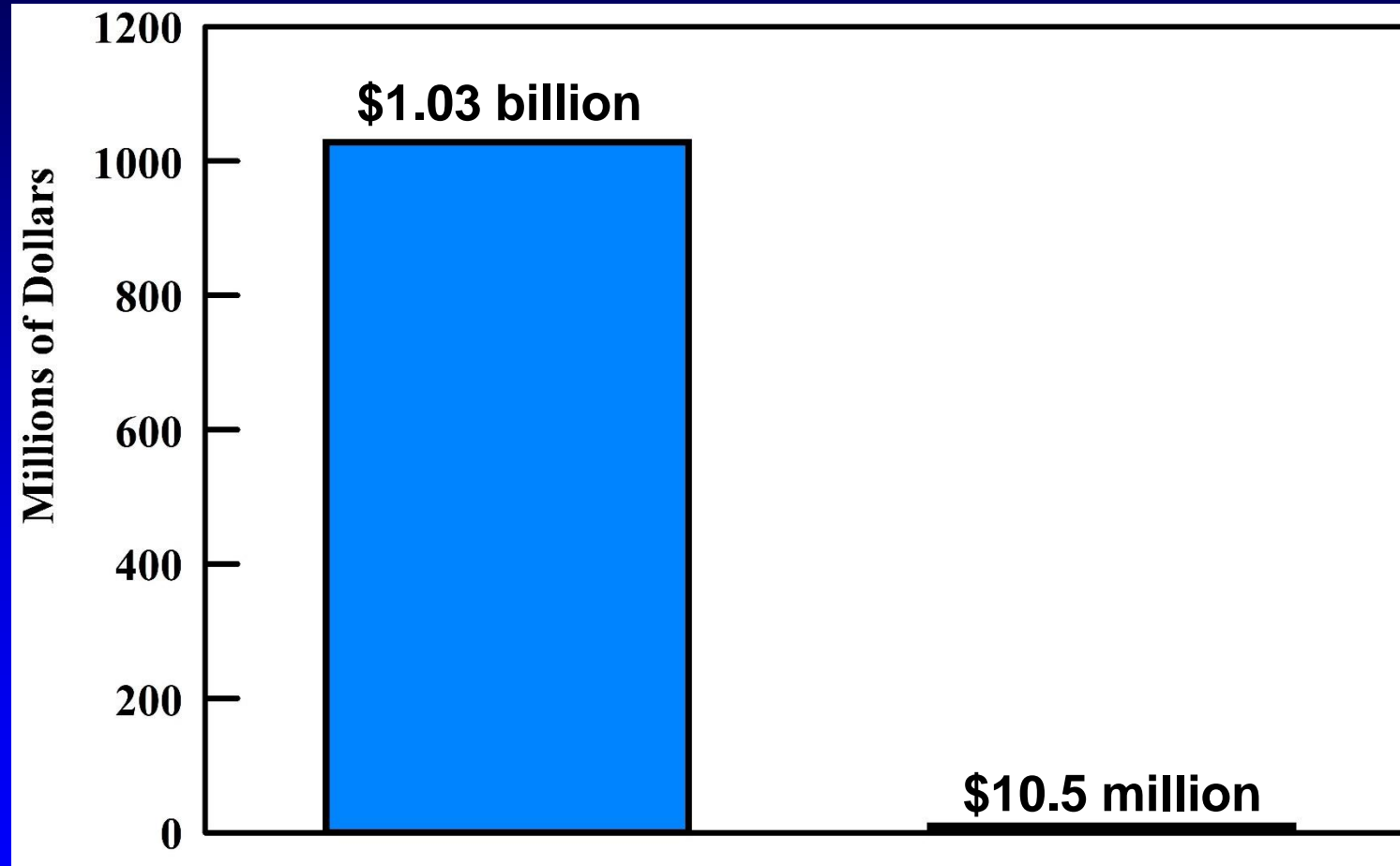
A Little of the Gold Must be Spent to Feed the Goose that Lays the Golden Eggs



