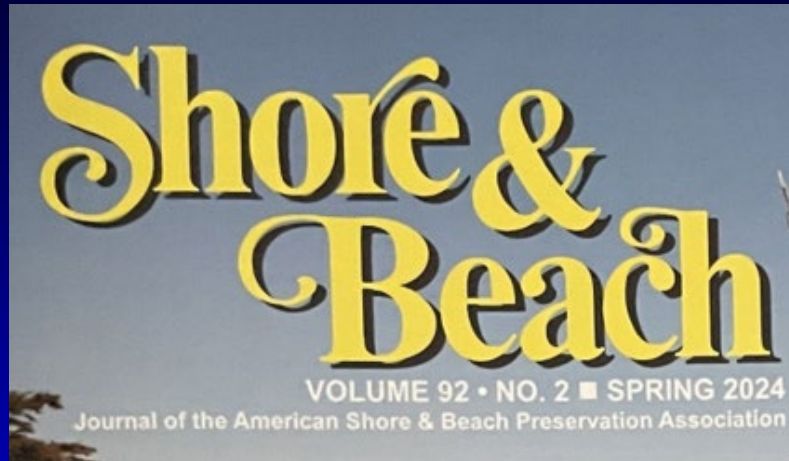


The Economic Value of America's Beaches



Based on a Paper



The economic value of America's beaches

By

James R. Houston

U.S. Army Engineer Research and Development Center
3909 Halls Ferry Road, Vicksburg, MS 39180
james.r.houston@usace.army.mil

ABSTRACT

Travel and Tourism (T&T) is among America's largest industries, its largest employer, and its largest producer of a trade surplus. It is also one of America's healthiest industries and is projected to grow at twice the rate of the U.S. economy over the next 10 years. The U.S. is the world's most competitive country in tourism, attracting more than three times the number of international tourists as any other country. Surveys have repeatedly shown that beaches are by far the most popular U.S. tourist destination. There are about 3.4 billion visits to U.S. beaches annually. This is an enormous number of visits — more than 225% times greater than the combined annual attendance at all National Park properties from the Washington Monument to the Grand Canyon; state parks; all amusement-park attractions such as Disney World; all professional and collegiate football, basketball, and baseball games; cruises; and events of the National Association for Stock Car Auto Racing. Beach tourists spend \$240 billion annually, more than the value of all crops grown in America or oil exported by Saudi Arabia. They generate an economic output of \$520 billion. U.S. tourism was hit hard during the coronavirus pandemic. However, unlike other tourism, beach tourism boomed during the pandemic, showing remarkable resilience as tourists flocked to beaches

that they thought were safe because they were in the open air with plenty of sunshine. Since then, science confirmed the safety of beaches during the pandemic. Beach nourishment provides unprecedented economic return, sustainable employment, and storm-damage protection. It has an extremely high return-on-investment, with U.S. beach tourists generating annually about \$3,000 in economic output, \$1,400 in direct spending, and \$200 in taxes for every \$1 spent on nourishment. The \$36 billion in taxes that U.S. beach tourists generate each year is over four times the total spent on all beach nourishment during the 100 years from the first beach nourishment in 1923 through 2022. Tourism jobs have boomed, providing one of every four new jobs in 2022. Moreover, tourism jobs in America cannot be outsourced and will not be impacted much by artificial intelligence. In addition to producing a booming economy by being a magnet for tourists, wide beaches and high dunes have been documented to provide billions of dollars in protection to land infrastructure during storms. However, beaches are threatened by erosion caused primarily by dams and navigation projects that greatly impact sand flowing to the coast and remaining in the littoral system. Beach nourishment is needed to mitigate this environmental impact and restore the balance.

Houston (2018a) highlighted the economic value of America's beaches, noting that the travel

ADDITIONAL KEYWORDS: Tourism, beach nourishment, pandemic, COVID, debris cleanup, jobs, trade

try (Economic Research 2023). U.S. T&T generated \$2.6 trillion in total (direct, indirect, and induced) economic output

