

Florida Department of Environmental Protection



Bayou Chico Basin Management Action Plan 2014 Annual Report Overview

December 11, 2014

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Report Overview

- Third annual progress report for the Bayou Chico Basin Management Action Plan (BMAP).
- The report period is from November 1, 2013 through October 31, 2014.
- The report includes:
 - Summary on the activities during the reporting period by stakeholder.
 - Water quality monitoring during the reporting period, and data patterns.
 - Summary of upcoming activities.

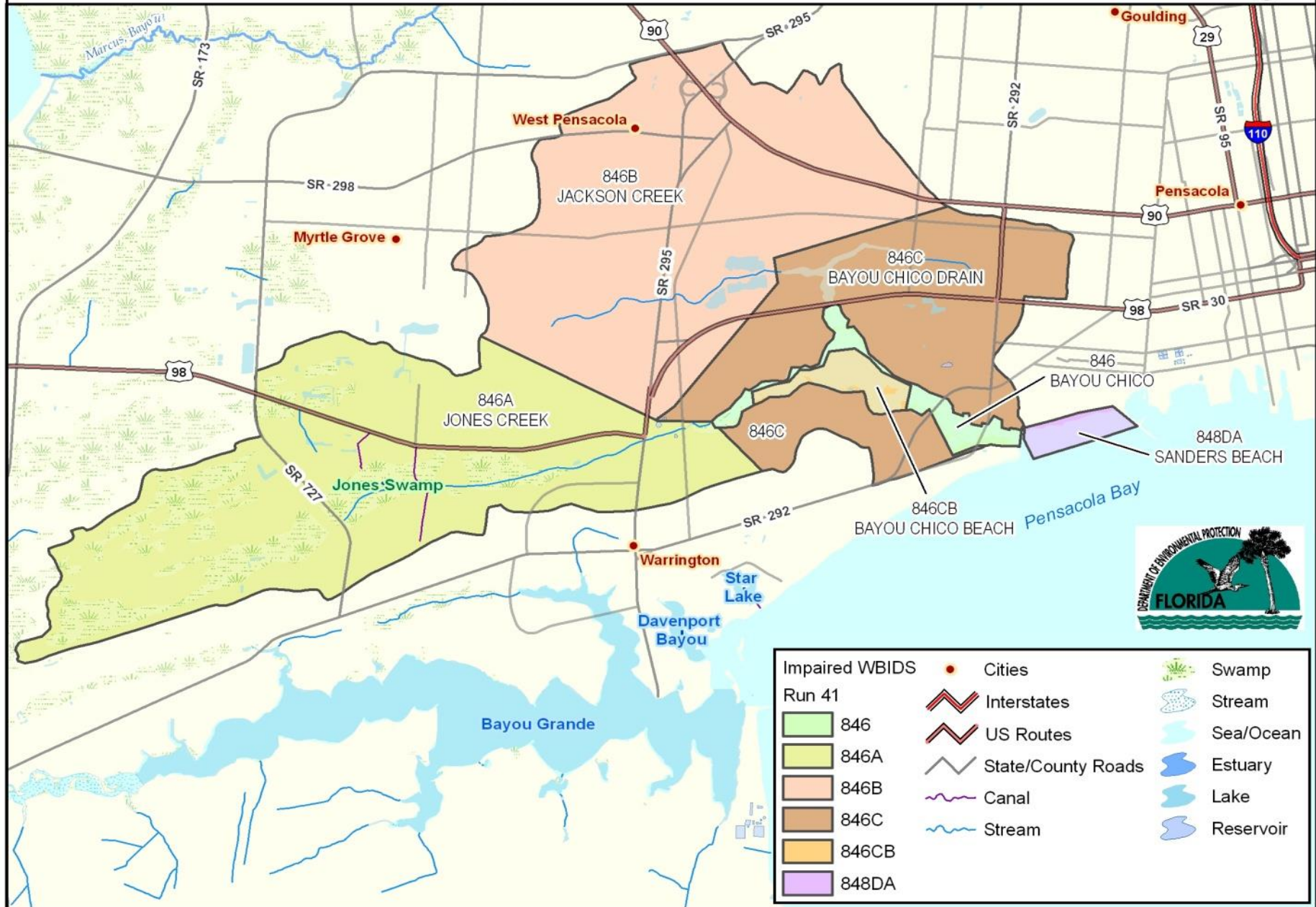


Background on the BMAP

- BMAP adopted October 2011 to address fecal coliform total maximum daily loads (TMDLs).