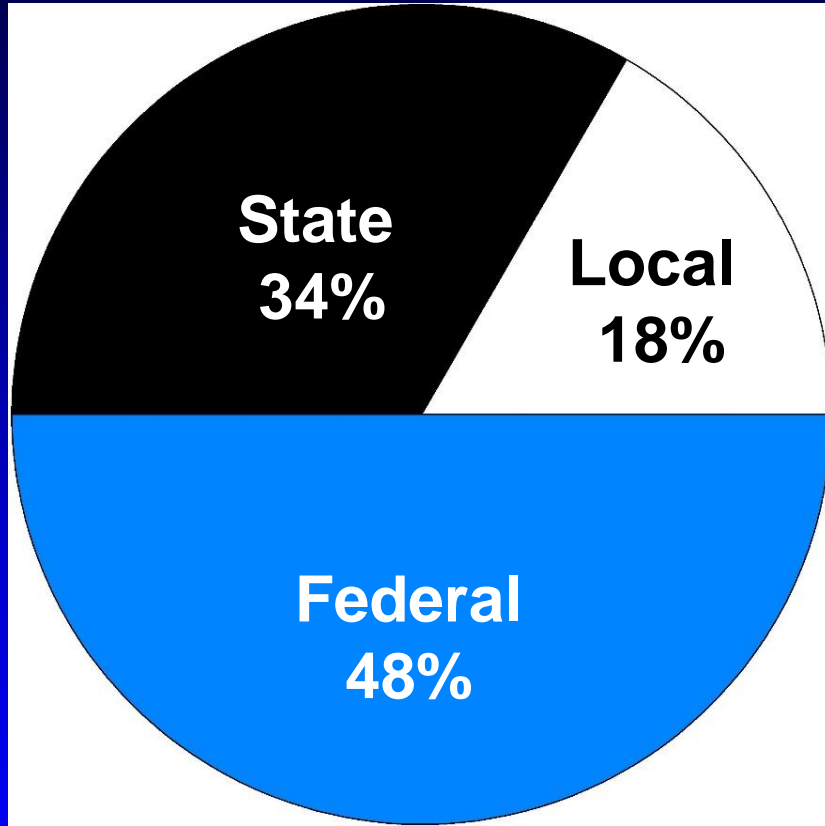
Beach Nourishment is the Food for Tourism in Lee County



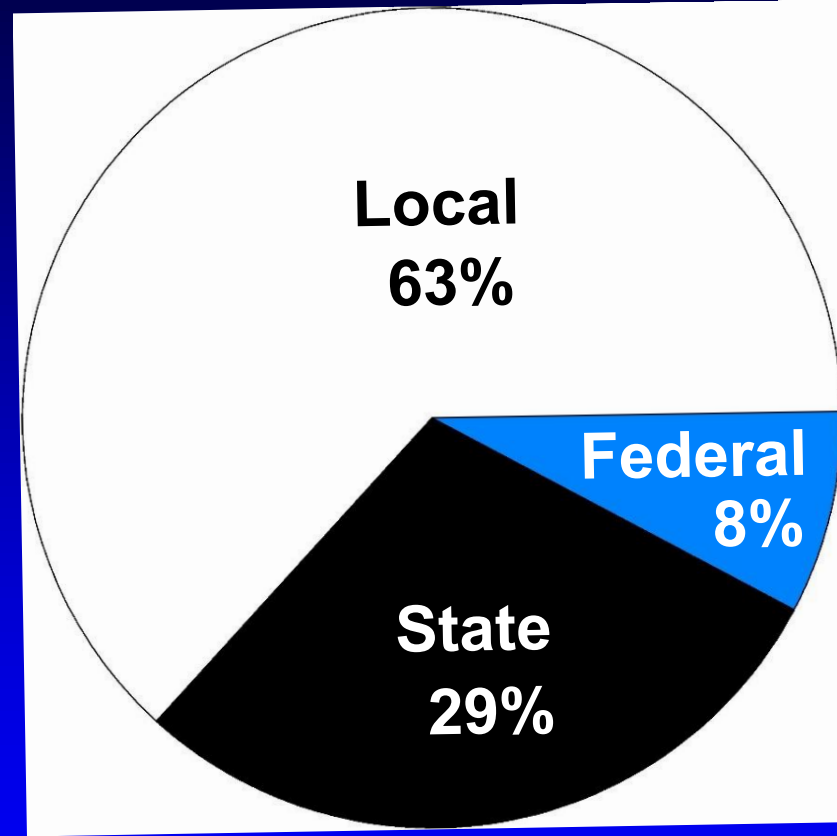
Annual Tax Income from Lee County Tourists Versus Nourishment Costs



