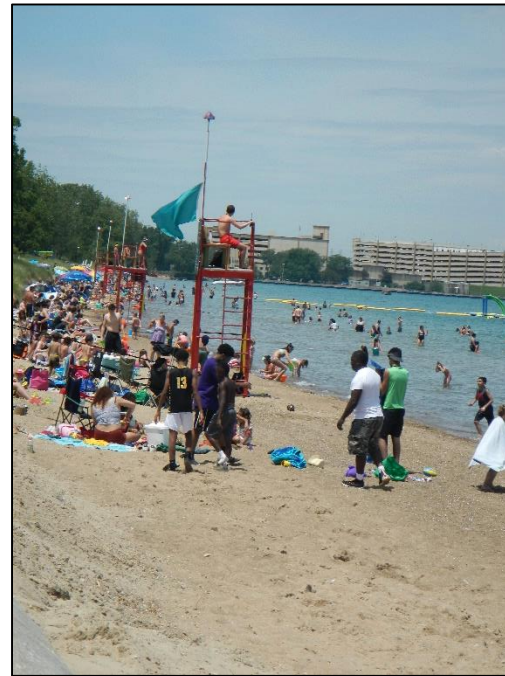# Grand Calumet River Area of Concern 2019 Beach Season Review

Citizens Advisory for the Remediation of the Environment (CARE)

Workgroup Teams Meeting – May 28, 2020

(Originally scheduled for February 27, 2020)

Michelle Caldwell, IDEM

2019 Season Recap

- Monitored 23 participating beaches along Indiana's Lake Michigan shoreline for *E. coli* bacteria

- Collected 2,930 samples during designated beach season (Memorial Day weekend to Labor Day weekend)

- Posted 152 Advisories

- Posted 7 Closures

- Total of 2,405 Beach Days
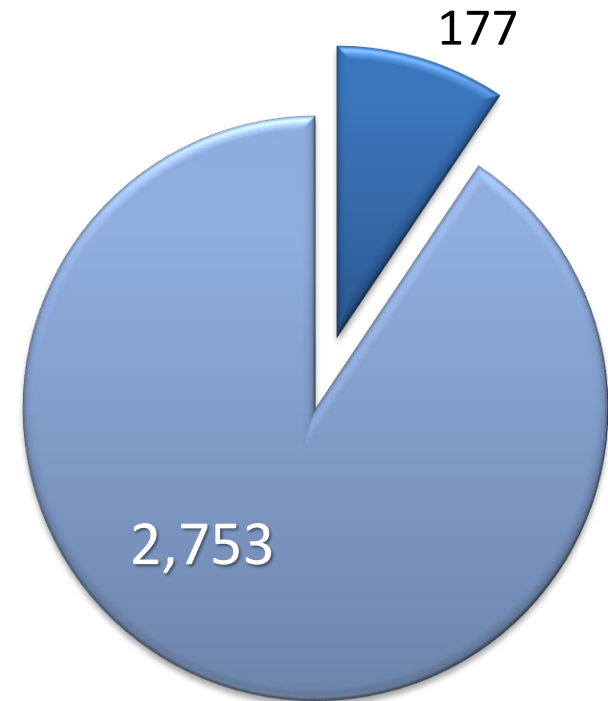
- Total of 160 Days under an Action

Beaches were open 93% of the 2019 Beach Season!

2019 Data Summary

- Swim season ran approximately from Memorial Day weekend through Labor Day weekend for a total of 2,405 days.

- A total of 2,930 samples from 23 beaches were collected during the season when the beaches were open to the public. (195 = samples/week)

- 177 of those samples exceeded the single sample maximum of 235 cfu/100mL.

6% Exceedance Rate

177

2,753

Data Comparison Over the Years for All Program Beaches

	2019	2018	2017	2016	2015	2014	2013	2012
Total Number of Beach Days	2405	2413	2495	2417	2265	2470	2376	2611
Total Number of Days under an Action	160	187	133	198	174	335	276	333
Total % Days Beaches were Open	**93%**	**92%**	**95%**	**92%**	81%	86%	88%	87%
Total Number of Samples Collected *	2930	2959	3060	2986	3015	2880	2777	2775
Total Number of Sample Exceedances	177	184	124	213	285	353	288	288
% Sample Exceedances Rate	**6%**	**6%**	**4%**	**7%**	**9%**	12%	**10%**	**10%**

