

Cowell's Water Quality Working Group: Community Updates March 2017



What is the problem?

- Years of elevated bacteria concentrations, exceeding state standards
- Six years at the top of Heal The Bay's "Beach Bummers" list
- "Dirtiest" means high counts of E.coli, Enterococcus, and Total Coliforms
- Chronic issue despite years of effort/investment

Cowell Beach named No. 1 for dirtiest water on West Coast



Quick Truths

- Water quality contamination is due to high bacteria counts (E.coli and Enterococcus)
- Trash and needles are a problem, but not THE problem
- The waste water treatment plant does NOT discharge into Cowells or Neary Lagoon and is not the source of high bacteria counts

CWVG Goals and Objectives

CWVG seeks to eliminate all human-derived sources of bacteria capable of causing human illness and reduce naturally occurring sources of bacteria to the maximum extent practicable.

1. Reduce bacteria counts at Cowell Beach through policy and stewardship actions
2. Improve scientific understanding of Cowell's Beach issue
3. Increase public understanding of Cowell's Beach issue

Cowell Beach Water Quality Working Group (CWG)

- Created by and funded through Santa Cruz City Council
- Facilitated by Save The Waves Coalition
- Made up of representatives of Surfrider Foundation Santa Cruz, Sierra Club, City of Santa Cruz, and County of Santa Cruz.
- Monthly meetings