- Six watersheds addressed:
 - Jones Creek.
 - Jackson Creek.
 - Bayou Chico.
 - Bayou Chico Drain.
 - Bayou Chico Beach (Lakewood Park).
 - Sanders Beach.

BAYOU CHICO WATERSHED: Project Location

0 0.25 0.5 1 Miles





Activities During the Reporting Period

- Bayou Chico Association held its annual cleanup day, removed about 2,000 pounds of trash from Bayou Chico.
- The Bay Area Resource Council and University of West Florida:
 - Added curb markers to inlets that drain to Bayou Chico;
 - Distributed stormwater fact sheets to more than 1,200 homes in the area; and
 - Held the 2013 Environmental Symposium.



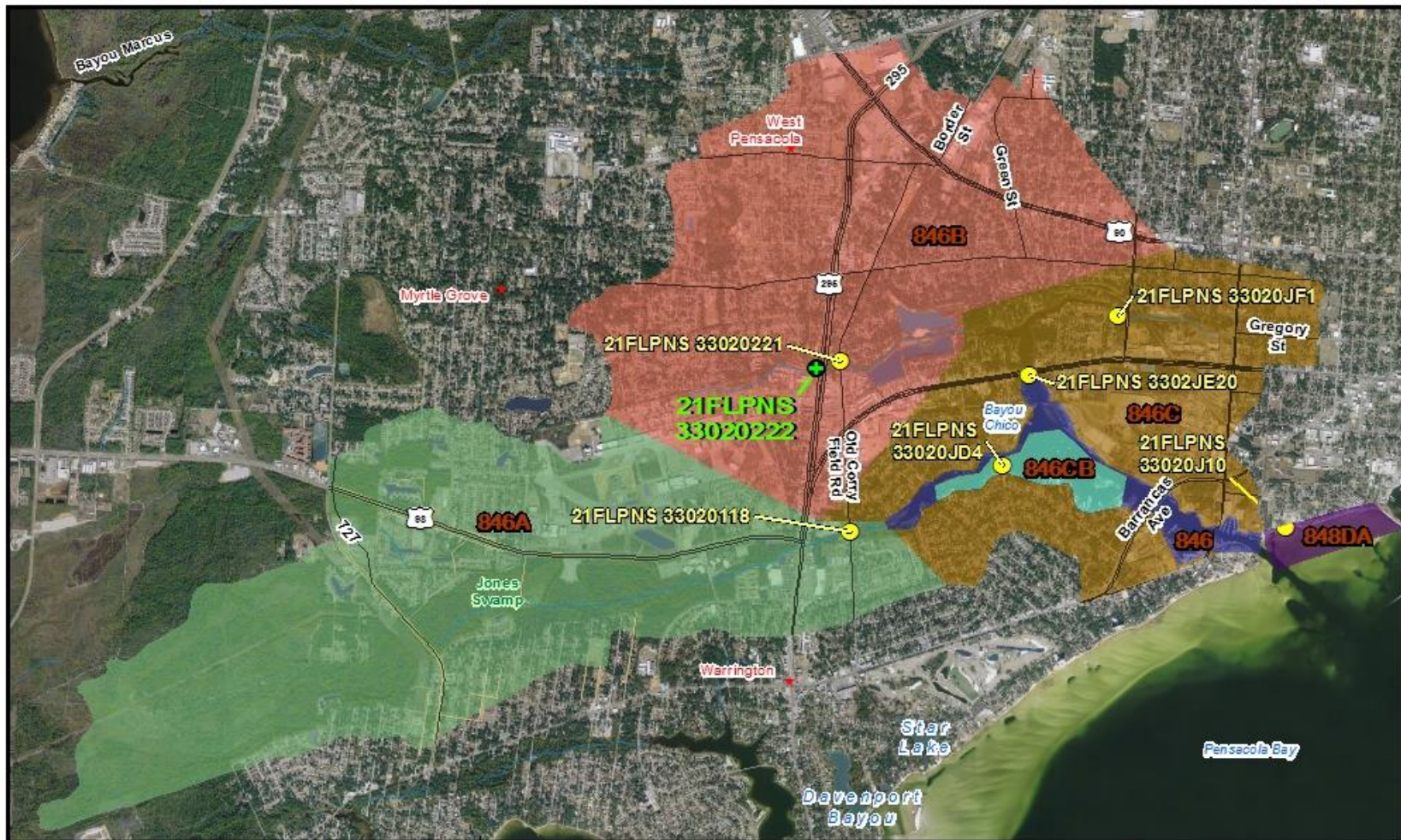
Activities During the Reporting Period (cont.)