* Exceedance rates based on number of samples collected Memorial Day weekend through Labor Day weekend
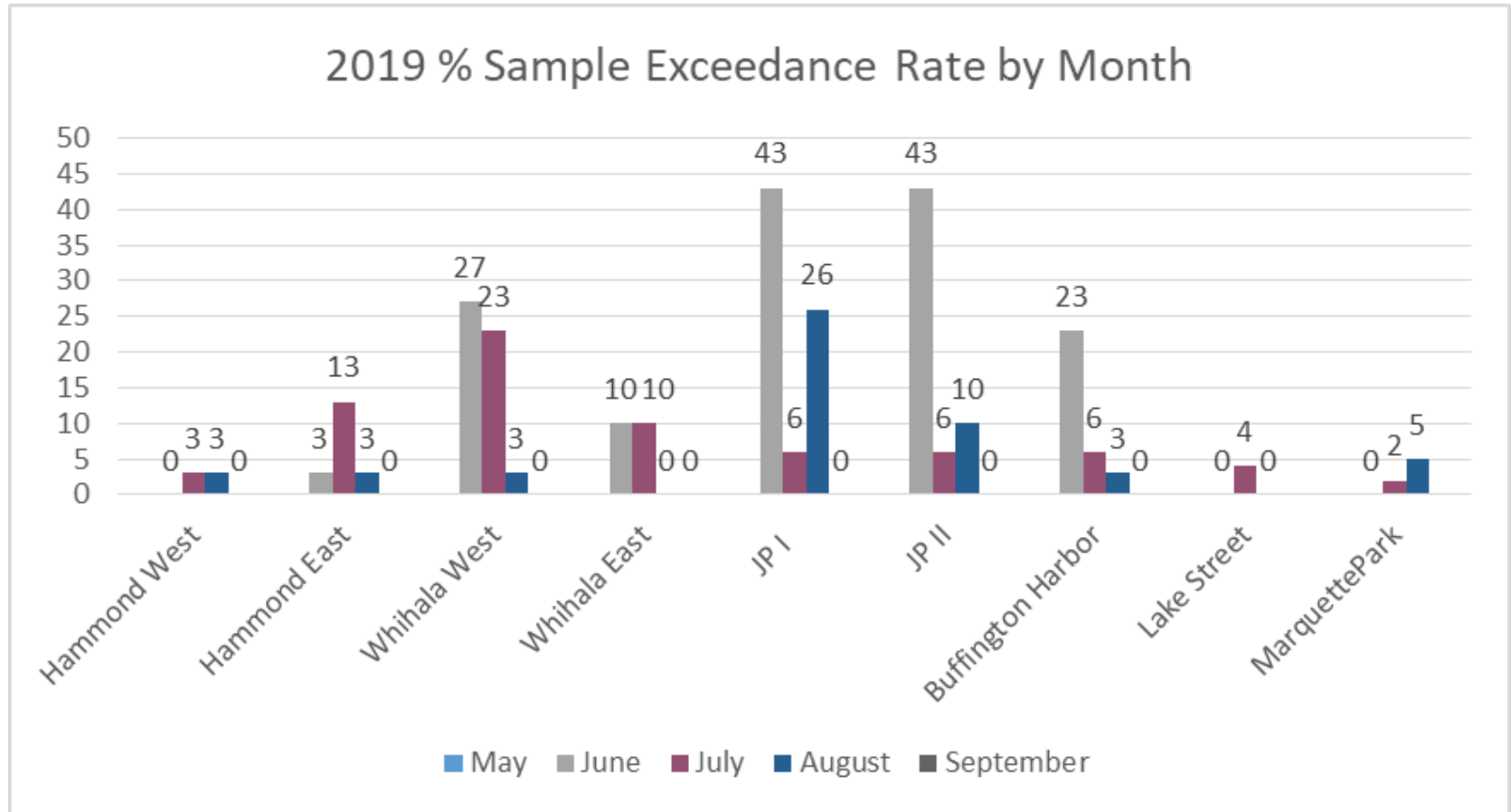