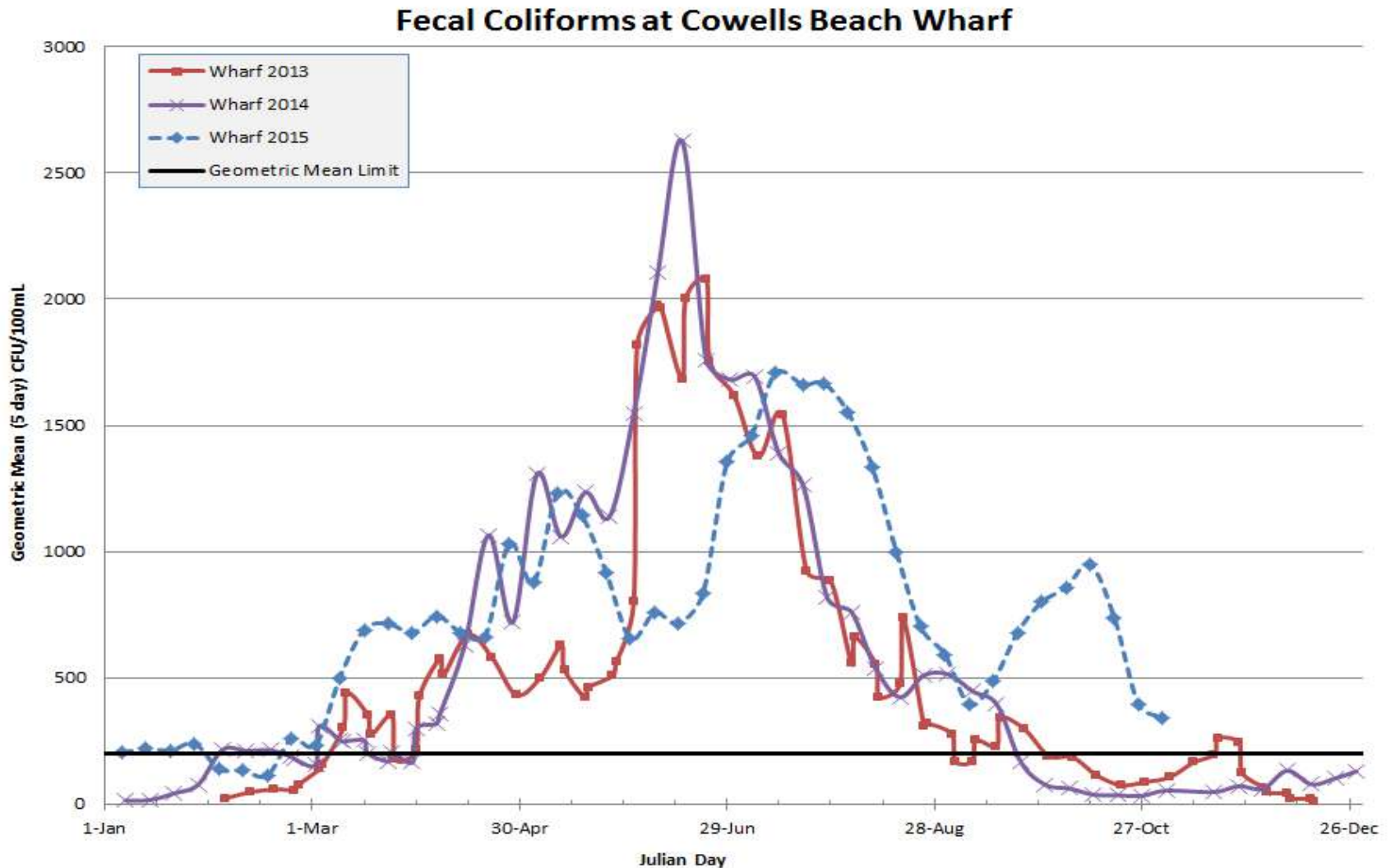
Brief History of the Issue/Work

- High bacteria counts have led to “perpetual” spot on Heal the Bay list.
- 2012 - Study conducted by Stanford’s Dr. Ali Boehm pointed to human and bird derived bacteria sources.
- 2013 - City repairs infrastructure
 - Repair of leaking lateral,
 - Sealed Neary Lagoon outfall
 - Cap on storm drains
- April 2014 – World Surfing Reserve Summit identifies Cowells as top priority in Stewardship plan
- Sept 2014 – City Council officially created Cowell’s Working Group
- Nov 2015 – Recommendations to City after 1 year of study
- June 2016 - Began installing recommended bird screening
- August 2016 – Completed recommended bird screening
- October 2016 – CWG observes significant water quality improvements from previous summer.
- November 2016 – City of Santa Cruz approves continued funding and support for CWG