Two Economic Values of Beaches

Attract tourists, residents, and prosperity



Pensacola, FL



Ocean City, MD



San Diego, CA

Protect infrastructure from storms

Panama City
Beach



After Hurricane Opal



After Hurricane Michael

Economic Value # 1

Beaches attract tourists, residents, and prosperity



Newport Beach, CA



Ocean City, MD



Pensacola, FL



Naples, FL



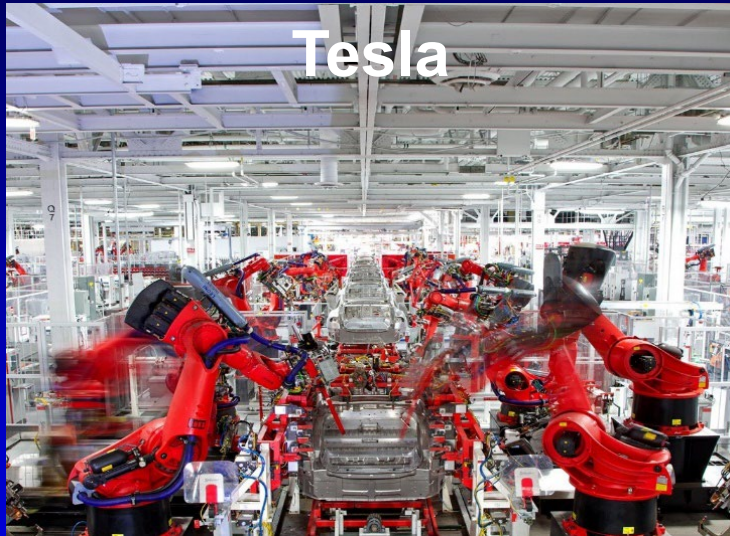
Honolulu, HI



San Diego, CA

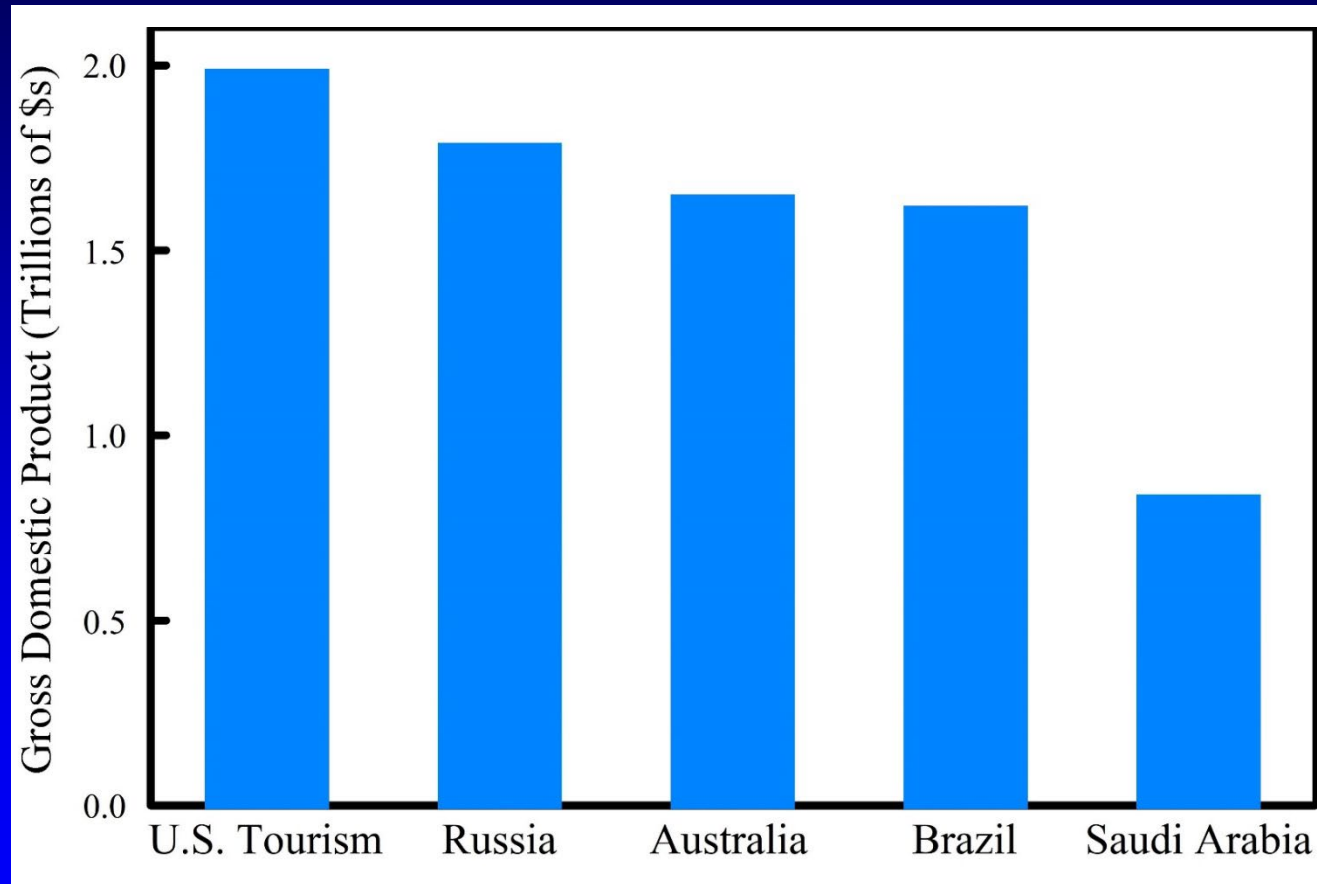
Put Tourism in Context – It is Huge

- U.S. tourism generates greater economic output (\$2.6 trillion) than all U.S. manufacturing combined (MacroTrends 2023; U.S. Travel Organization 2023)



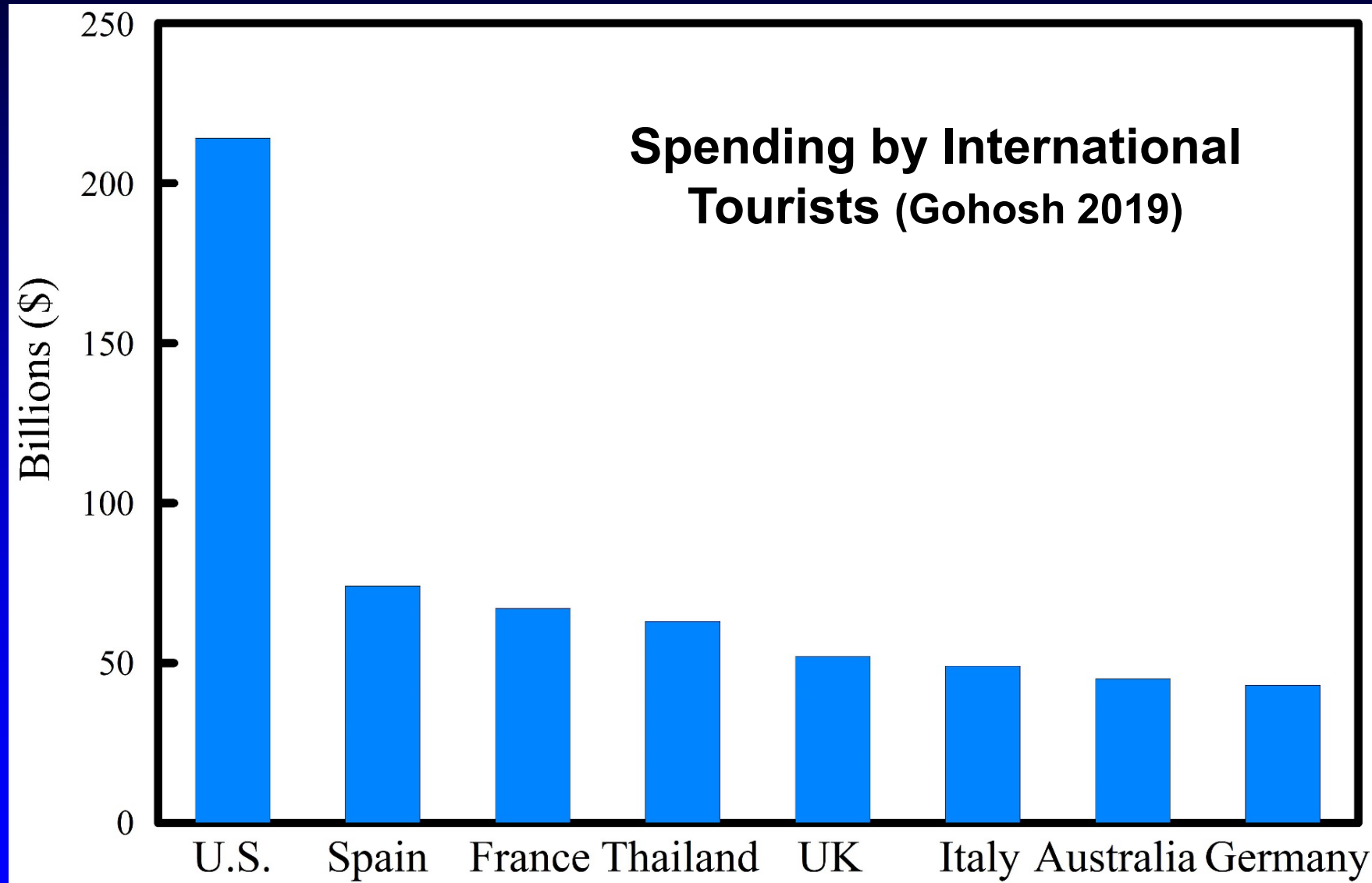
Gross Domestic Product (GDP)

- Tourism's contribution to U.S. GDP is > than the entire economies of major countries (Statista 2022: Statistictimes 2022)



- Moreover, world tourism is projected to grow more than twice the rate of the global economy in the next 10 years (World Travel and Tourism Council 2023)

U.S. is Winning the Tourism Competition



U.S. Has a Tourism Trade Surplus

Country	U.S. Trade Deficit Goods	U.S. Trade Surplus Tourism
China	382	28
Mexico	130	5
Japan	68	6
South Korea	43	6
India	38	11

(U.S. Department of Commerce 2021; U.S. Census.gov 2023)

Jobs

- Tourism is the largest U.S. employer with 15.8 million jobs compared to 12.8 million in manufacturing
(U.S. Bureau of Labor Statistics 2019; Statista 2023)
- But unlike manufacturing, it basically cannot be outsourced
- If a tourist wants to experience South Beach, Miami, that tourist must travel there, stay in a hotel, eat at restaurants, and pay for entertainment.



Beaches Are Key to U.S. Tourism

- A national Harris Poll found:
“74% said the beach was the most favored type of place to go on vacation”
(Plansponsor.com 2019)
- “66% of families plan a beach vacation in the next 12 months, making beaches by far the number one vacation destination for families” (Minnaert, 2022)



Beaches Are America's Recreational King

- There are about 3.4 billion tourist visits to beaches annually in the U.S.
(U.S. Department of Commerce 2022; U.S. Lifesaving Association 2023; Winfm.com 2023; Houston 2024)