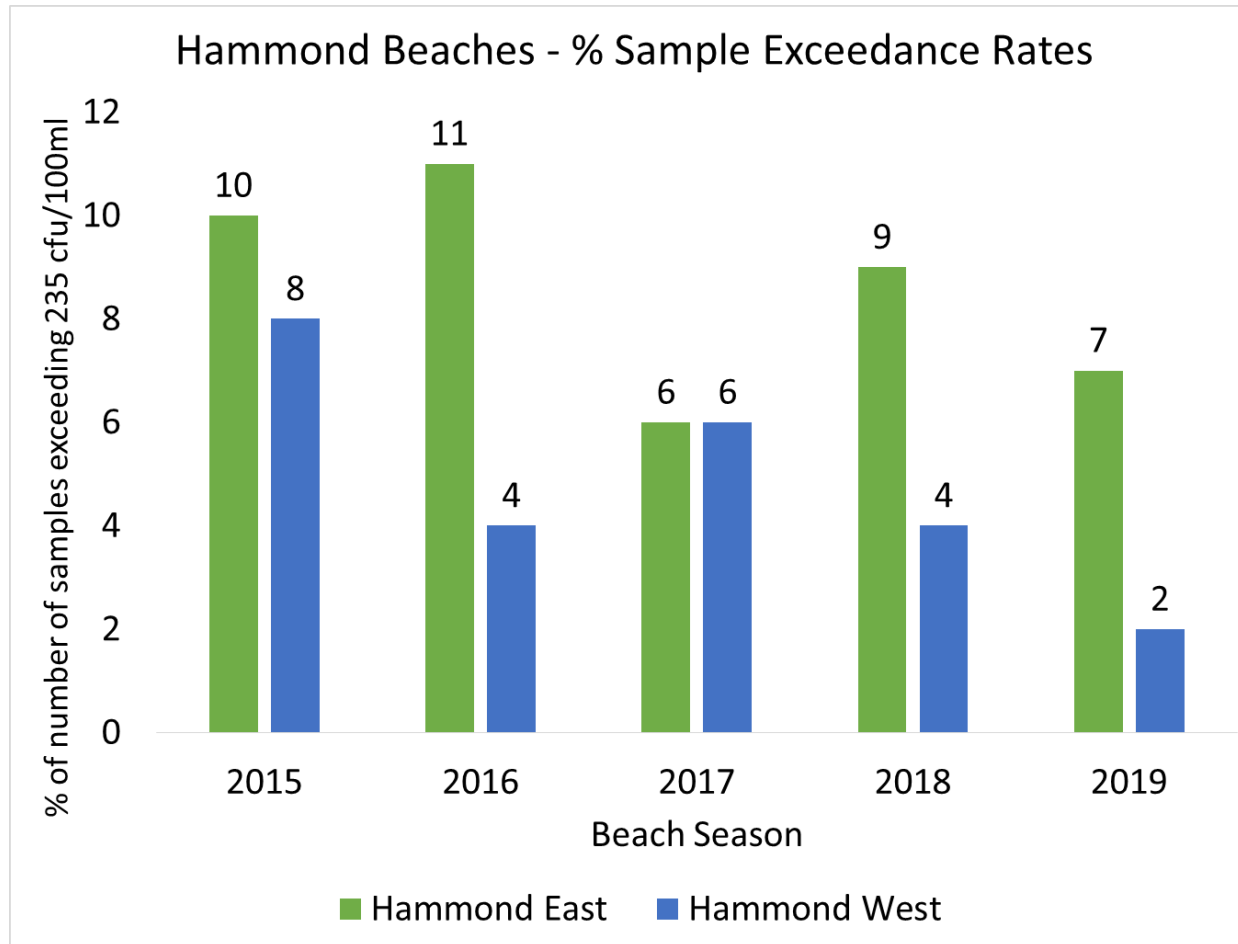
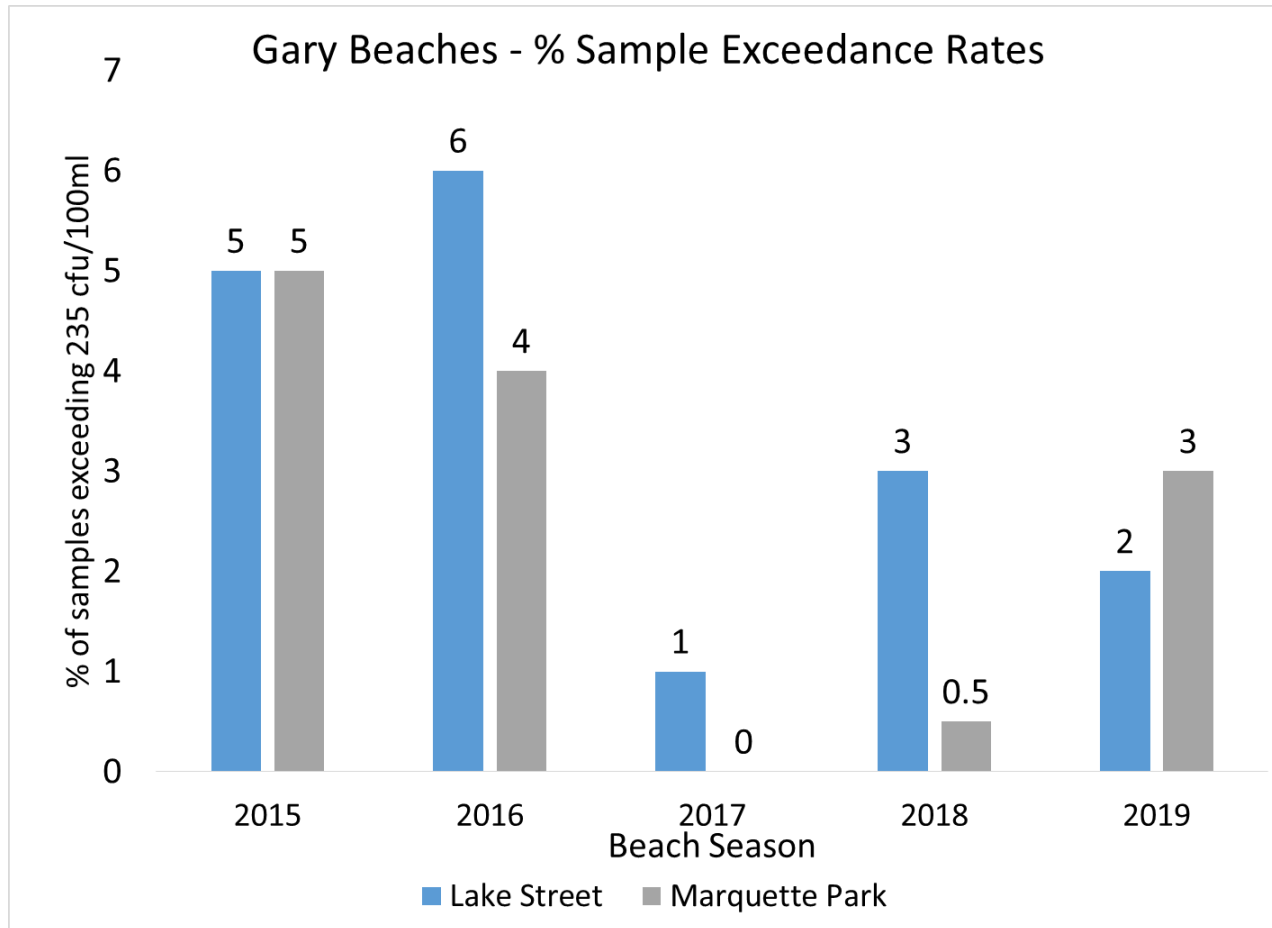# Beaches in the Grand Calumet River AOC