- The City of Pensacola received funding for:
 - ‘R’ and Wright Street baffle box stormwater project;
 - Bayou Drive outfalls, and
 - Bill Gregory Park stormwater treatment enhancement project.
- Escambia County:
 - Largely completed the Southwest Greenway 3rd Extension project, and
 - Received RESTORE Act funding for the Beach Haven Stormwater Improvement Project Phase I.
- Emerald Coast Utilities Authority (ECUA) continued to phase out septic tanks in the basin.



Water Quality Monitoring

- The BMAP monitoring plan consists of monthly ambient fecal coliform (FC) and Enterococcus monitoring at seven stations:
 - Sampling by Escambia County.
 - Sample analysis by University of West Florida Wetland Research Laboratory.
 - Follow up sampling, as needed, where FC counts exceed 5,000 colony forming units (CFU).
- Escambia County and the Department added a new station Oct. 2013 on Jackson Creek at North New Warrington Road.
 - Captures one-third of the watershed area for Jackson Creek that enters upstream of this location; and
 - Downstream original Old Corry Road station captures most remaining stormwater input to creek.
- FDOH collects Enterococcus samples at two locations in the basin (Lakewood Park and Sanders Beach) for the Healthy Beaches Program.



**Figure 3: BAYOU CHICO
BMAP Sampling Stations
(Revised Jan. 2014)**

Map created January 23, 2014. Map is for display purposes only. Contact Stephen Cioccia; Stephen.Cioccia@dep.state.fl.us



- STATION_33020222_New Warrington Rd
- BMAP STATIONS_rev8-2013
- Cities
- Secondary Highways
- Primary and US Highways

