



LAKE WORTH WATERKEEPER®

Est. 2017
501(c)3

Melissa Landis, Education Director

www.lakeworthwaterkeeper.org

Melissa.l@lakeworthwaterkeeper.org

Lake Worth Lagoon Watershed





3 Pillars



Water Quality Monitoring



November 26th, 2022 (Samples collected November 25th)

Lake Worth Lagoon Watershed Bacteria Results: LAKE WORTH LAGOON - COASTAL ESTUARY

- Lakeside Park (North Palm Beach)**
Coordinates: 26.8171, -80.0537
Result: **POOR** 379 cfu/100ml
- MacArthur SP Kayak Launch (North Palm Beach)**
Coordinates: 26.8159, -80.0384
Result: **GOOD** 10 cfu/100ml
- Pine Point Road (Riviera Beach)**
Coordinates: 26.7976, -80.0393
Result: **GOOD** <10 cfu/100ml
- Phil Foster Park (Riviera Beach)**
Coordinates: 26.7832, -80.0424
Result: **POOR** 74 cfu/100ml
- Bicentennial Park (Riviera Beach)**
Coordinates: 26.7742, -80.0521
Result: **MODERATE** 63 cfu/100ml
- Osprey Park (West Palm Beach)**
(Inaccessible - under construction)
Coordinates: 26.7562, -80.0510
Result: **GOOD** 31 cfu/100ml
- Palm Beach Country Club (Palm Beach)**
Coordinates: 26.7439, -80.0421
Result: **GOOD** 30 cfu/100ml
- Lake Trail (Palm Beach)**
Coordinates: 26.7192, -80.0430
Result: **MODERATE** 52 cfu/100ml
- Brazilian Docks (Palm Beach)**
Coordinates: 26.7041, -80.0443
Result: **GOOD** <10 cfu/100ml

NOTE: Enterococcus bacteria standards are **GOOD** (<35 cfu/ml), **MODERATE** (35-70 cfu/100ml), and **POOR** (>70 cfu/100ml)



November 26th, 2022 (Samples collected November 25th)

Lake Worth Lagoon Watershed Bacteria Results: LAKE WORTH LAGOON - COASTAL ESTUARY

- George Petty Park (West Palm Beach)**
(Inaccessible - under construction)
Coordinates: 26.6845, -80.0490
Result: N/A
- Spillway Park (Lake Worth Beach)**
Coordinates: 26.6445, -80.0545
Result: **POOR** 6,488 cfu/100ml
- Jewell-Steinhardt Cove (Lake Worth Beach)**
Coordinates: 26.6122, -80.0389
Result: **POOR** 452 cfu/100ml
- Bryant Park Boat Ramp (Lake Worth Beach)**
Coordinates: 26.6143, -80.0476
Result: **GOOD** 10 cfu/100ml
- Sportsman's Park Boat Ramp (Lantana)**
Coordinates: 26.5839, -80.0475
Result: **POOR** 4,106 cfu/100ml
- Ocean Inlet Park (Boynton Beach)**
Coordinates: 26.5441, -80.0450
Result: **POOR** 231 cfu/100ml
- Harbor Estates (Boynton Beach) (Inaccessible)**
Coordinates: 26.5388, -80.0528
Result: N/A

NOTE: Enterococcus bacteria standards are **GOOD** (<35 cfu/ml), **MODERATE** (35-70 cfu/100ml), and **POOR** (>70 cfu/100ml)