AOC Beaches
Monthly Exceedance Rates in 2019

Hammond Beaches Over Past 5 Years
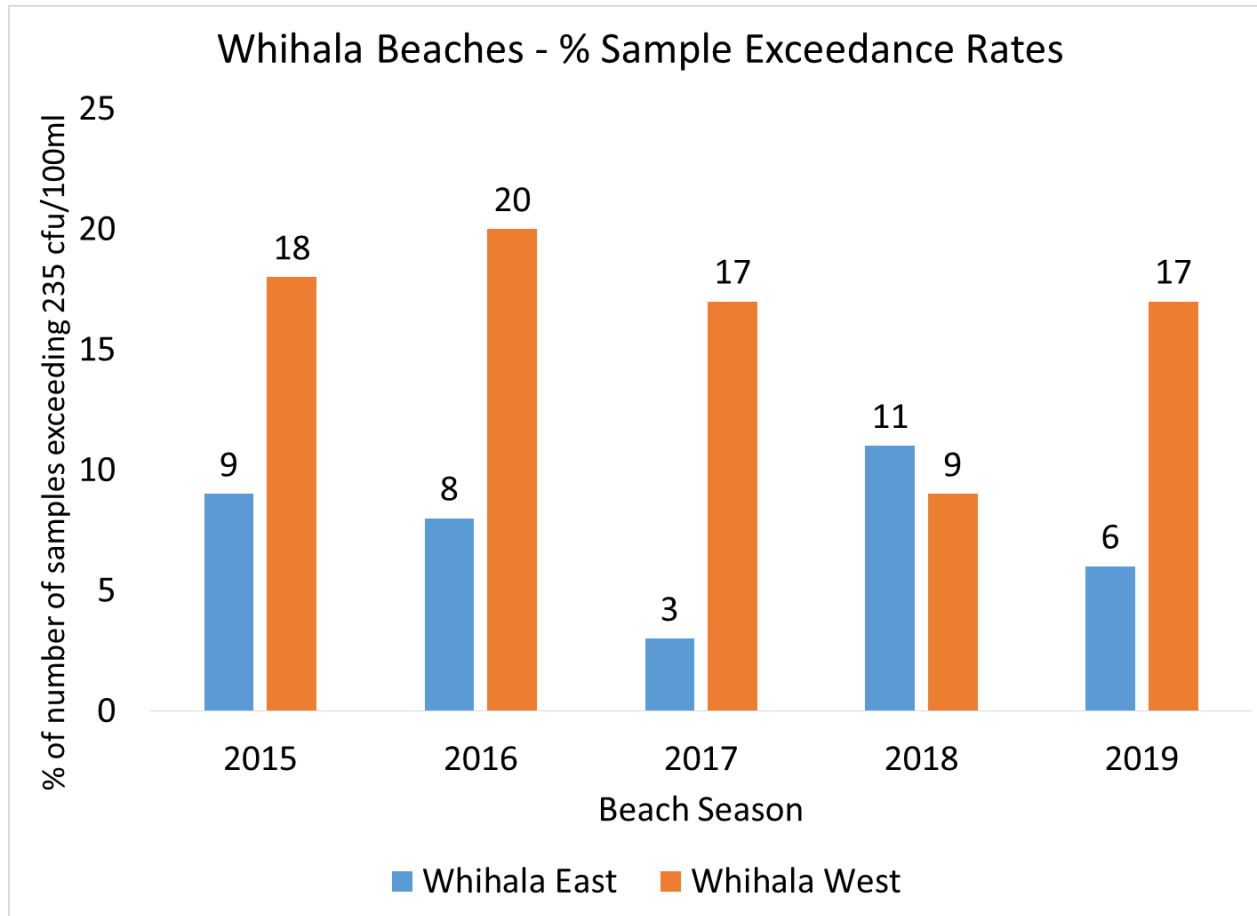
Gary Beaches Over Past 5 Years

2019 AOC Beach Program - Whihala

- Eagle Eye structural deterrents at Whihala East beach and West end pier for second season.