CWG Findings



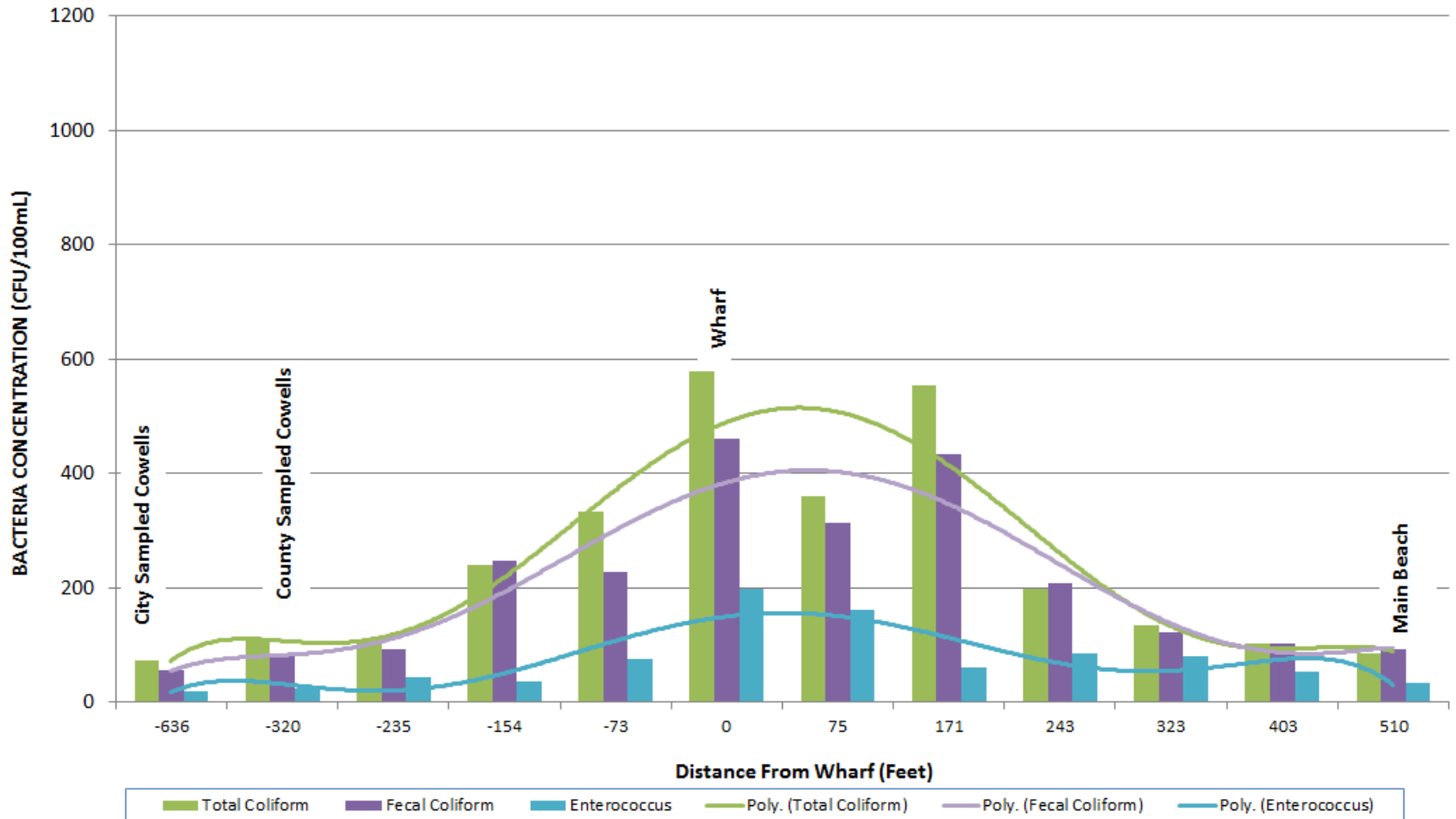
Seasonality of the Issue



Geographic Distribution of the issue

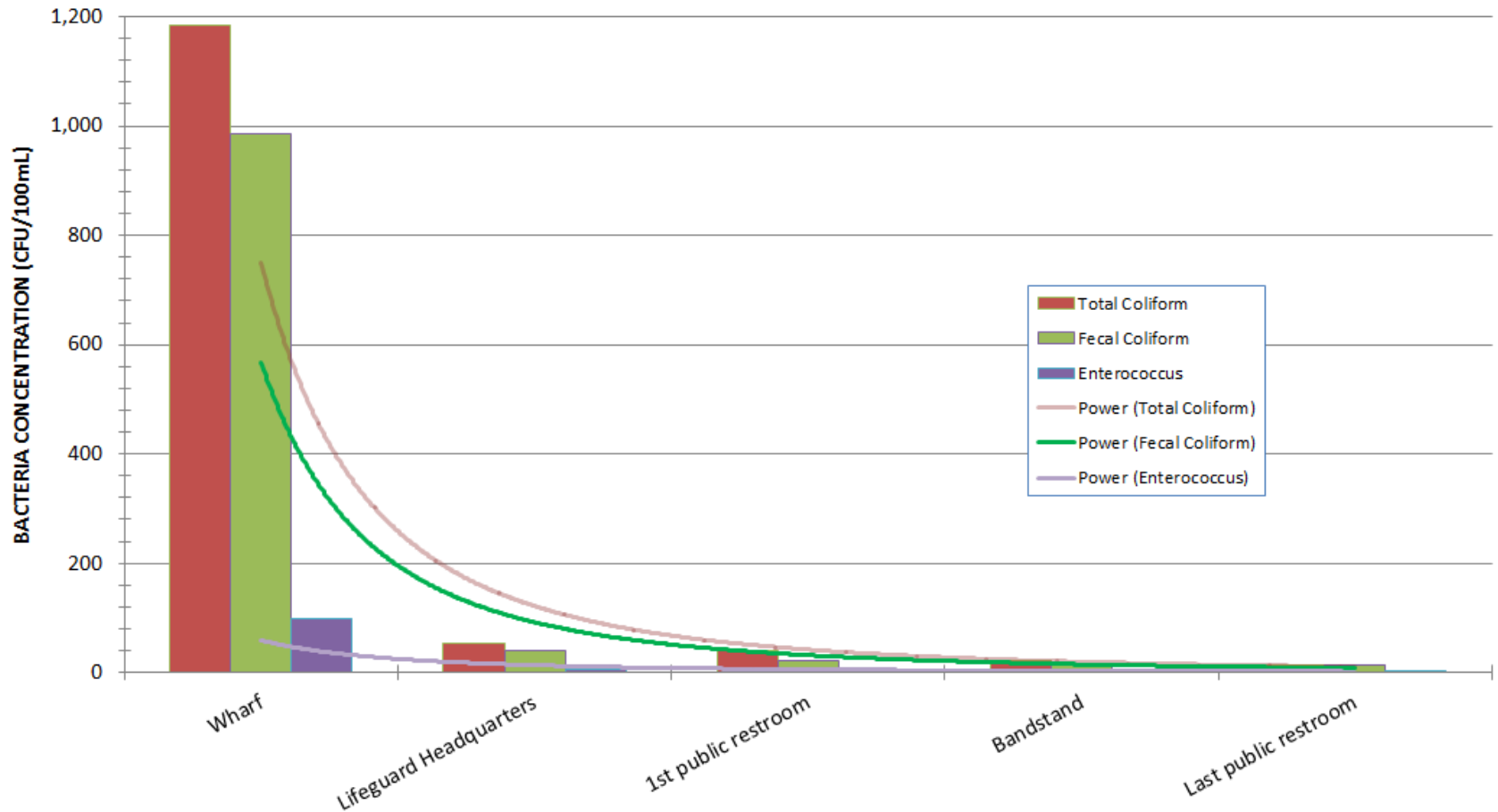
Bacteria Profile at Cowell and Main Beach