Share of Tax Income Versus Nourishment Spending

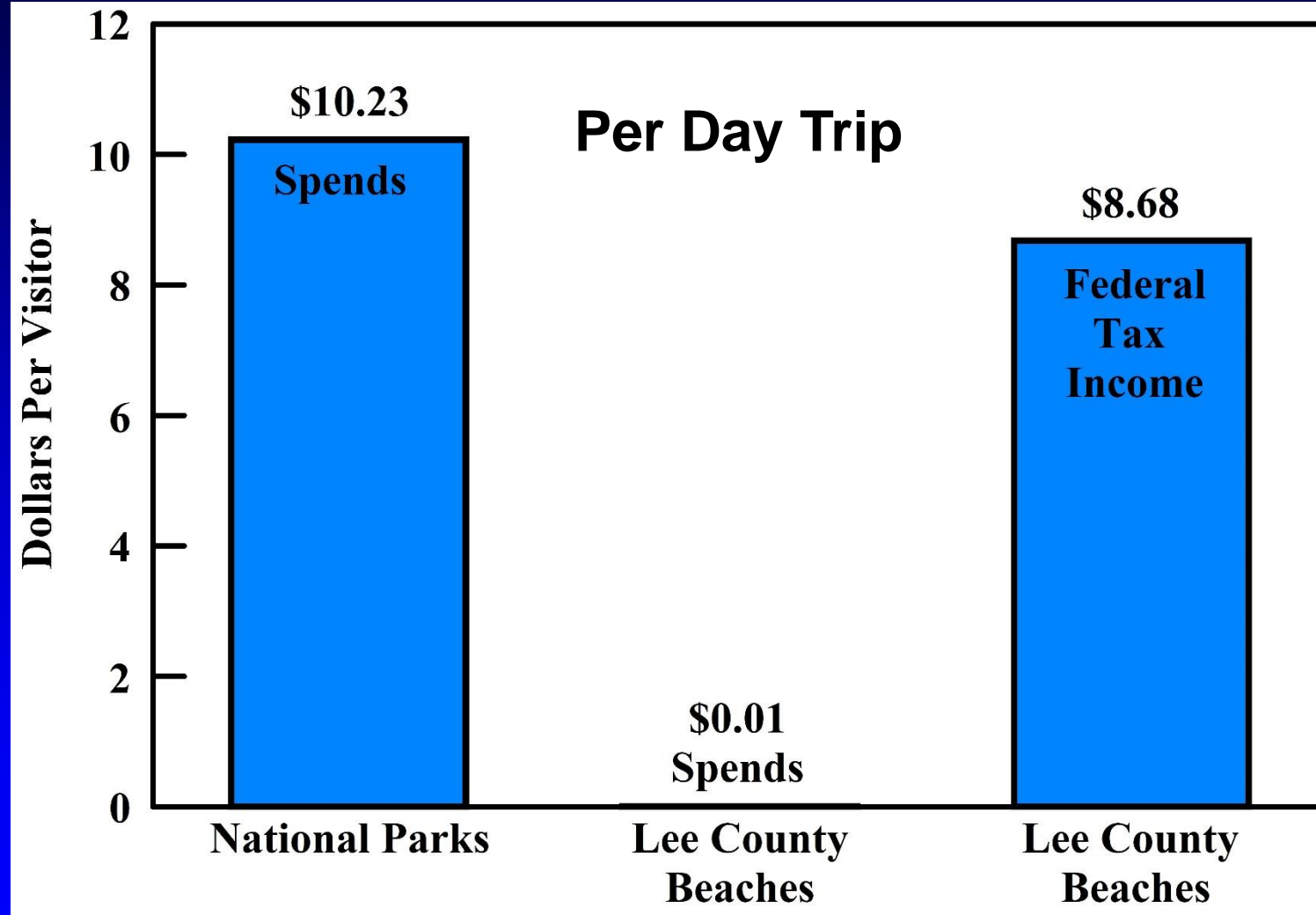


% Share of Tourism Tax Income



% Share of Beach Nourishment Spending

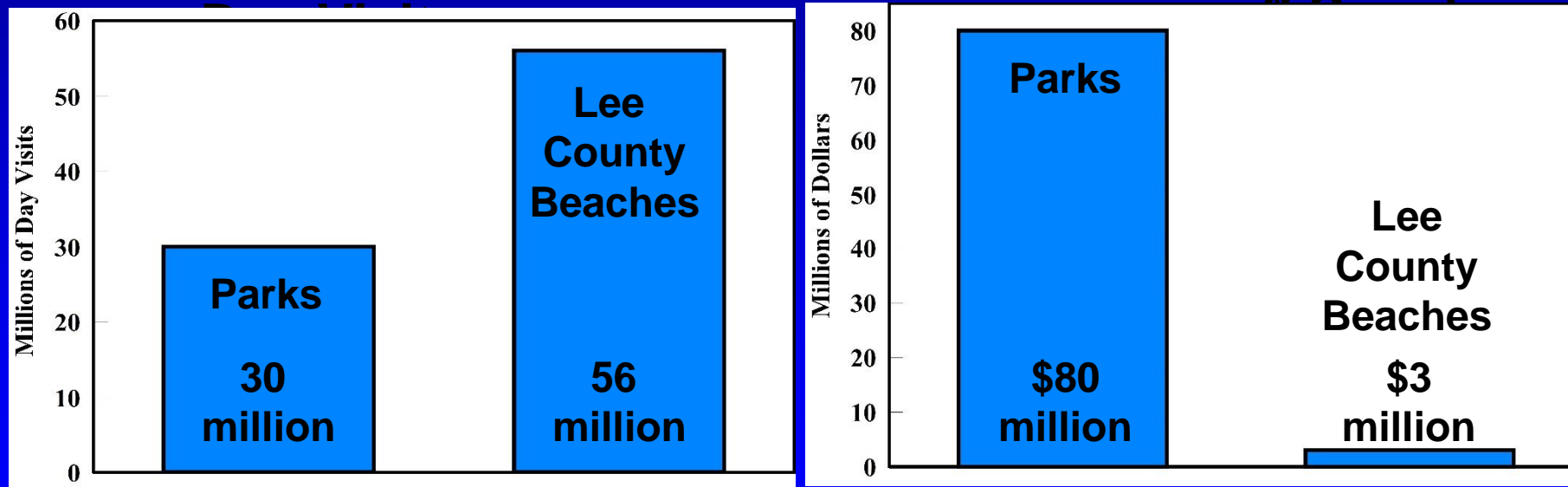