- No dog program at Whihala West.
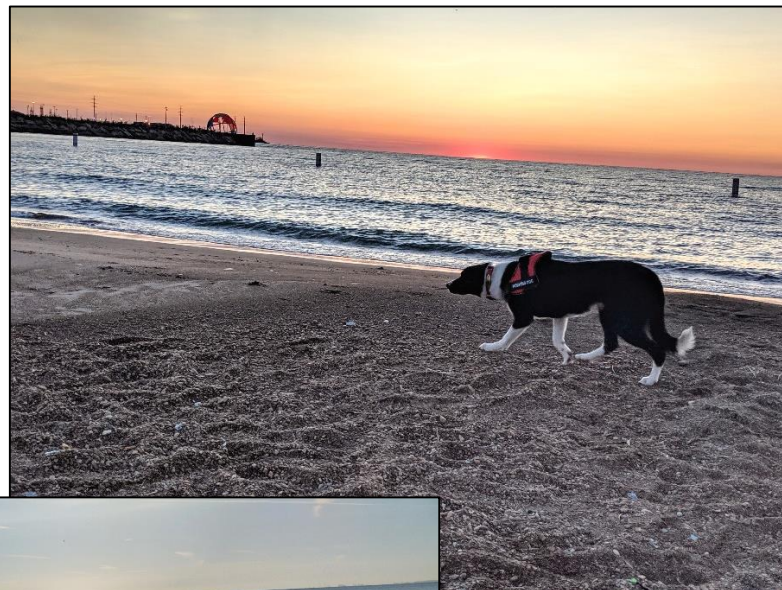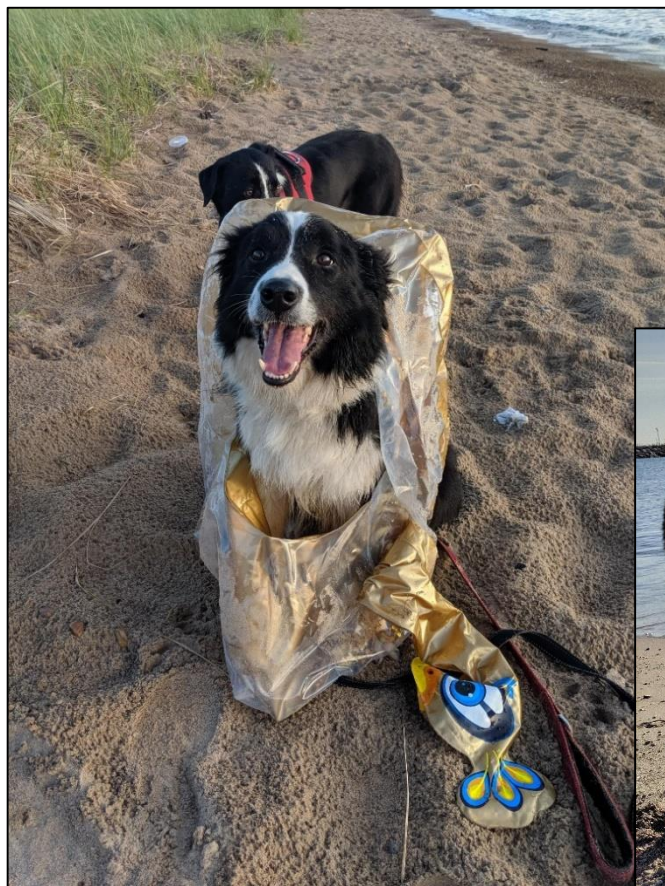
Whiting Beaches Over Past 5 Years

Whihala Beaches - % Sample Exceedance Rates

- Full dog program implemented at Whihala West in 2018
- Eagle Eyes installed at Whihala East in 2018 and 2019

2019 AOC Beach Program – East Chicago

- Modified dog program at East Chicago beaches

Cowboy & Stitch

2019 AOC Beach Program – East Chicago

- Modified dog program at East Chicago beaches

2019 Season

Summary of Work Done

- 3-month program: June 5th to August 31st

  - From June 5th until July 16th

    - 7 days per week from sunrise until 9:00 or 9:30am (4 hours)

  - From July 17th until August 31st

    - 4 days per week from sunrise until 6:30 or 7:00am (1 hour)