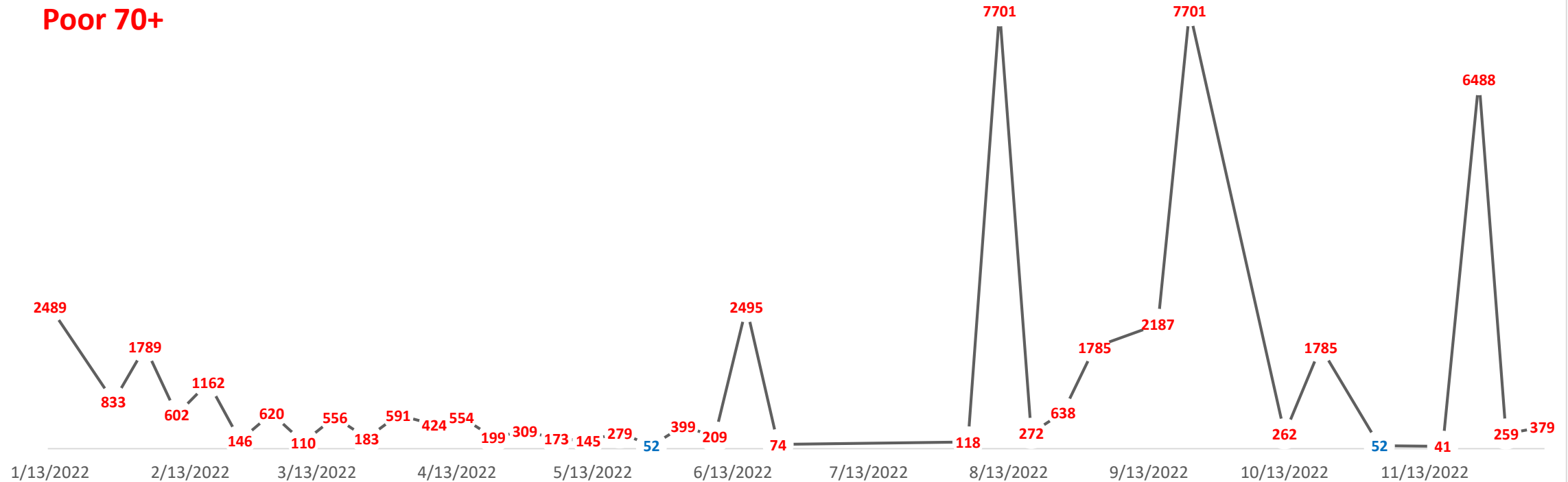


Enterococcus – Indicator Bacteria



SPILLWAY PARK 2022 RESULTS (CFU/100ML)

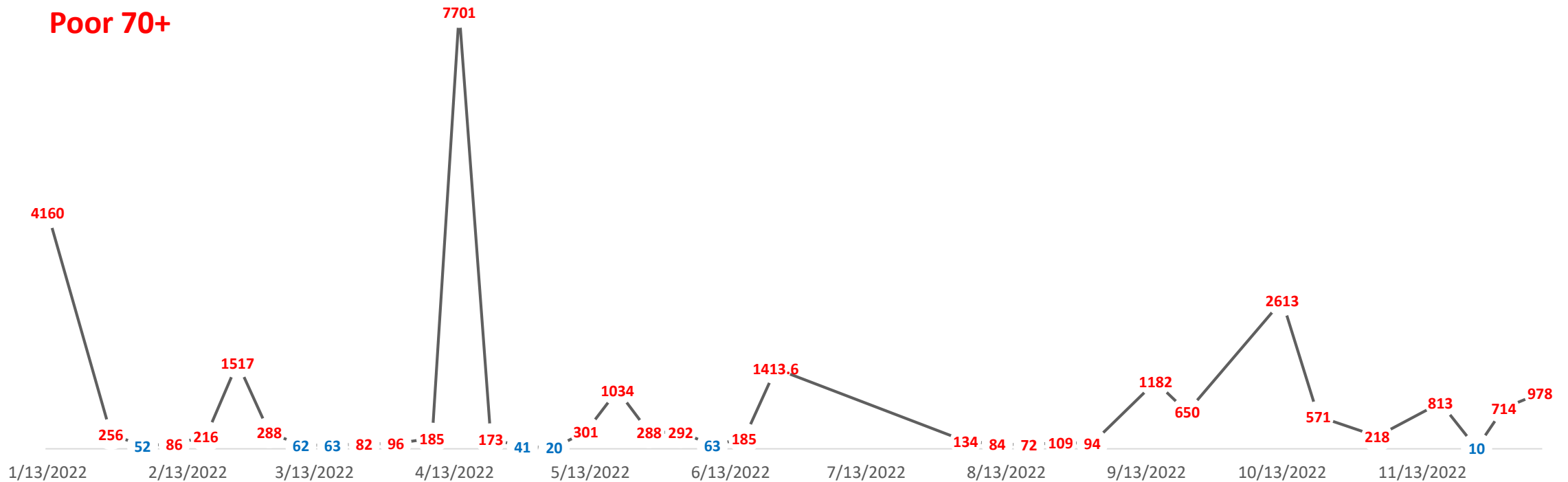
Good <35
Moderate 35-70
Poor 70+





BRYANT PARK 2022 RESULTS (CFU/100ML)