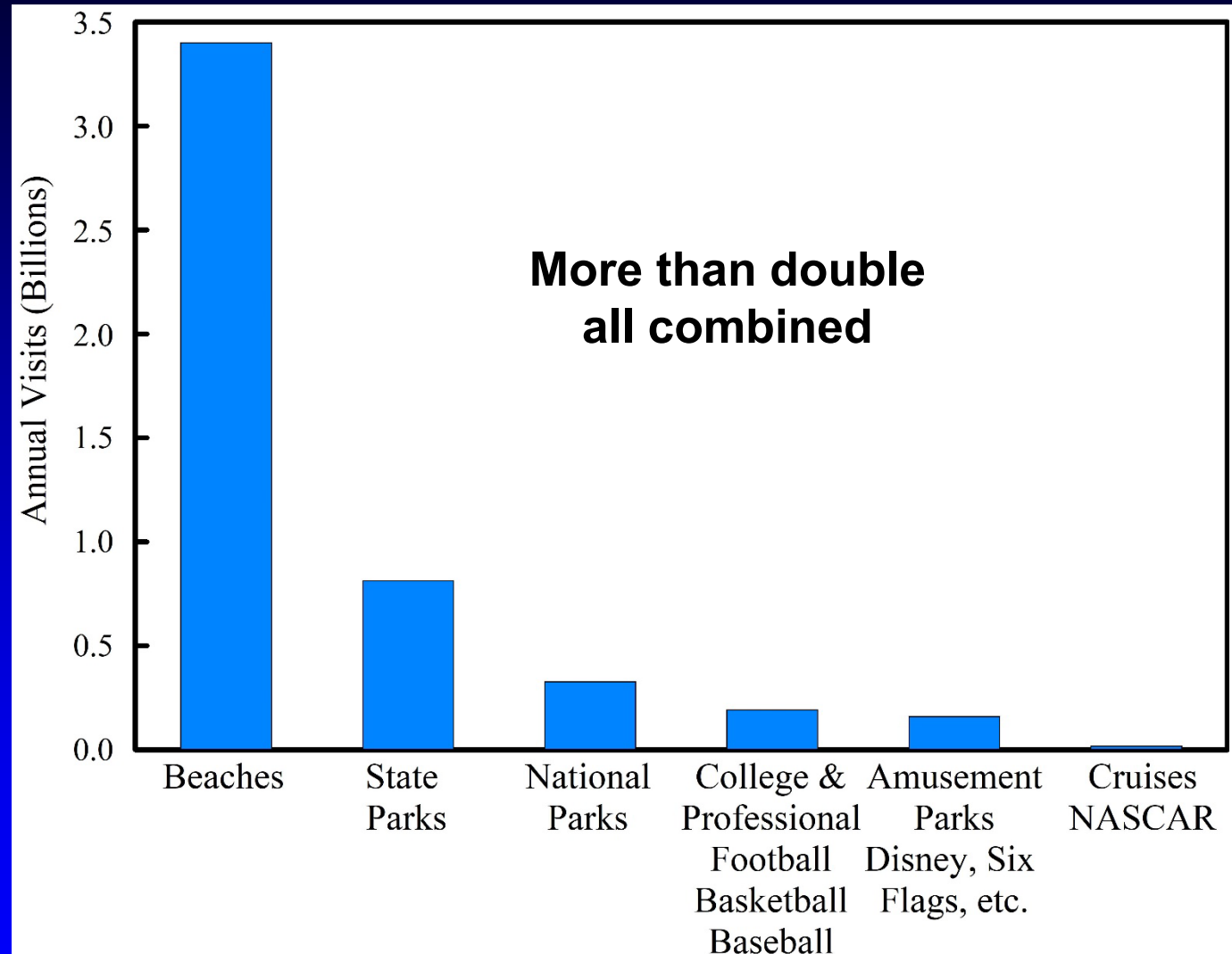
Coney Island, NY



Miami Beach



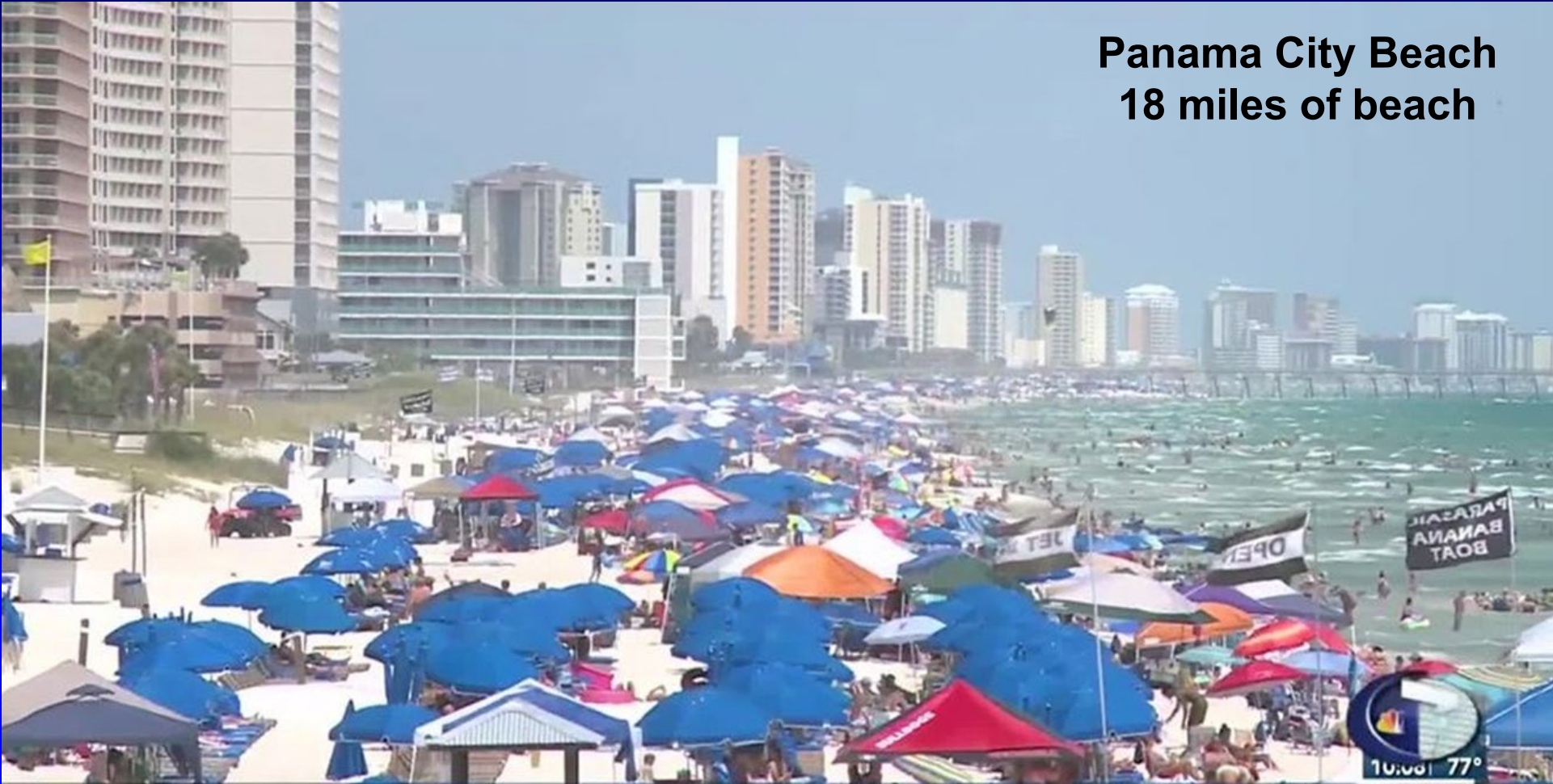
Beaches Dominate Recreation



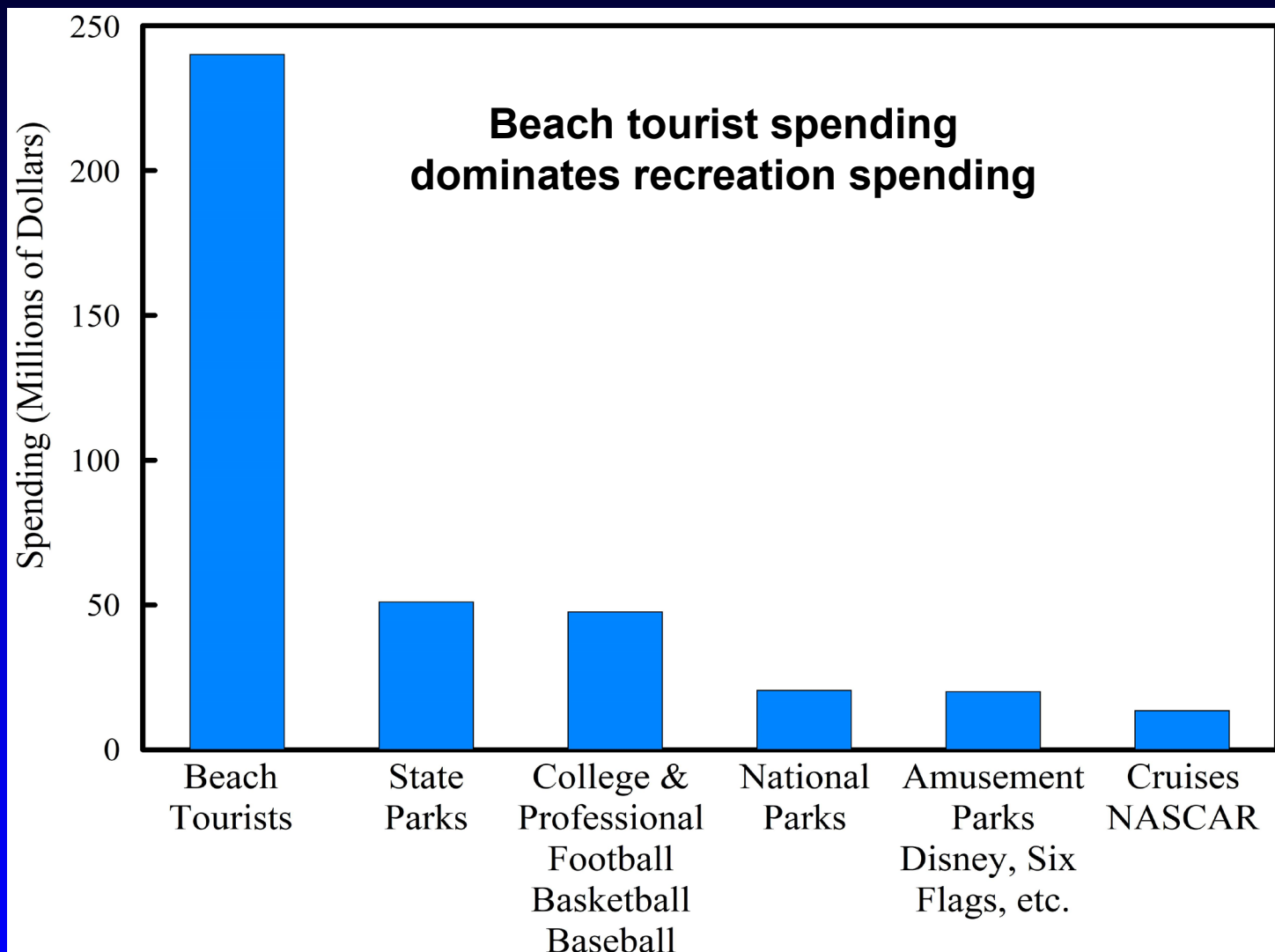
(NCAA 2019; Themed Entertainment Association 2019; National Park Service 2020; U.S. Department of Commerce 2022; Statista 2022; Baseball America 2023; MotorracingSports 2023; NBA 2023; NFL 2023; Houston 2024)

Beach Tourist Spending is More than Umbrellas

- Panama City Beach has a population of 15,000, which increases to 100,000 during peak summer months (PanamaCityBeach.com, 2022)