- 331 gull counts were performed during the entire 2019 season

- 8,085 gulls were counted and chased during the season

East Chicago Beaches Over Past 5 Years
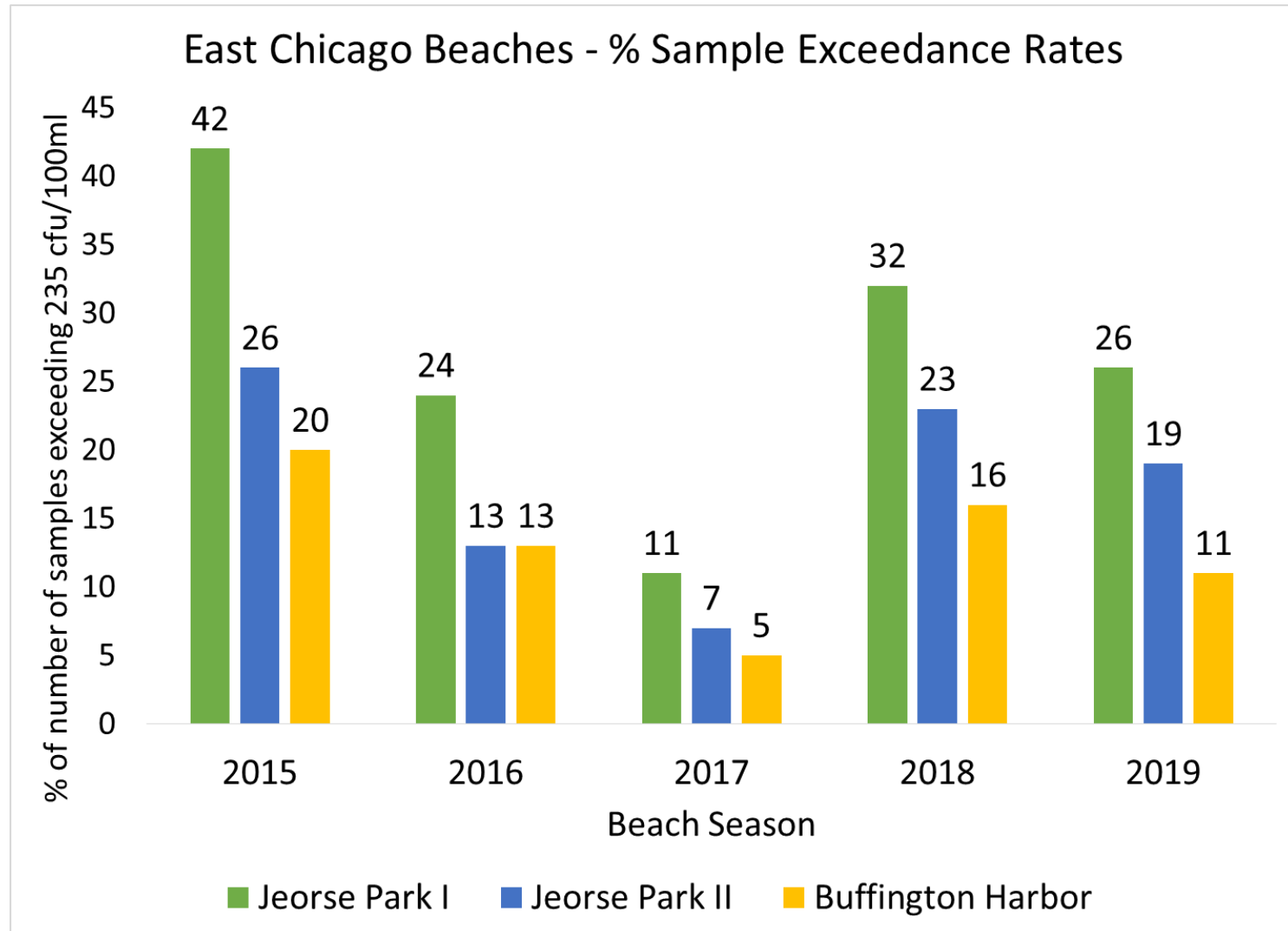
Initial Gull Count Comparison – 2016-2019

- Full dog program was in effect in 2016, 2017, and 2018.

- Modified dog program implemented in 2019.

- Initial gull numbers decline as the beach season goes on.