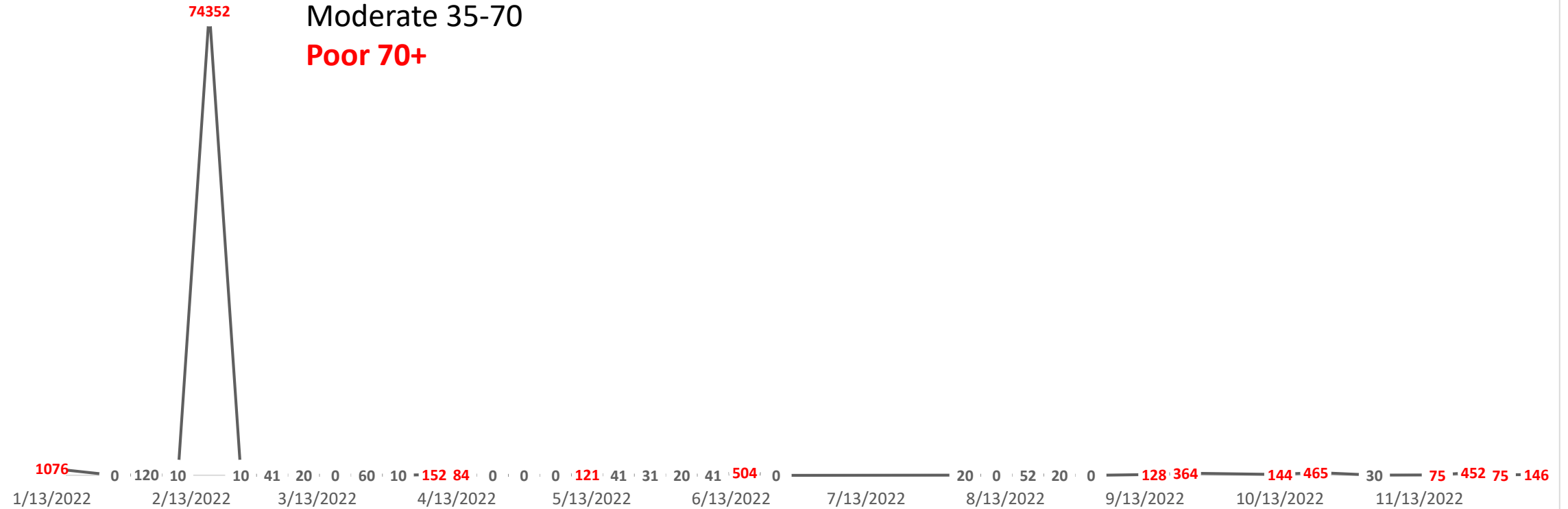
Good <35
Moderate 35-70
Poor 70+





JEWELL COVE 2022 RESULTS (CFU/100ML)