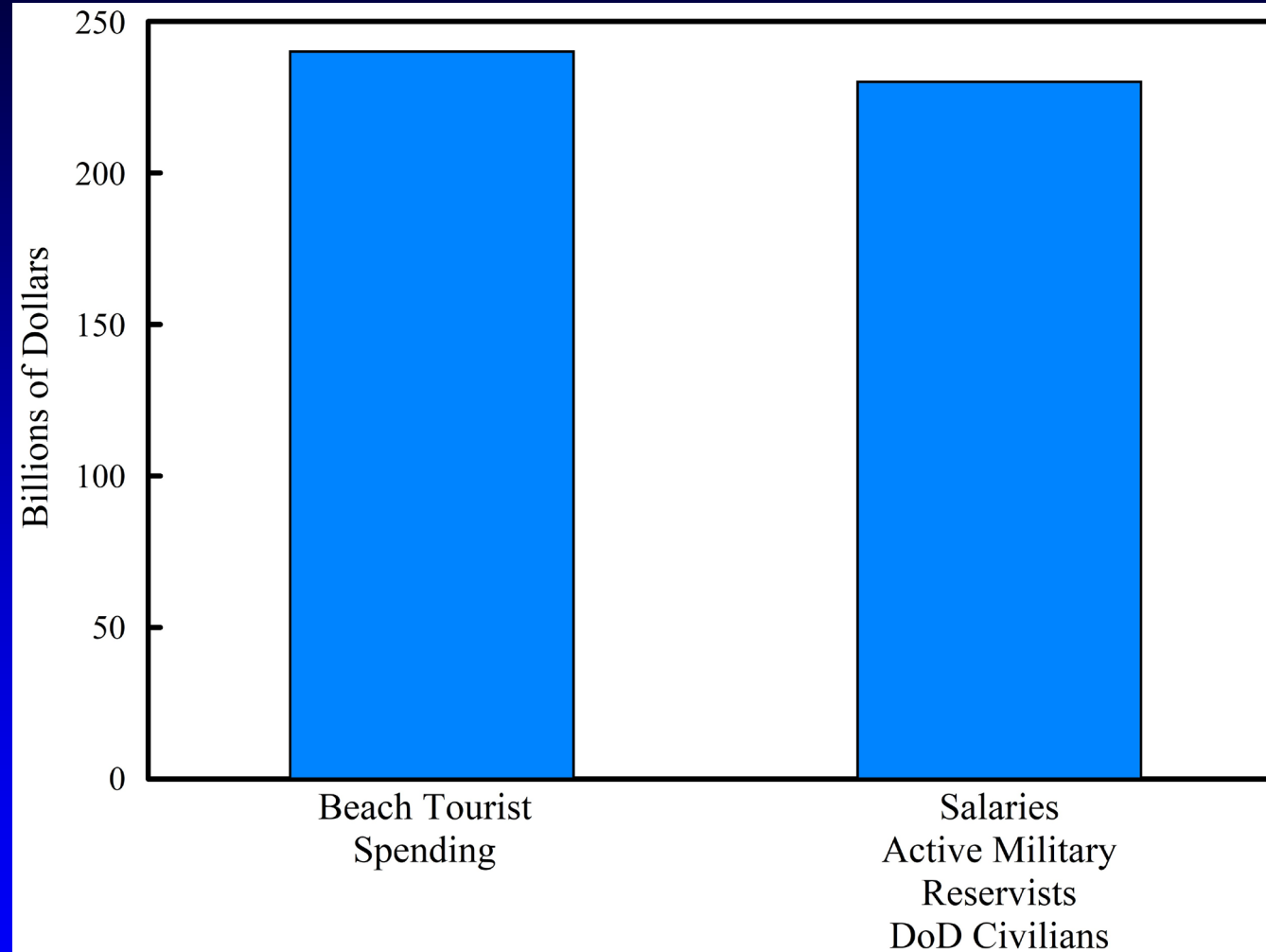


Beaches Dominate Spending



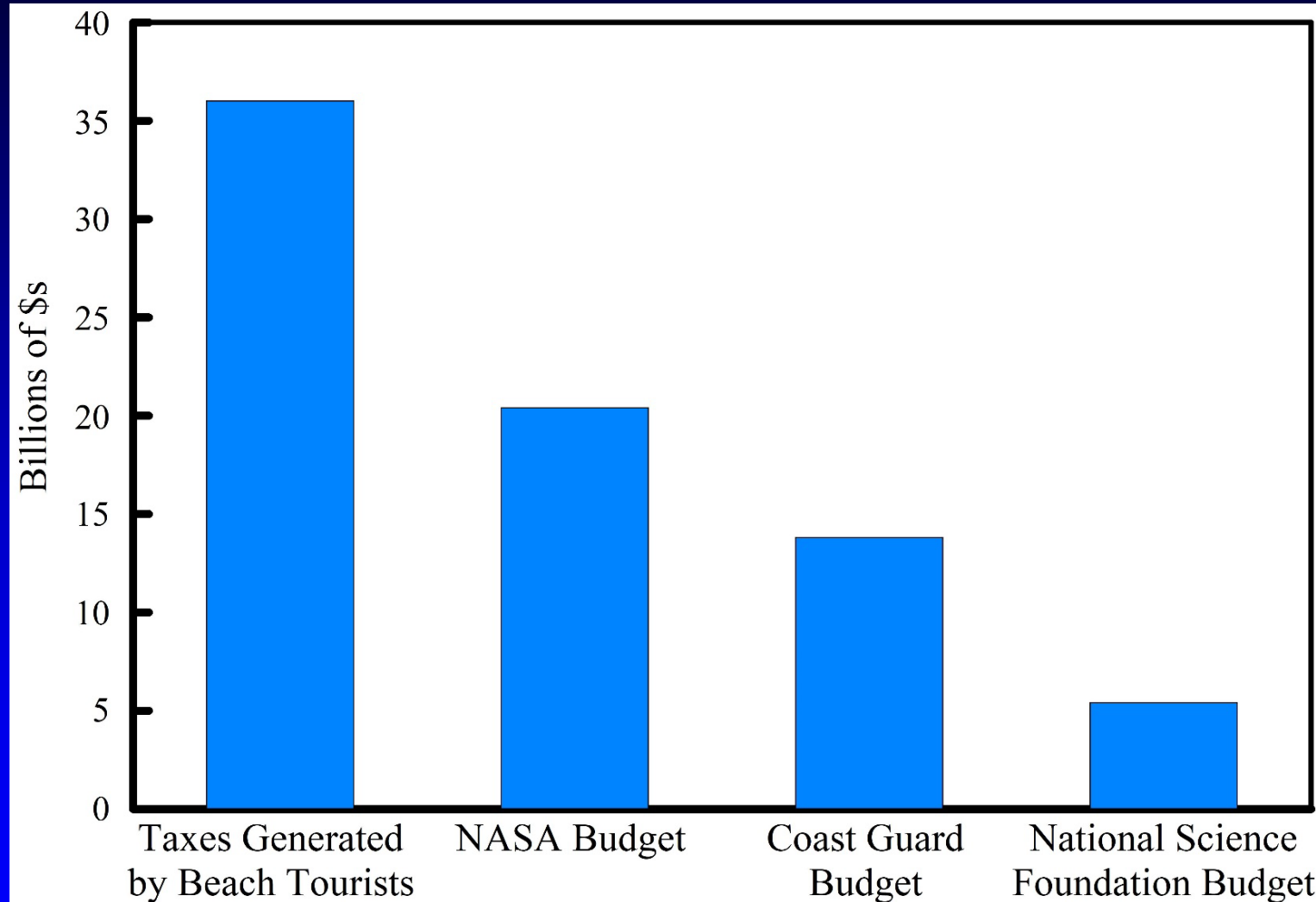
(Federal Reserve Economic Data 2022; Sportsco.com 2022; Sportsvalue.com 2022; U.S. Department of the Interior 2022; Crawford 2023; Forbes 2023; Rookieroad 2023; Statista Research Department 2023; Houston 2024)

Beach Tourist Spending is Huge



(National Center for Education Statistics 2023; Congressional Budget Office 2024; Houston 2024; Salary.com 2024)

Tax Revenues Generated by Beach Tourists



(U.S. Travel Organization 2023; Nationaldefensemagazine 2024; USASpending.com 2024)

What Happens When Beaches Become Too Narrow?

- By 1977, Miami Beach essentially had no beach, and as a result:
 - “*So rapidly has the seven-mile-long island degenerated that it can be fairly described as a seedy backwater of debt-ridden hotels*” (Time Magazine 1977)
- Newly-elected Miami Beach Mayor Kasdin said in 1977, “**Business was so bad in Miami Beach I was happy just to see prostitutes**” (New York Times 2009)



When Beaches are Restored

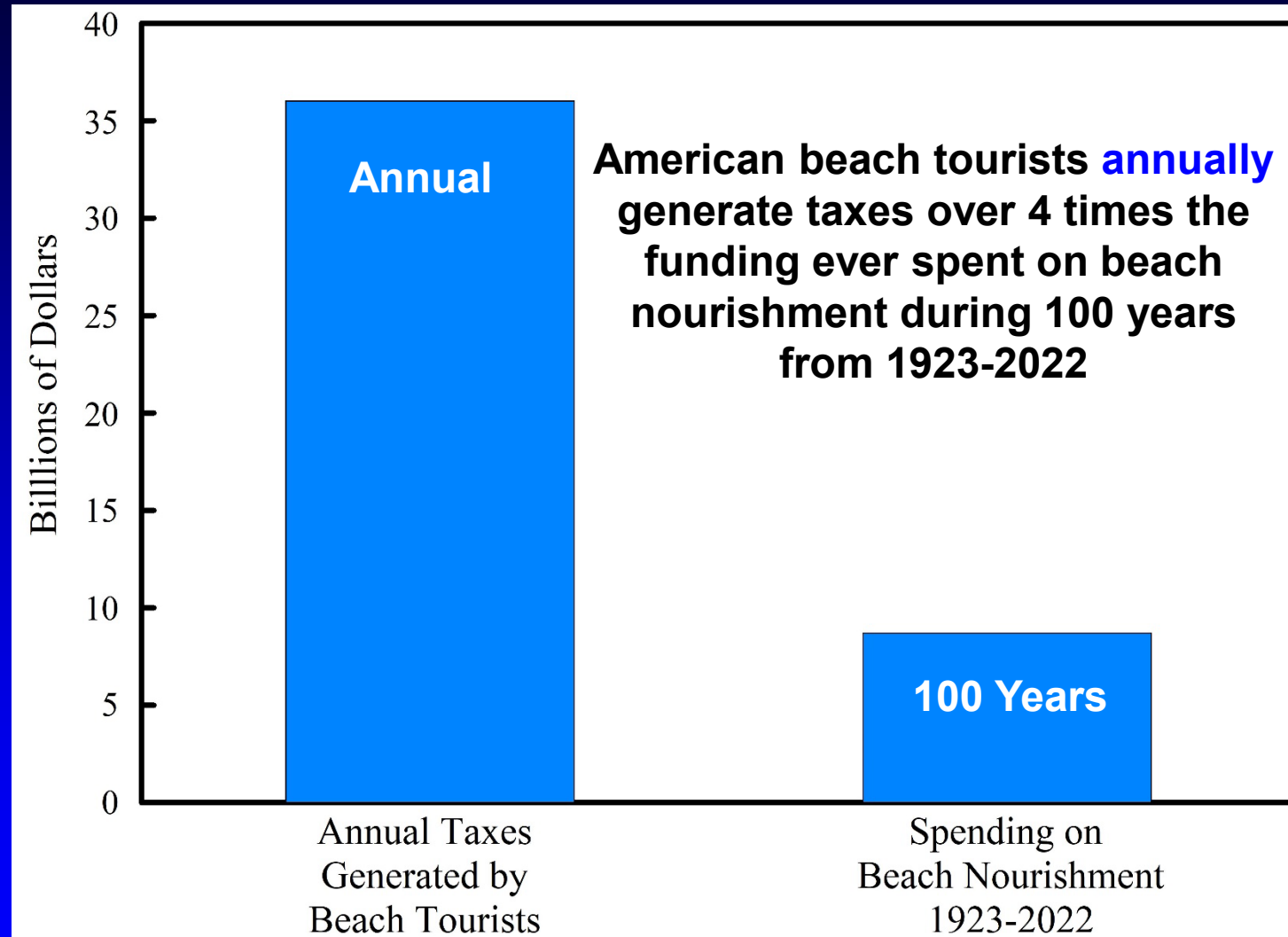
- 1st year increase in tourist spending at Miami Beach was 5 times the nourishment cost (Wiegel, 1992)
- Today, tourists generate \$2.6 billion in taxes, or \$500 in annual taxes for every \$1 spent on nourishment (DeLisa, 2023; Greater Miami the Beaches, 2022; Rockport Analytics, 2023)



1977: Miami Beach was a “**seedy backwater of debt-ridden hotels**”