Verified Impaired WBIDs

- 846
- 846A
- 846B
- 846C
- 846CB
- 848DA





FC Data Overview

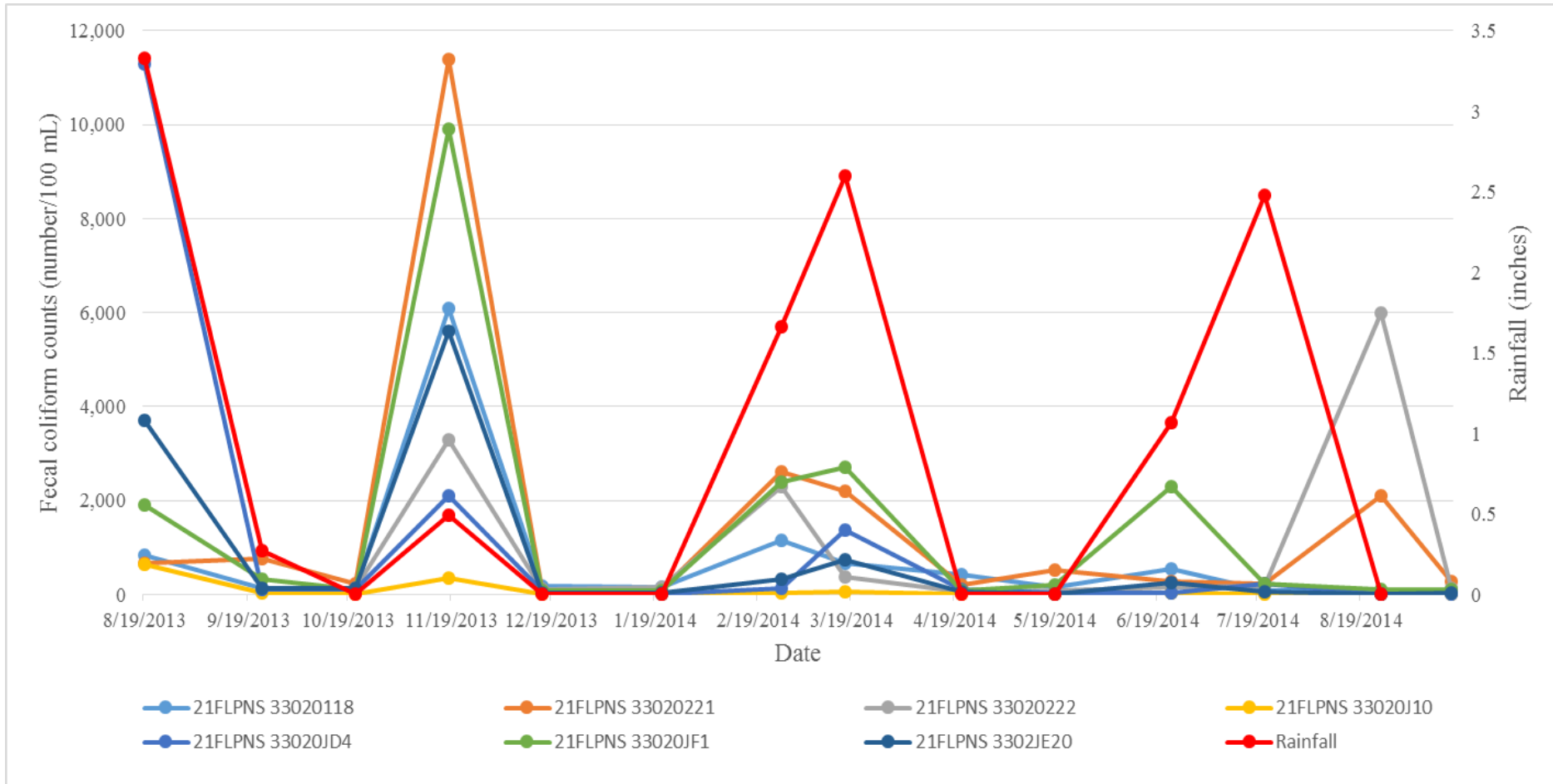
- Data range extreme at station Navy Blvd. Br. (33020JD4):
 - From 11,300 CFU on 8/19/2013 to 0.0 CFU on 8/25/2014.
- Overall exceedance of the FC criteria (not $> 10\%$ above 400 CFU/100 mL):
 - 40% of the time in 2012;
 - 29% of the time in 2013; and
 - 24% of the time in 2014.
- Lowest station exceedance of the FC criteria 2013 – 2014 at Sanders Beach (33020J10):
 - 7%, equal to 1 of 14 observations (1 exceedance on 8/19/2013).