(Geometric Mean, 5 samples in 30 days, Aug-Sept, 2015)



Geographic Distribution of the issue

Bacteria Profile along the Santa Cruz Wharf
(Geometric Mean, 5 samples in 30 days, Sept-Oct.2015)



In Summary

1. Cowell Beach bacteria are likely their highest under the wharf, and they tend to get lower as one travels along the beach away from the wharf in either direction (East or West);
2. Cowell Beach bacteria along the wharf are seemingly lower after the first couple of hundred feet where the birds do not roost and nest; and
3. There were no sewage-associated bacteria detected in any of the 25 samples taken along the wharf, as indicated by caffeine measurements taken during the study to establish the distribution of bacteria along the wharf.
4. Paradoxical to most other coastal communities, Cowell Beach water quality is predictably worse during the dry season (May – October)

CWG Recommendations



CWG Recommendations / Council Actions

Council Request for the following actions:

1. Put in screening, other modifications to reduce pigeon/gull roosting under the wharf near the beach
2. Establish Third Party Science Oversight Committee of outside experts to review testing methodologies and rdata
3. Fund the Microbial Source Tracking Study (MST), including multiple source DNA testing
4. Support an independent Cowell's Working Group, through funding, data sharing and staff participation

Work Progress

- Birds excluded from 25 bents (250 ft of wharf)
- Largely successful in eliminating roosting
- Trash management efforts by Seaside Company (can lids, main beach) also helpful