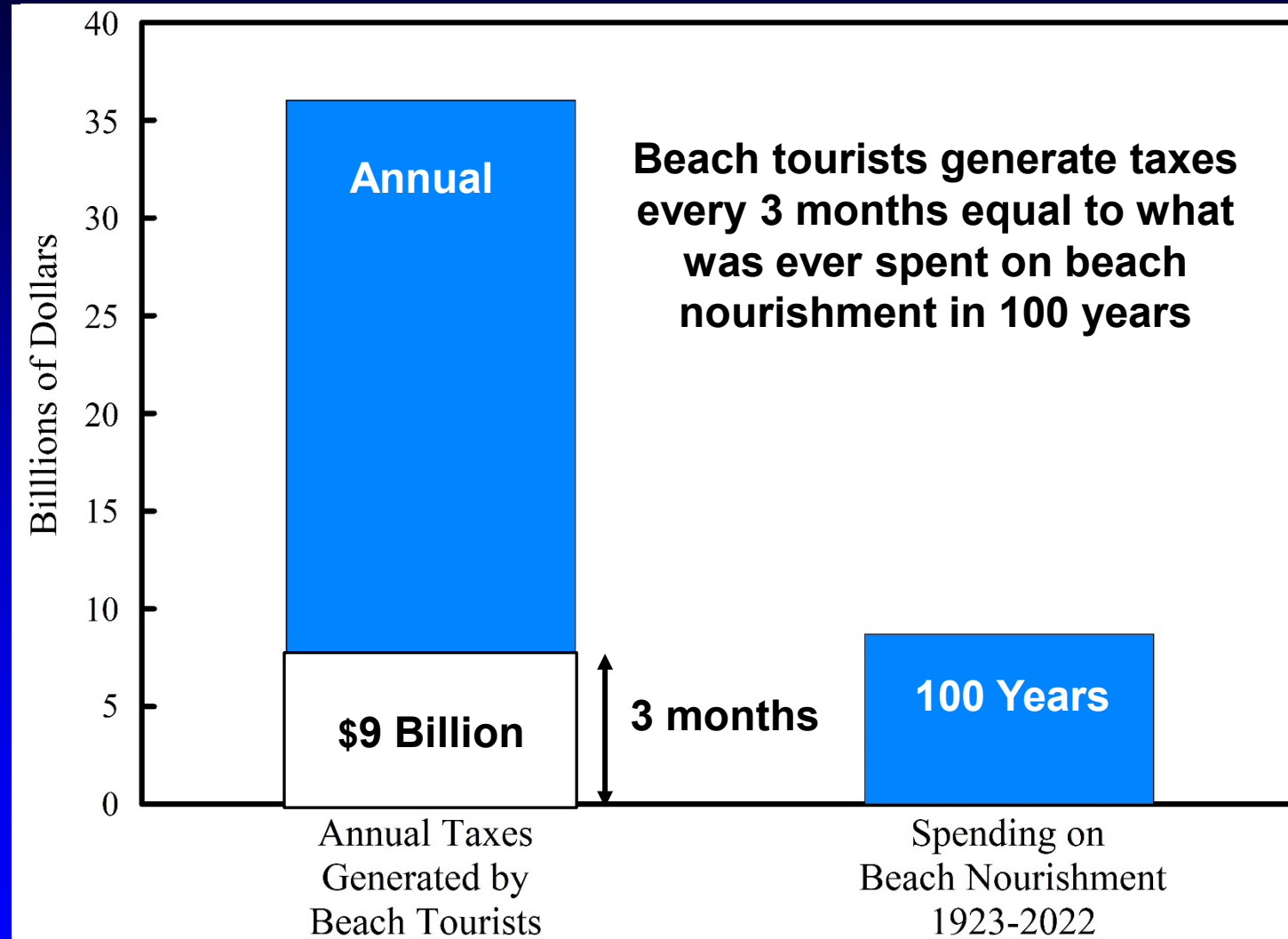
Today: Miami Beach is the most valuable property of Florida’s 992 active zip codes, with an estimated value of \$29.2 billion (Bergstrom Applied Research 2023)

Beach Tourist Tax vs Nourishment



(U.S. Travel Organization 2023; American Shore and Beach Preservation Association 2024)

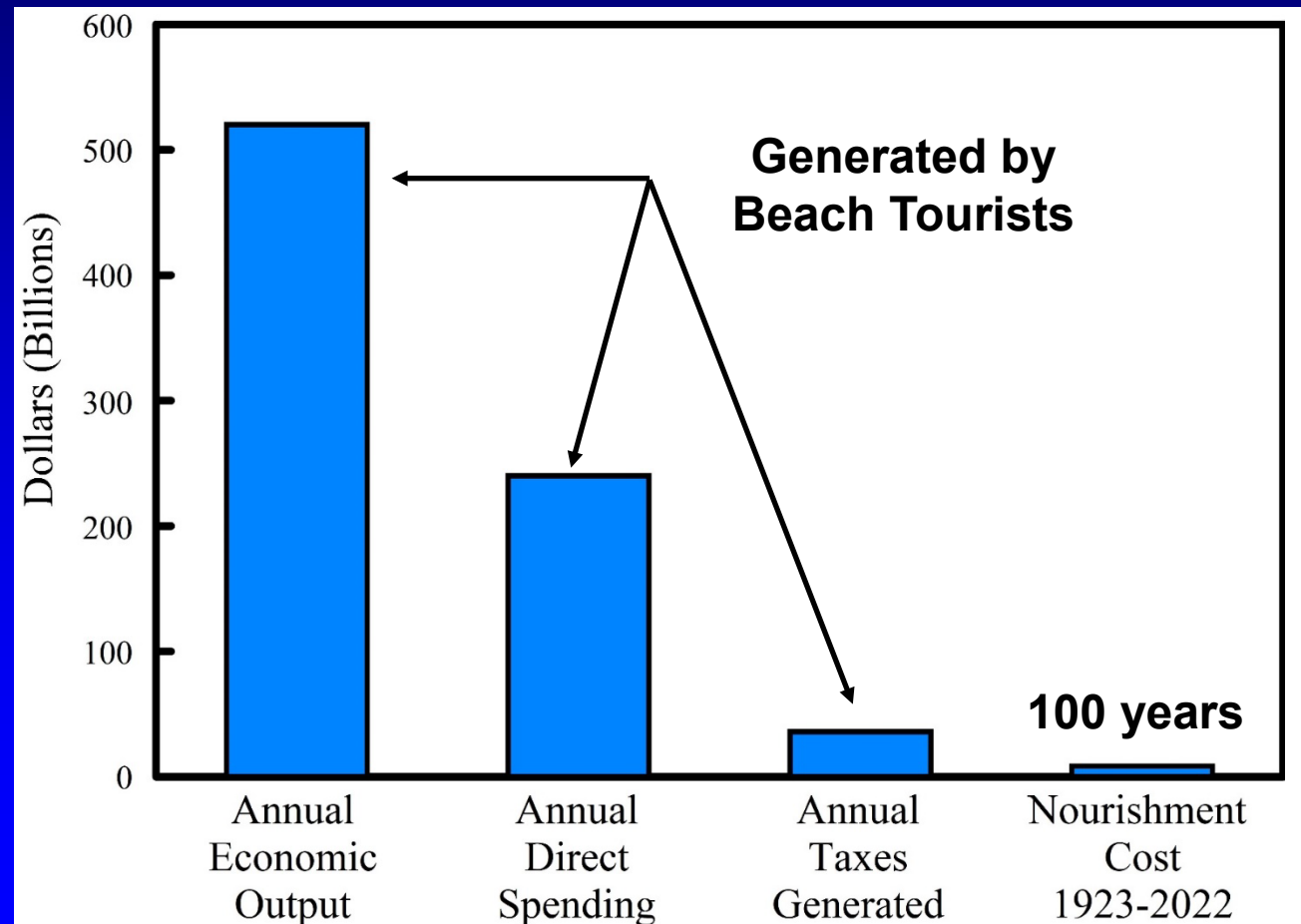
Beach Tourist Tax vs Nourishment



(U.S. Travel Organization 2023; American Shore and Beach Preservation Association 2024)

Huge Return on Investment

- For every \$1 spent annually on beach nourishment, beach tourists spend \$3300, add \$1520 to the U.S. GDP, and generate \$228 in taxes
(U.S. Travel Organization 2023; Federal Reserve 2024)

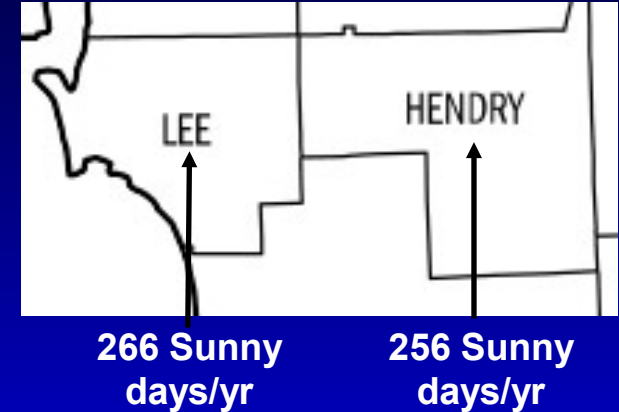


What Makes Florida Prosperous?