FC Correlation with Rainfall

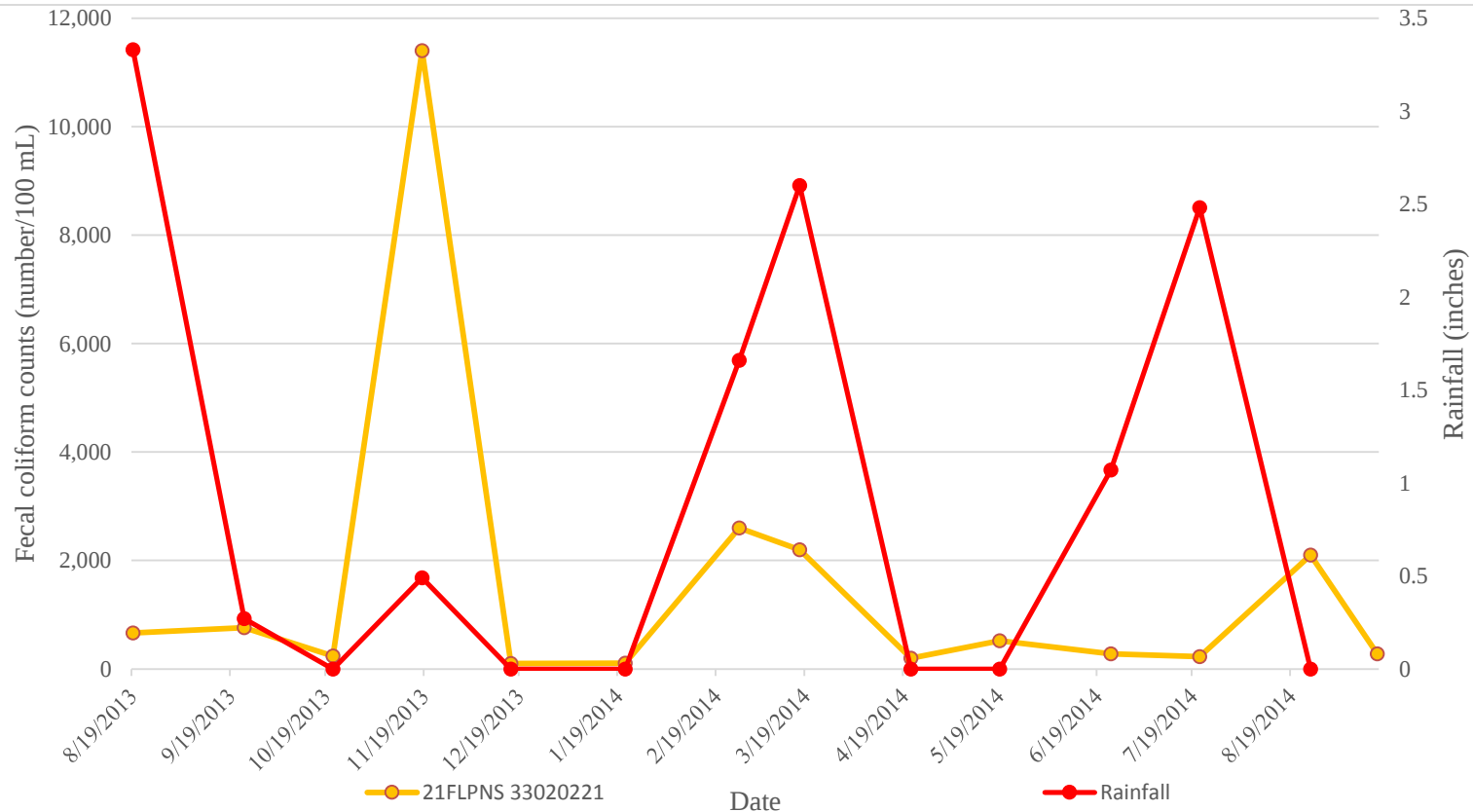
- In 2013 and 2014, appears the high FC counts are correlated with larger rainfall events.
- The higher FC counts:
 - Aug. & Nov. 2013;
 - Feb. & March 2014;
 - All correlate with rainfall events; and
 - Particularly at upstream branch stations.
- The FC geometric mean for the period of 2013 through 2014 is 177 CFU.
 - Removing data associated with rainfall events, geometric mean drops to 99 CFU.