Both National Parks and Lee County Beaches Are National Treasures



National Park Service (2019), Lee County Visitor & Con Bureau (2019)

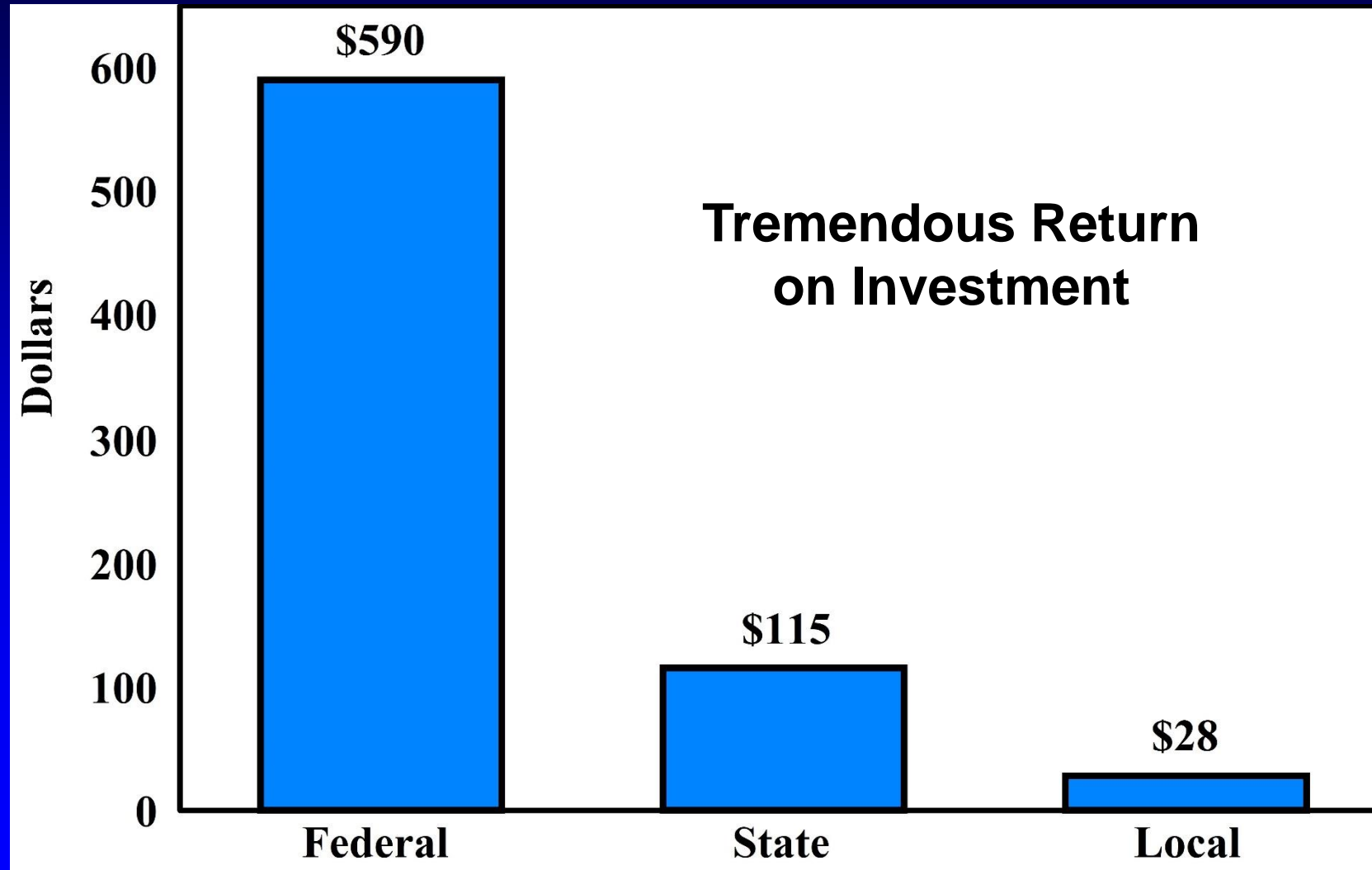
State Parks and Lee County Beaches Are State Treasures