Is it the great sunny weather that attracts people/businesses?

- Lee and Hendry counties have about the same weather, but Lee has a GDP 26 times greater and per capita income 60% greater

(U.S. Bureau of Economic Development 2023)



Is it having an ocean coast?

- Lee County's beaches have a GDP/mile 30 times greater than the 5 coastal counties lacking beaches on the Florida's Big Bend muddy coast and a per capita income 50% greater

(Federal Reserve Economic Database, 2022)

Having a sandy coast is THE difference

- What would the economy of Panama City Beach be if it had always had a muddy coast rather than sandy beaches?

Economic Value # 2

Beaches protect infrastructure from storms

Narrow
Beaches



Wide
Beaches



The Basic Problem

- 17 of the 20 worst hurricanes have occurred since 2000 and produced \$1 trillion in damages (NOAA 2021)
- The East and Gulf coasts are in the cross hairs



Florida



New Jersey



Texas

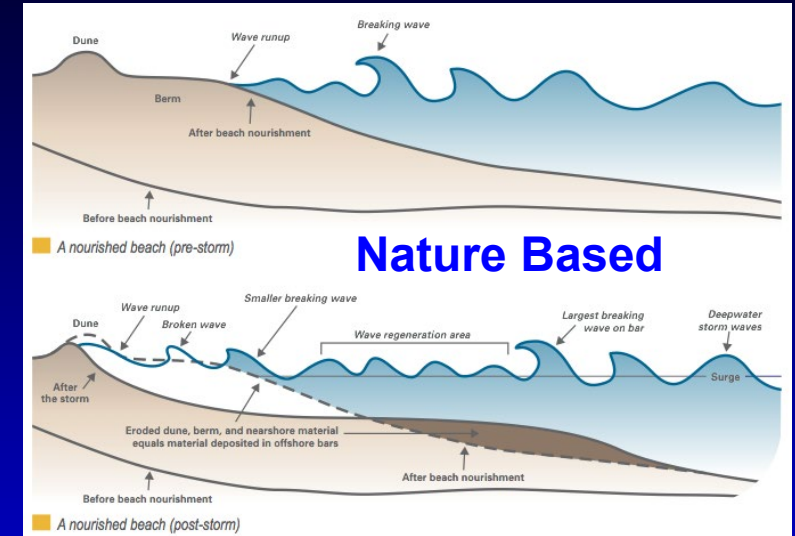
One Solution – Widen Beaches

- **“Beach nourishment pushes the shoreline seaward. The destructive force of storm waves thus falls on the beach rather than on upland structures”**
(National Research Council 1995)



Does Nourishment Reduce Damages?

- “It is a **nature based** coastal risk reduction strategy that is designed and engineered to mimic natural features for the purpose of attenuating storm surge” (National Research Council 2014)
- Based on Hurricane Eloise data, Bob Dean showed that wide beaches almost eliminate storm wave and surge damage (Dean 2001)



Hurricane Sandy, New Jersey

- **“It really, really works. Where there was a federal beach fill in place, there was no major damage, no homes destroyed, no sand piles in the streets”**
(Dr. Stewart Farrell, Director NJ Coastal Research Center, 2012)



Holgate- no nourishment

6 miles apart

“Devastating. It’s a complete war zone”
(NJ.com 2012)

**Brant Beach had nourishment,
Pre-Sandy**



Same Park Bench

“No overwash or wave damage”
Post-Sandy



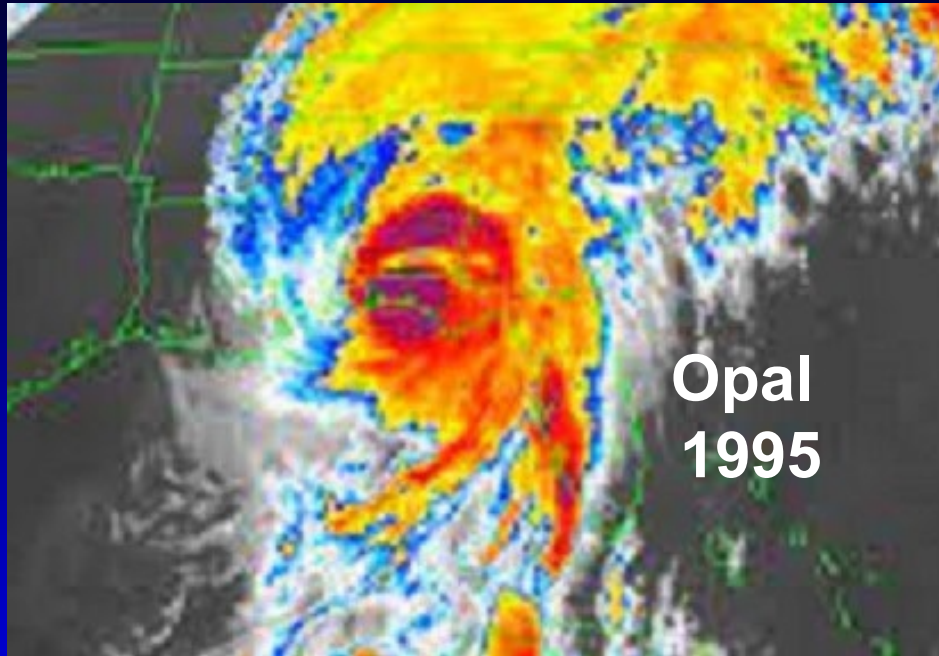
(Barone et al, 2014)

Hurricane Sandy – New York

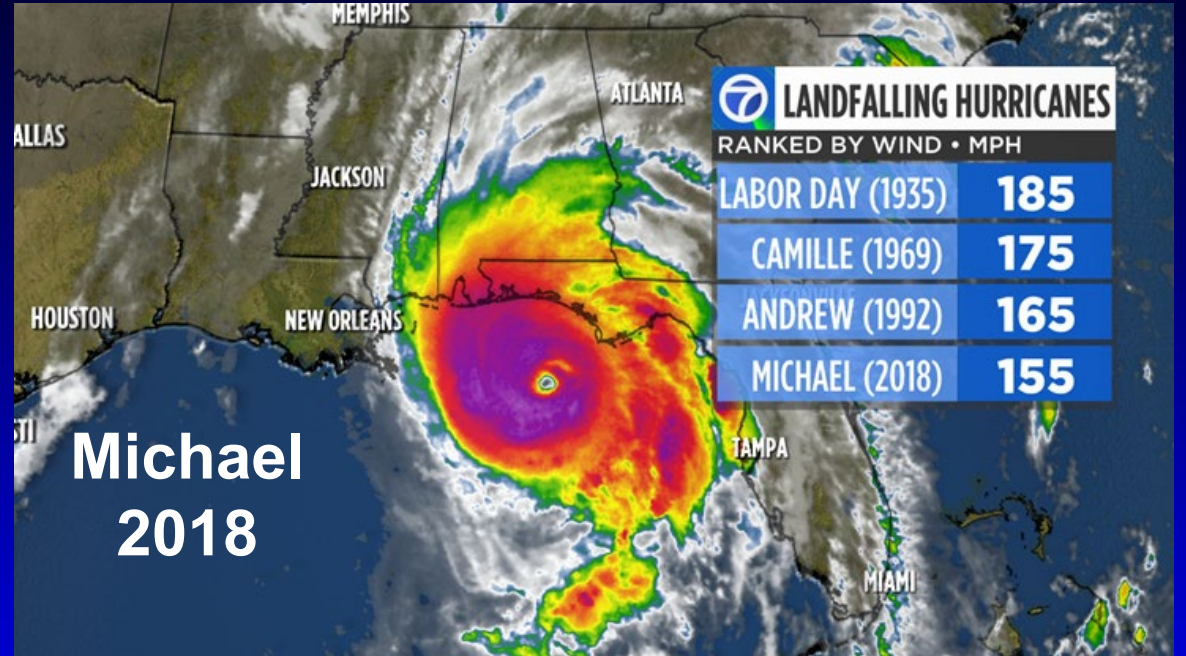
- Coney Island, NY, had minimal damage with its nourished beach estimated to have prevented \$494 million damages
- Immediately adjacent at Seagate, “**protected by bulkheads**”, there were “**extreme damages**” (Corps of Engineers 2012)