Initial (A.M.) gull numbers by month at East Chicago beaches
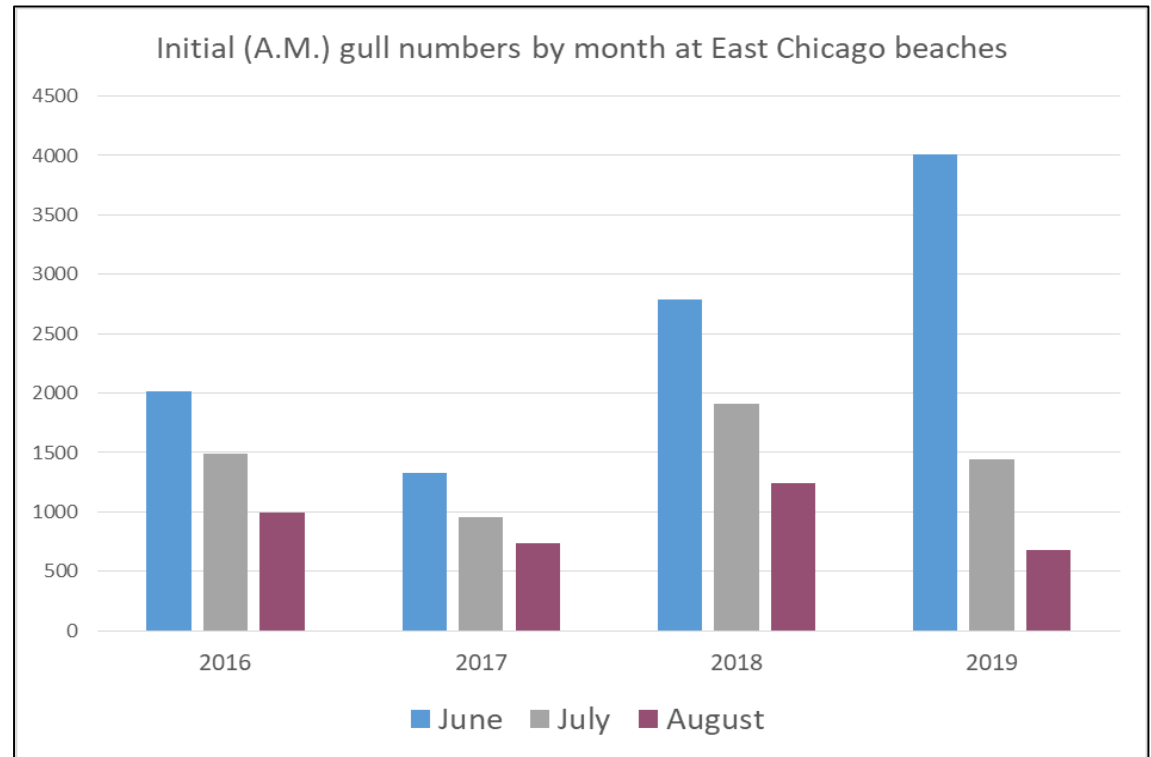
Rainfall, Gulls, and Sample Exceedance Data at East Chicago Beaches

2019 East Chicago Beaches	June	July	August
Rainfall in Inches	7.25	5.80	5.20
Gulls*	5,262	1,972	851
Number of Sample Exceedances	33	6	12

2018 East Chicago Beaches	June	July	August
Rainfall in Inches	4.37	3.56	4.05
Gulls	8,204	4,890	1,859
Number of Sample Exceedances	31	13	13

2017 East Chicago Beaches	June	July	August
Rainfall in Inches	4.75	6.35	2.95
Gulls	5,941	2,000	1,373
Number of Sample Exceedances	10	7	3

Tracking Number of Exceedances by Month Using the Dog Program

Number of Sample Exceedances per Month of Dog Program at East Chicago Beaches
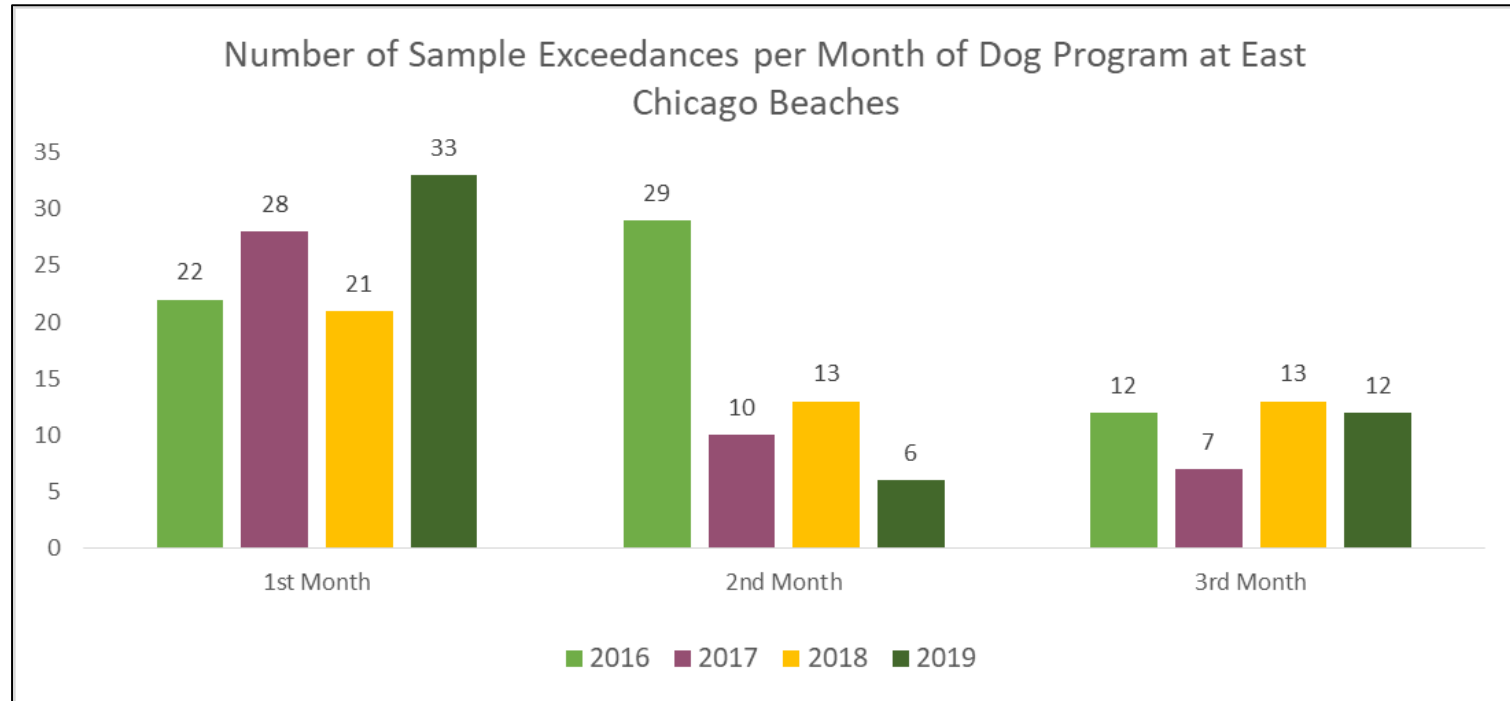
Consideration: This graph shows the similarity of sample exceedances for each month the dog program was in place regardless of start date.