Fecal Coliforms and Rainfall





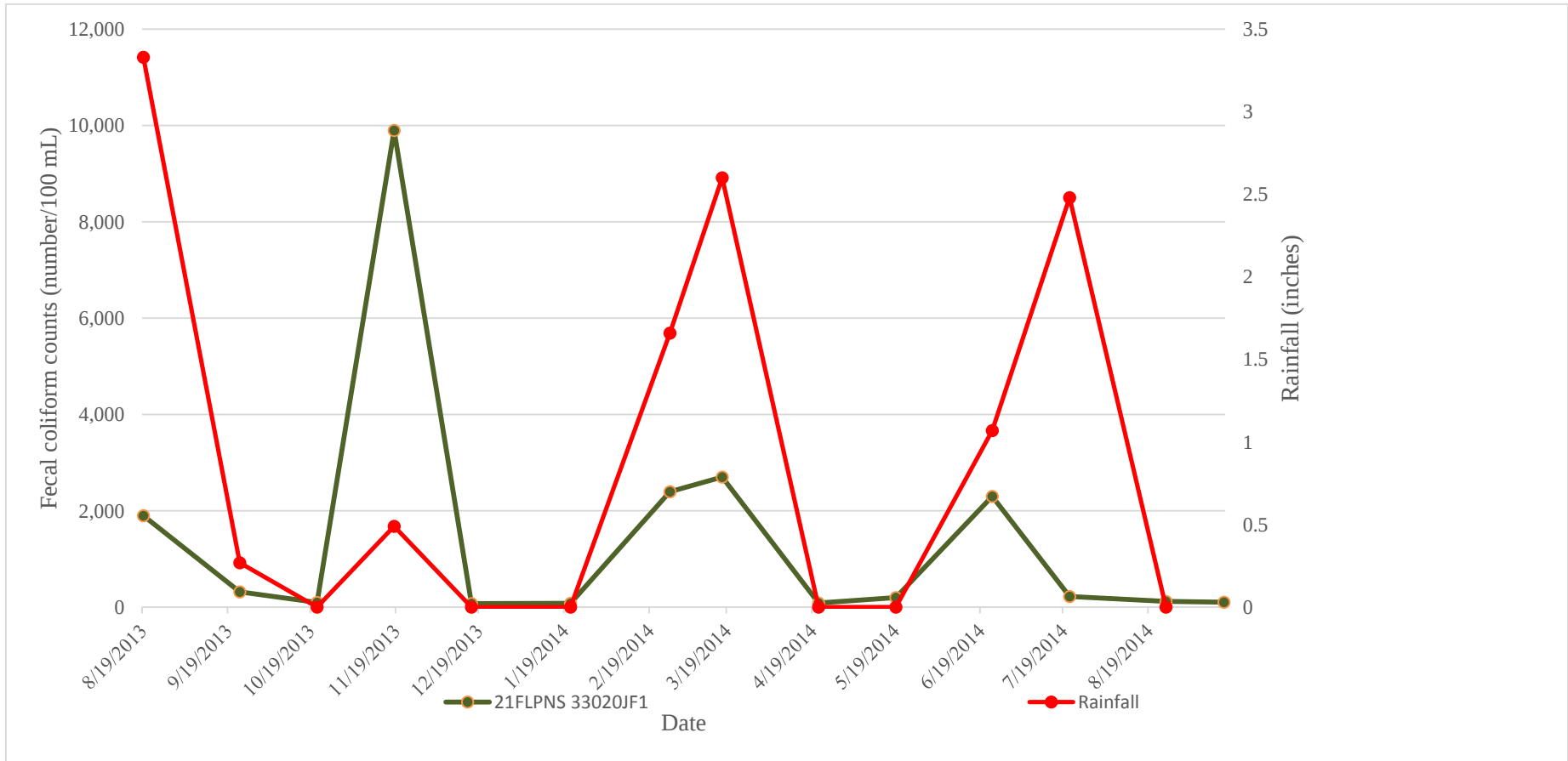
Most Increase FC with Rainfall Jackson Cr. at Old Corry Rd.