- There are almost twice as many day trips to Lee County beaches than to all Florida parks
- However, the State spends 27 times more on parks

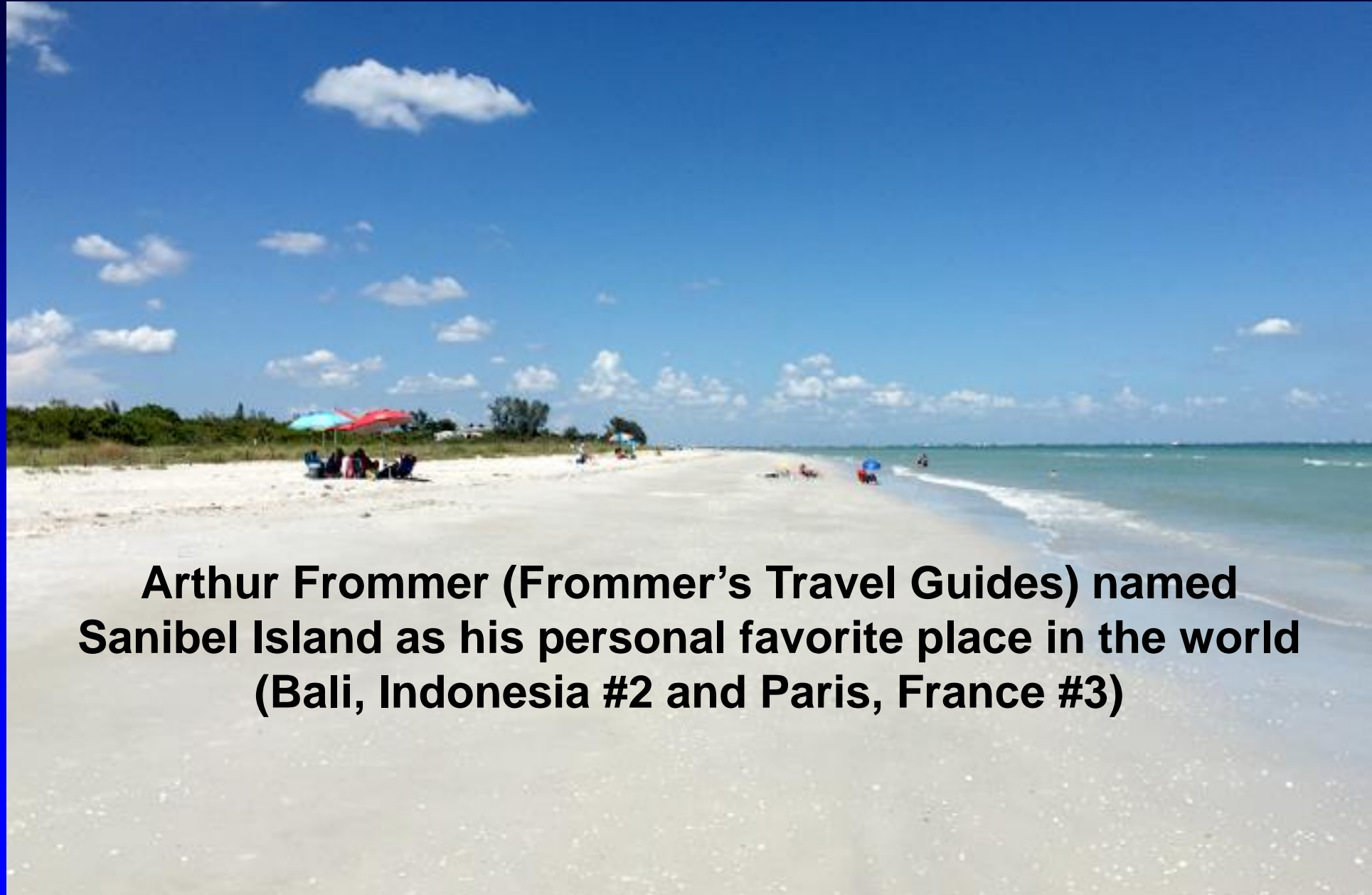


Lee County Visitor & Convention Bureau (2019)
Florida State Parks (2020)

Tax Dollars Received From Lee County Tourism For Each \$1 Spent on Nourishment

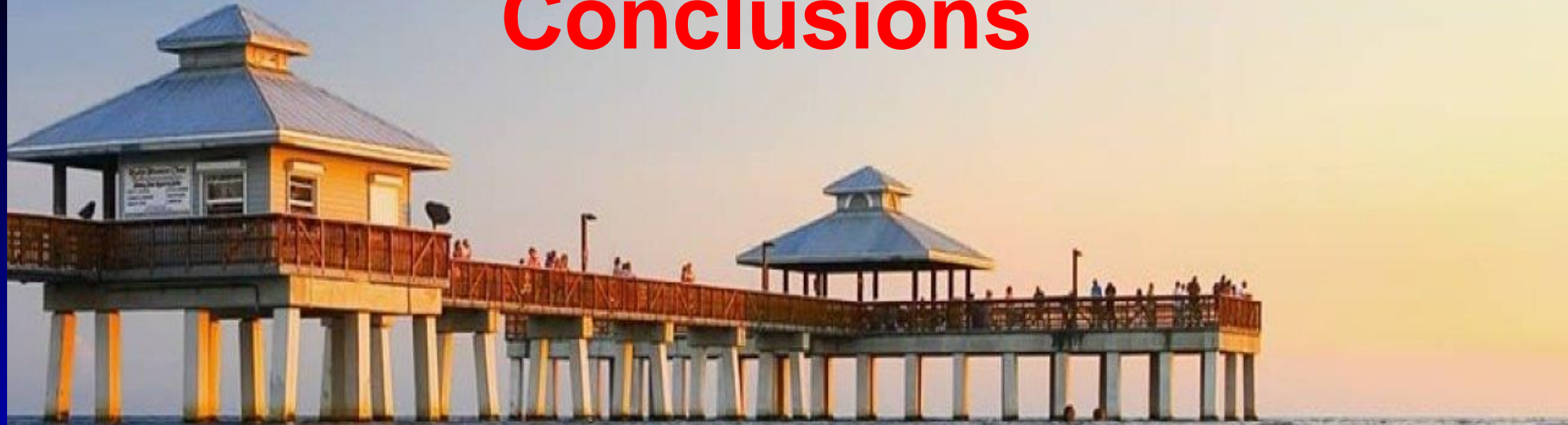


Lee County Beaches Are National Treasures



Arthur Frommer (Frommer's Travel Guides) named Sanibel Island as his personal favorite place in the world (Bali, Indonesia #2 and Paris, France #3)

Conclusions



Pier at Ft Myers Beach

- **Beaches are critical to the economy of Lee County**
- **There is a return of \$100 taxes to all levels of government for each \$1 invested in Lee County beach nourishment**
- **Like parks, beaches should be considered state and national treasures and maintained accordingly**

The End