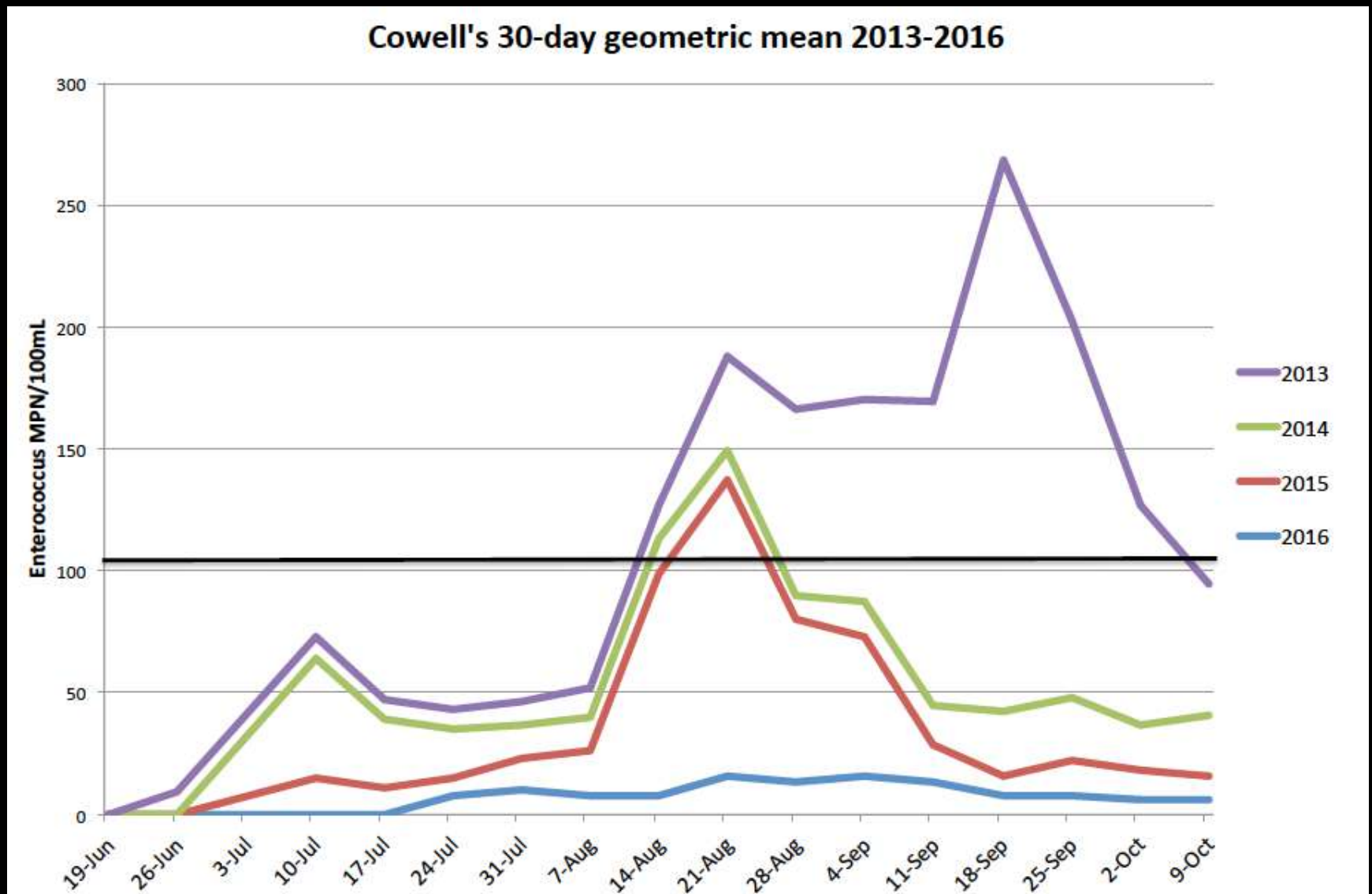
Improved Public Outreach

- 3 public meetings
- 8 local news articles
- 13 social media posts, with cover 10,000 likes
- 15 local events attended/tabled
- 5 targeted stakeholder meetings