Good <35
Moderate 35-70
Poor 70+





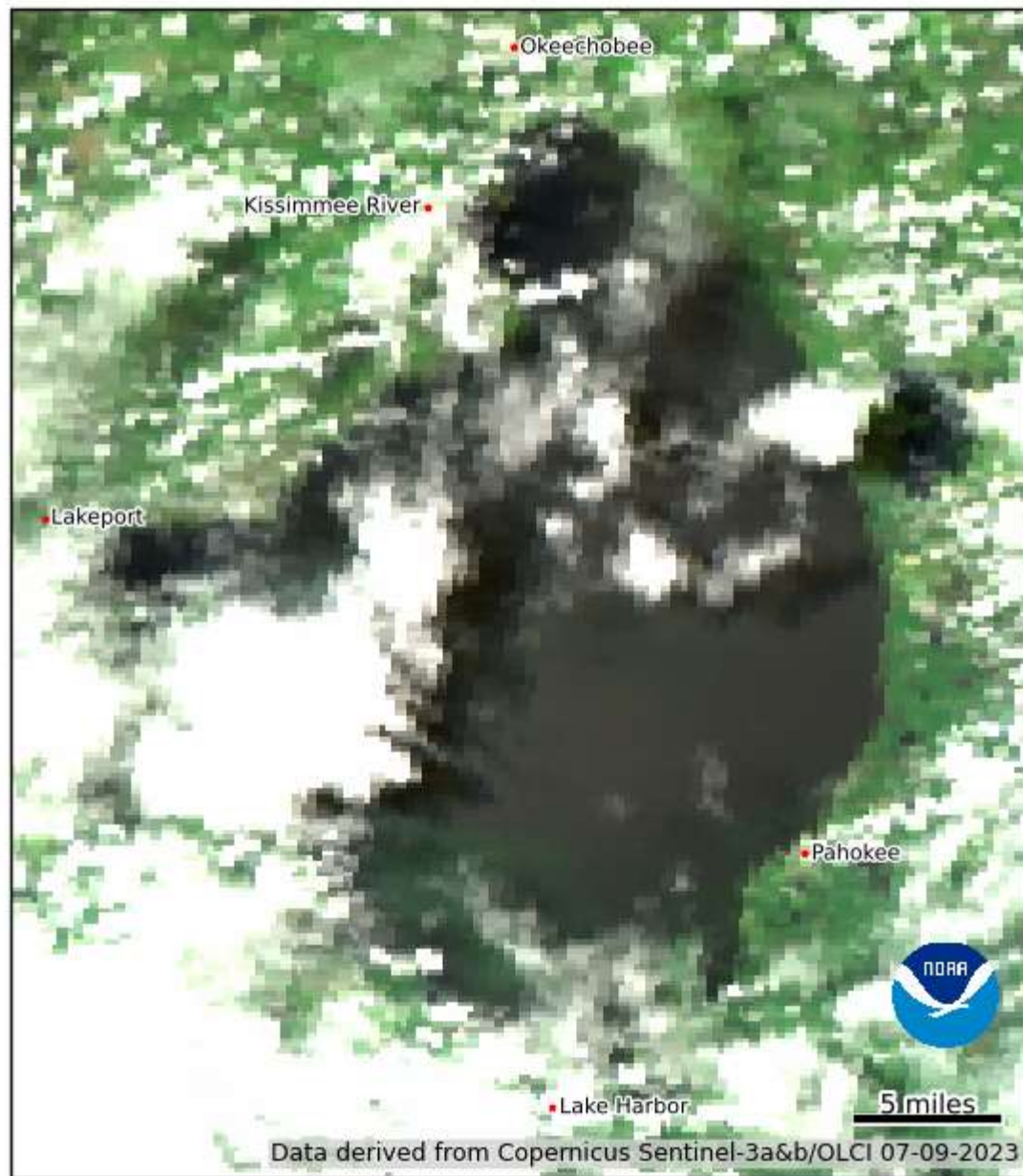
Cyanobacteria - June 2, 2023



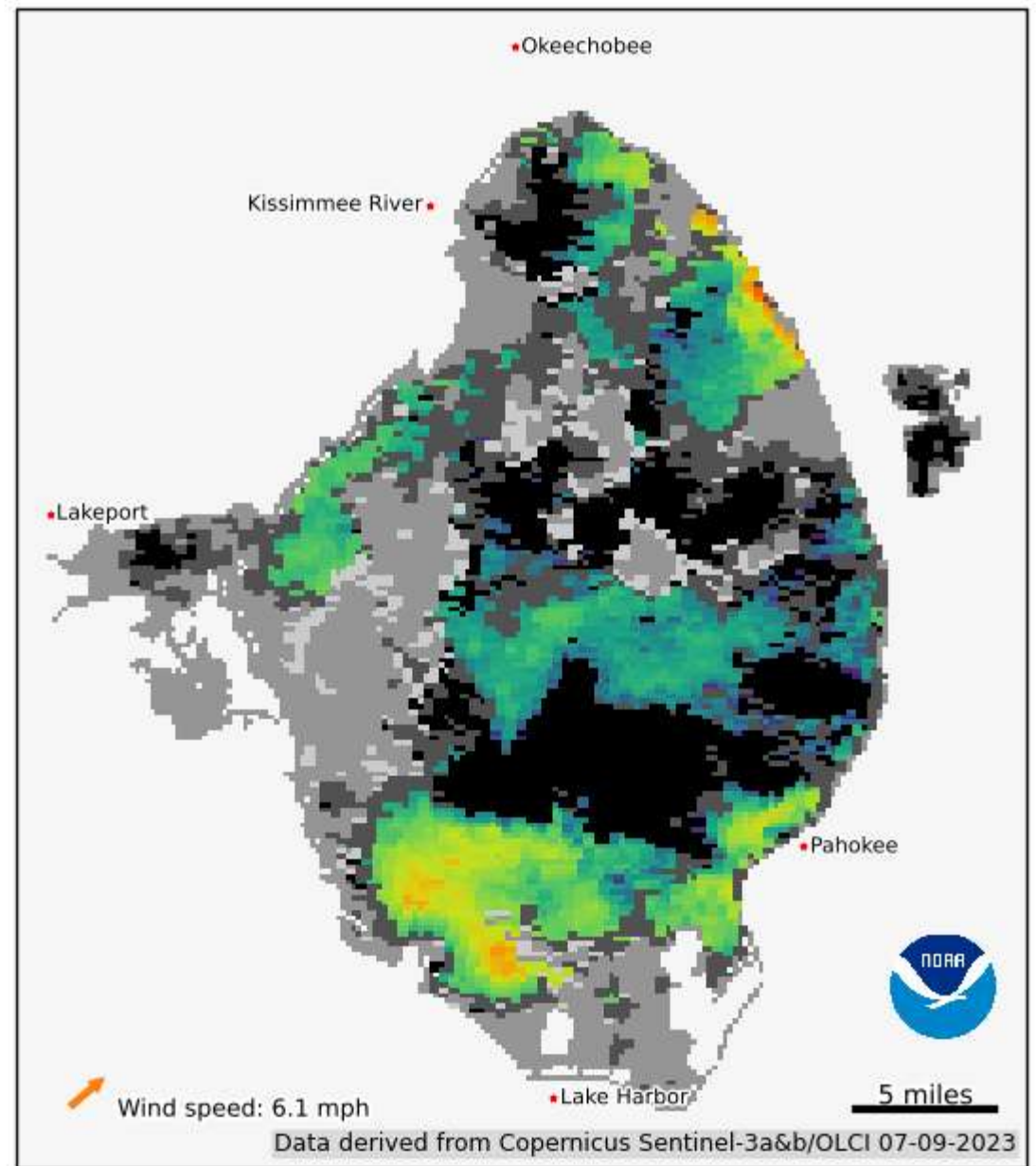


July 7, 2023





Composited Lake Okeechobee true color image derived from the OLCI sensor on Copernicus Sentinel-3a&b obtained from EUMETSAT.



Composited Cyanobacteria Index (Cicyano) for Lake Okeechobee. The algal bloom is present but cloud cover and winds above 9.0 mph prevent determining an area (previous area from Jul 07 was 300 square miles). Winds above 4.0 mph may begin mixing the bloom and clouds may obscure it, leading to an underestimate of the area. Moderate and low concentrations may not be obvious to the eye. Average wind for preceding 3 hours of satellite observation from South Florida Water Management District station LZ40.

Policy Change – Waters of the United States (WOTUS)

- Under the Clean Water Act
- Sackett vs. EPA
 - Petitioners Michael and Chantell Sackett purchased property near Priest Lake, Idaho, and began backfilling the lot with dirt to prepare for building a home. The Environmental Protection Agency informed the Sacketts that their property contained wetlands and that their backfilling violated the Clean Water Act, which prohibits discharging pollutants into “the waters of the United States.” 33 U. S. C. §1362(7). The EPA ordered the Sacketts to restore the site, threatening penalties of over \$40,000 per day. The EPA classified the wetlands on the Sacketts’ lot as “waters of the United States” because they were near a ditch that fed into a creek, which fed into Priest Lake, a navigable, intrastate lake. The Sacketts sued, alleging that their property was not “waters of the United States.”
 - “first, that the adjacent [body of water constitutes] . . . ‘water[s] of the United States’ (i.e., a relatively permanent body of water connected to traditional interstate navigable waters); and second, that the wetland has a continuous surface connection with that water, making it difficult to determine where the ‘water’ ends and the ‘wetland’ begins.”