Tale of Two Hurricanes



“Marginally a Category 3 hurricane” when it came ashore about 80 miles from Panama City and struck narrow beaches (National Hurricane Center, 1995)



“Category 5 storm”, the 4th strongest to ever hit the U.S. when it came ashore only 20 miles from Panama City and struck wide beaches (NOAA, 2019)

Opal Struck Narrow Beaches

- Opal caused “**massive surge and wave damage**” to 471 coastal structures at Panama City Beach when it hit narrow beaches
(Florida Department of Environmental Protection - DEP, 2019)
- Panama City started a large beach nourishment in 1998 (FDEP, 2019)



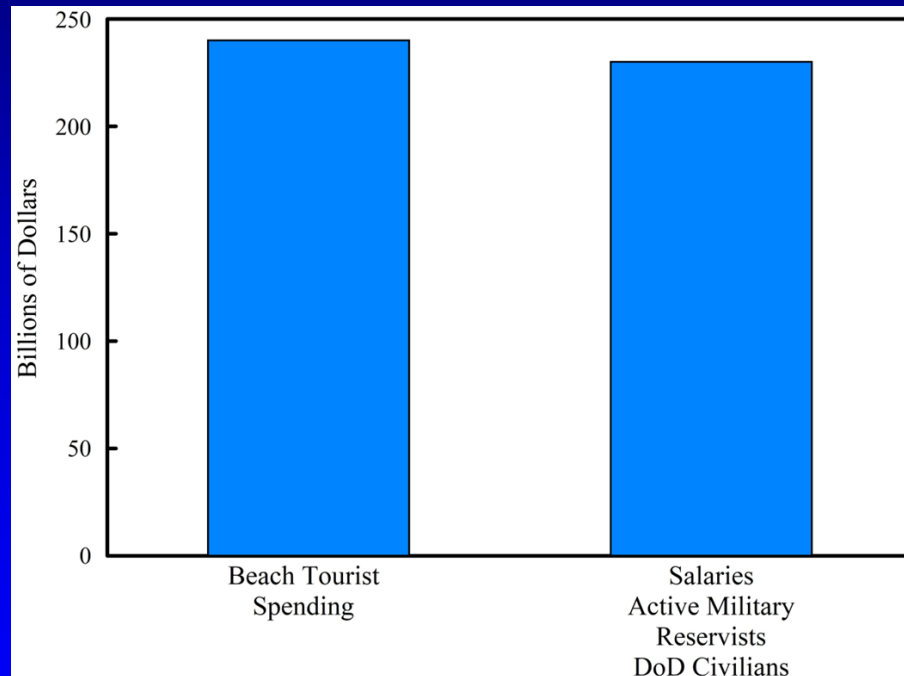
Michael Struck Wide Beaches

- During Michael, beach nourishment sand **“protected all beach fronting development and infrastructure along Panama City Beach”**, with no surge or wave damage (FDEP, 2019)
- Opal caused **“massive surge and wave damage”** and Michael caused none
- Four months after Michael, Panama City Beach was named the 3rd best of 352 beaches in America (MyPanhandle.com, 2019)
- In 2021, Panama City Beach tied with Huntington, Beach, CA, as the most visited beach in America (Newsweek 2021)

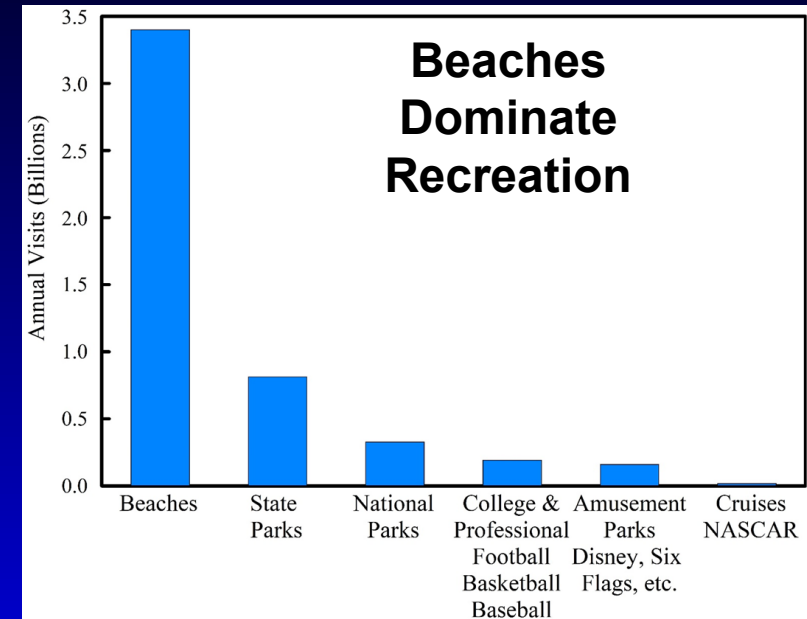


Conclusions

- **Beaches are America's Recreational King**



- **Beach tourist spending is a key part of the U.S. economy**



- **Nourishment Protects**

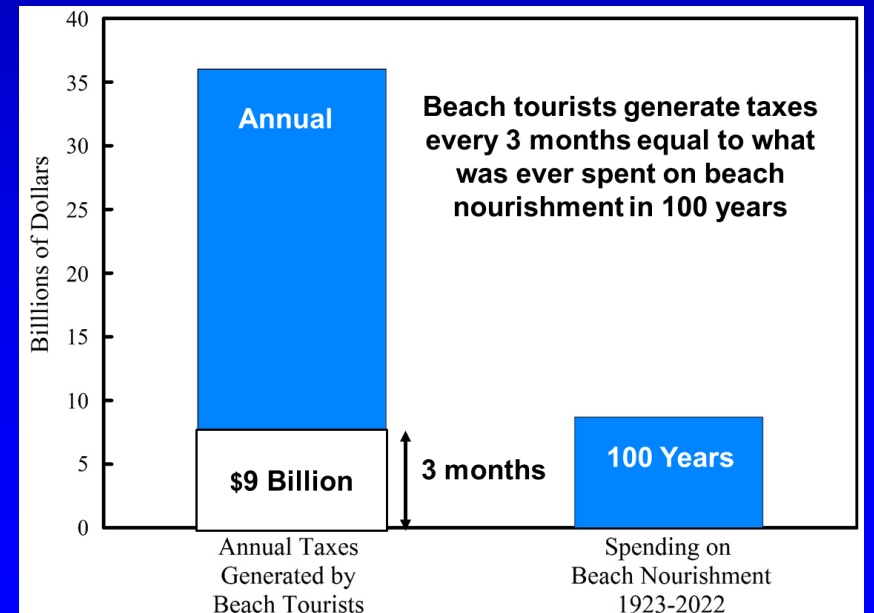
Conclusions

- Miami Beach illustrates the consequences of a disappearing beach and what happens when it is restored

(From a “**seedy backwater of debt-ridden hotels**” to the most valuable property in Florida)



- Beach nourishment is a bargain



Narrow Beach



Alternative

Wide Beach



City becomes so rundown that the mayor is happy just to see prostitutes

City booms and becomes Florida's most valuable property



A minimal Category 3 hurricane, 80 miles away, causes massive wave/surge damage



Category 5 hurricane, 20 miles away, causes no wave/surge damage and beach becomes the most visited in America

A full-page background image of a sunset over a beach. The sun is low on the horizon, casting a bright orange glow across the sky and reflecting on the water. The sky is filled with scattered clouds, some of which are illuminated by the setting sun. The ocean has small waves breaking, and white foam is visible in the foreground where the waves meet the sandy beach.

The End

Beaches Rock