~50% reduction in samples exceeding state limits

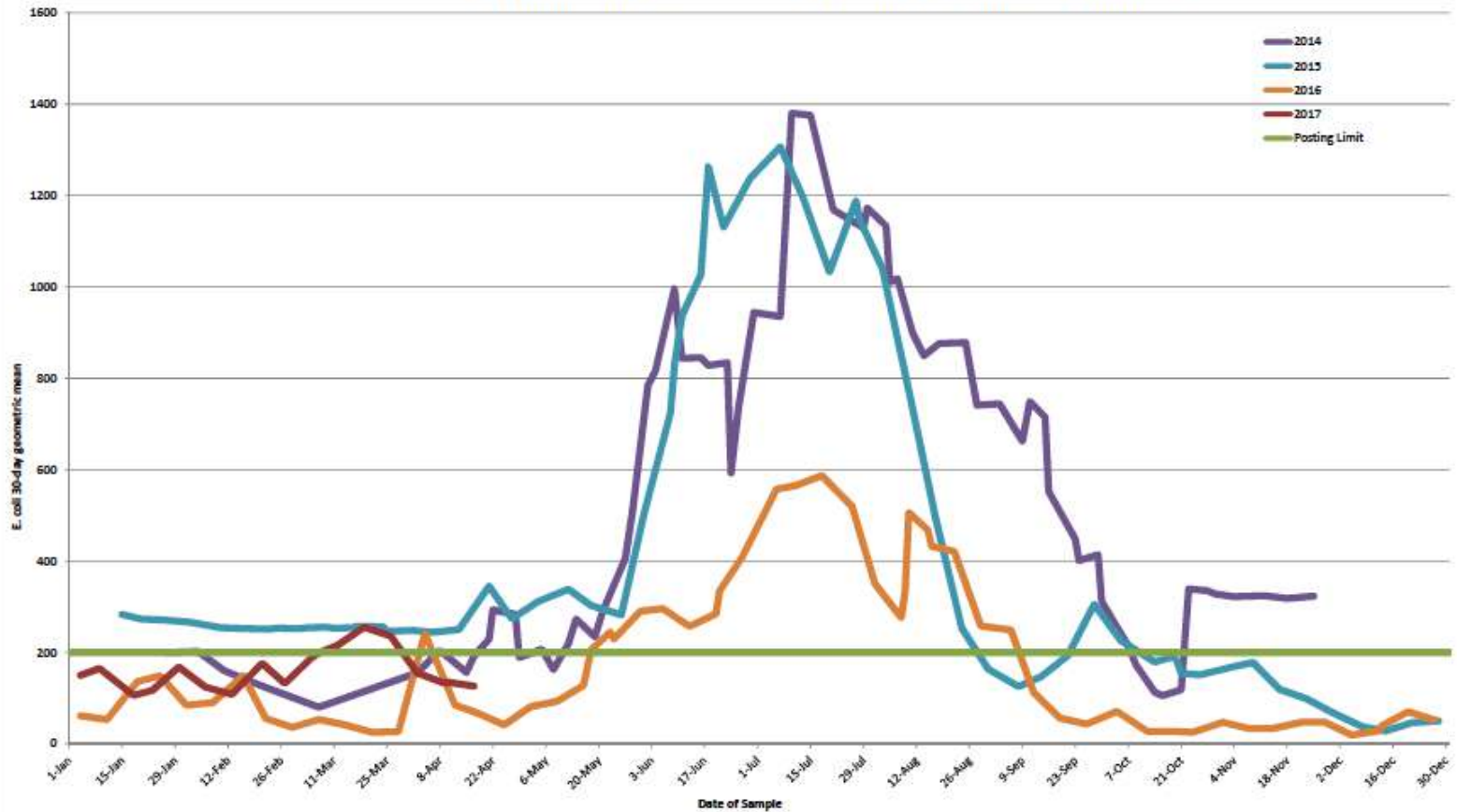
	Year	Enterococcus Exceedence	E.coli Exceedence
Cowell West of Wharf	2013	24%	54%
	2014	33%	81%
	2015	6%	59%
	2016	6%	22%
		20%	57%
Cowell	2013	8%	13%
	2014	40%	56%
	2015	0%	6%
	2016	6%	6%

67% drop in enterococcus



2014 – 2017 E. Coli Reductions

West of Wharf (Site #488) - E. coli
Data provided by Santa Cruz County Department of Environmental Health



Accomplishments

- Created new monitoring location in surf line-up
- Implemented new testing, data sharing between agencies, and conclusions
- Isolated the geographic scope and seasonality of the high bacteria concentrations
- Installed 250 linear ft of bird exclusion barriers under wharf
- Report a ~50% reduction in high bacteria postings from 2015
- Very little human DNA found in the last 2 years
- % of E.Coli samples exceeding standards dropped from 59% to 22%
- Increased public outreach and communication
- Increased community and financial support

CWGW Next Steps



Next Steps

1. Activate Third-Party Science Advisory Committee
2. Maintain bird screening and continue monitoring
3. Conduct Microbial Source Tracking Study (MST) for multiple lines of evidence, including multiple source DNA testing
4. Create and maintain updates on Clean Cowells website to share basic information, data and updates
5. Continue press / media updates
6. Maintain adequate signage in the area

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