Extreme Rainfall Events are Now 60% Greater



Collaborators



- [Change Factor Tutorial](#)
- [NOAA Atlas 14 GIS Files](#)
- [SFWMD Technical Memorandum](#)
- [USGS Data Release Portal](#)
- [USGS Final Report \(available Summer 2022\)](#)

Change Factor Search

Search by Area

Results

Features selected: 1

Area of Interest: Palm Beach County

Rainfall Duration: 1

Return Period: 200

Percentile 25th: 1

Percentile 50th: 1.24

Percentile 75th: 1.6

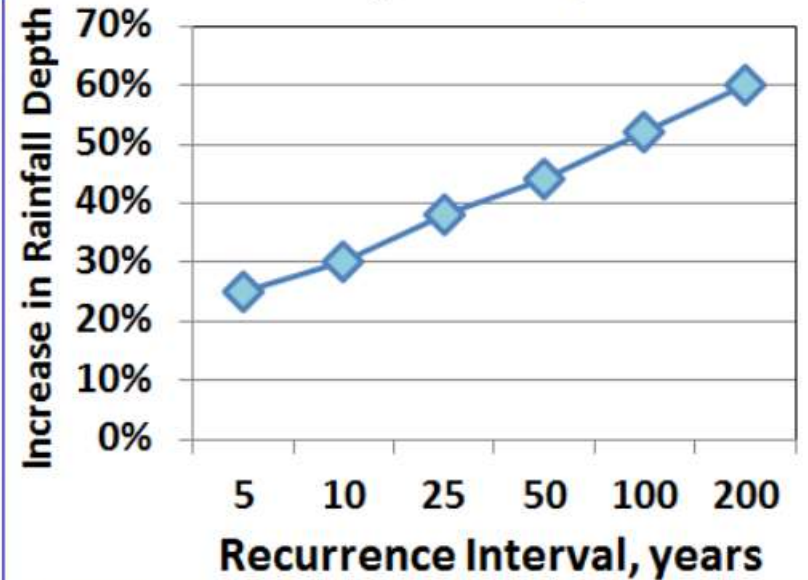
Planning Horizon: 2050-2089



Resilience Metrics Hub

Future Extreme Rainfall Change Factors for Flood Resiliency Planning in South Florida Web Application

Climate Change Effect Upon Rainfall



Statistical analyses conducted using modern data sets have revealed as much as a 50% increase in potential rainfall depth for a 100-year, 3-day storm event. It is clear that increased rainfall in Florida from climate change will exacerbate water quality problems in many Florida water bodies.

After two decades of requests for revised rainfall statistics, the agencies finally responded with “change factors.”



“The overall economic value of the Lake Worth Lagoon is \$5.37 billion, representing the combined one-time value plus the present value of ongoing economic benefits and spending derived from the Lake Worth Lagoon over the next 25 years.”

Table 8. Summary of the Economic Value of Lake Worth Lagoon

Value Type	Direct Impact	Indirect/Induced	Total Economic Valuation
<u>One-Time Values</u>			
Lake Worth Initiative/Palm Beach County Restoration Spending	\$88,000,000	N/A	\$88,000,000
Wealth Effect Spending from Residential Property Value Increase	\$10,776,298	N/A	\$10,776,298
One-Time Cash Spending			\$98,776,298

<u>Market and Use Values</u>			
Residential Trip Cost Method	\$127,833,796	N/A	\$127,833,796
Tourist Trip Cost Method	\$42,356,273	\$18,557,541	\$60,913,814
Commercial Business Activity	\$401,073,284	\$224,041,735	\$625,115,019
Annual Recurring Market and Use Value	\$571,263,353	\$242,599,276	\$813,862,629
PV 25 Year Annual Spending			\$4,026,656,179

<u>Non-Market Values</u>			
Resource Value	\$52,155,156	N/A	\$52,155,156
Residential Property Value Increase	\$449,012,419	N/A	\$449,012,419
Non-market Willingness to Pay (1-time)	\$745,409,828	N/A	\$745,409,828
Non-Market Value	\$1,246,577,403	N/A	\$1,246,577,403

TOTAL One-Time, Market Use, and Non-Market Value			\$5,372,009,880

Source: PFM

The staggering, often-overlooked financial costs to our health from fossil-fuel generated air pollution and climate change **surpass \$820 billion in health costs each year—a burden falling heaviest on vulnerable communities but also shared in part by everyone in the United States.**

<https://www.nrdc.org/sites/default/files/costs-inaction-burden-health-report.pdf>

Jeff Thaler, Esq.

What Can You Do?

- Be informed and discuss
- What have you done so far?
 - Policies/ordinances (i.e. pollution, cigarettes, native gardening)
 - Apply for grants to expand current water processes (i.e. reverse osmosis plant)
 - Signage (English & Spanish)
 - Work with other municipalities (i.e. derelict boats)