Conclusion: The number of samples that exceed decrease significantly after the first month of having the dogs patrol the beaches. Therefore, implementing a dog program at least 4 weeks prior to the beach season should result in lower sample exceedance rates.

Beneficial Use Impairment (BUI) #10: Beach Closings

This BUI can be considered for removal when:

Each individual beach along the Lake Michigan shoreline in the AOC has a percent exceedance rate of no higher than 15% for the *E. coli* samples taken from Memorial Day to Labor Day for three years out of a five-year period **OR** …

This BUI can be considered for removal when:

Percent exceedance rates at AOC beaches will be compared to percent exceedance rates for comparable Lake Michigan beaches located outside of the AOC to determine if there is a significant difference for three years out of a five-year period, and if none occurs, then the Beach Closure BUI may be suggested for removal. A significant difference is defined as no greater than a one percent variance between an individual AOC beach and an individual non-AOC beach in each of the three years relied upon for suggesting BUI removal.

Note: *Contamination that leads to exceedances within the AOC may also be attributable to sources outside the AOC.*

BUI #10 – Exceedance Rates for Grand Calumet River AOC Beaches

AOC Beach Exceedance % Rates by Year*	2019	2018	2017	2016	2015	2014	2013	2012
Hammond West	2	4	6	4	8	7	14	13
Hammond East	7	9	6	11	10	16	25	26
Whihala West	16	7	17	20	18	12	9	15
Whihala East	6	10	3	7	8	8	9	9
Jeorse Park I	25	31	11	24	42	54	47	70
Jeorse Park II	19	22	7	13	26	40	38	52
Buffington Harbor	10	16	5	13	20	29	28	33
Lake Street**	2	3	1	4	5	3	4	5
Marquette Park**	3	< 1	0	2	5	3	4	4

*Exceedance rates based on number of samples collected from Memorial Day weekend through Labor Day.

** Lake Street and Marquette Park started monitoring on June 1, 2018.

BUI #10 - Exceedance Rates for Reference Site Beaches

Non-AOC Beach Exceedance Rates by Year*	2019	2018	2017	2016	2015	2014	2013	2012
Indiana Dunes State Park West	13	12	8	13	12	14	7	15
Indiana Dunes State Park East	7	14	8	9	17	12	7	11
Ogden Dunes West	6	2	1	5	6	11	5	3
Ogden Dunes East	4	2	1	3	5	14	5	4
Washington Park	5	5	5	5	8	15	11	11

Exceedance rates based on number of samples collected Memorial Day weekend through Labor Day weekend

BUI #10 Status Tracking

Beaches	2016	2017	2018	2019
Hammond West	★	★	★	★
Hammond East	★	★	★	★
Whihala West	20	17		17
Whihala East	★	★	★	★
Jeorse Park I	24		32	26
Jeorse Park II			23	19
Buffington Harbor	★	★	16	★
Lake Street	★	★	★	★
Marquette Park	★	★	★	★

Key:

MEETS REMOVAL CRITERIA	★
DOES NOT MEET CRITERIA	

Projected Work For 2020

- Work with AOC communities to explore/implement new best management practices (BMPs), including:
  - Improved hand-feeding and pet waste ordinances
  - Improved beach grooming
  - A long-term, scaled-down bird deterrent program?

- Continue work with Indiana Lake Michigan Coastal Program on nonpoint pollution reduction, including through addressing failing septic systems

Projected Work For 2020 (cont.)

- Assist USDA with implementing a potential gull population control project

- Continue education and outreach activities including:
  - Conducting handfeeding education and outreach to the beach-going public
  - Developing a video for beach managers and community leaders promoting effective beach BMPs

- Evaluate BMPs utilized during the 2016-2019 beach seasons

- Identify management actions needed to reduce the number of sample exceedances at AOC beaches

Thank you!

Michelle Caldwell

*Lake Michigan Beach Monitoring and Notification Program
and Indiana Clean Marina Program Coordinator*

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