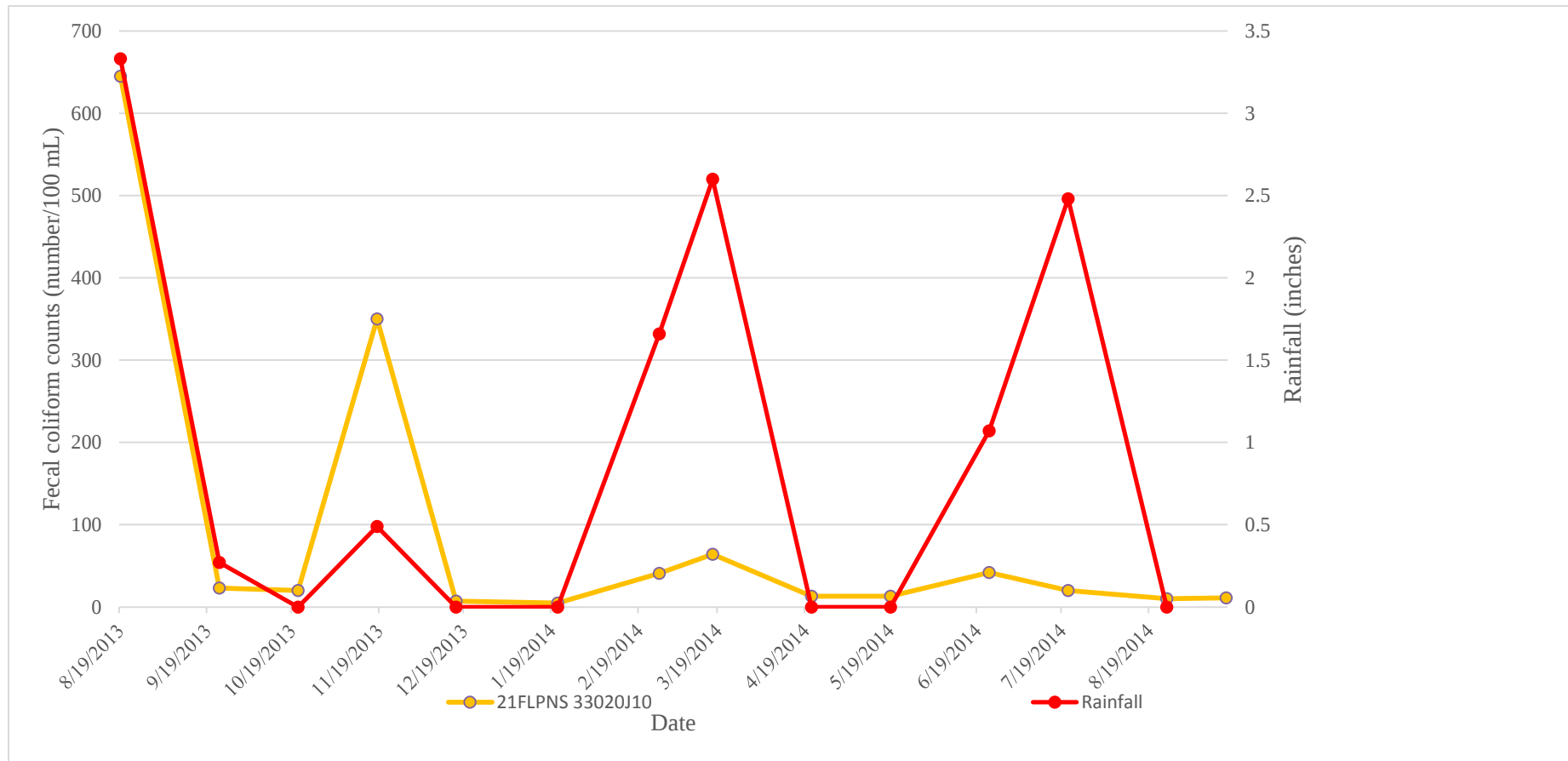
2nd Most Increase FC with Rainfall

Bayou Chico at 'W' Street





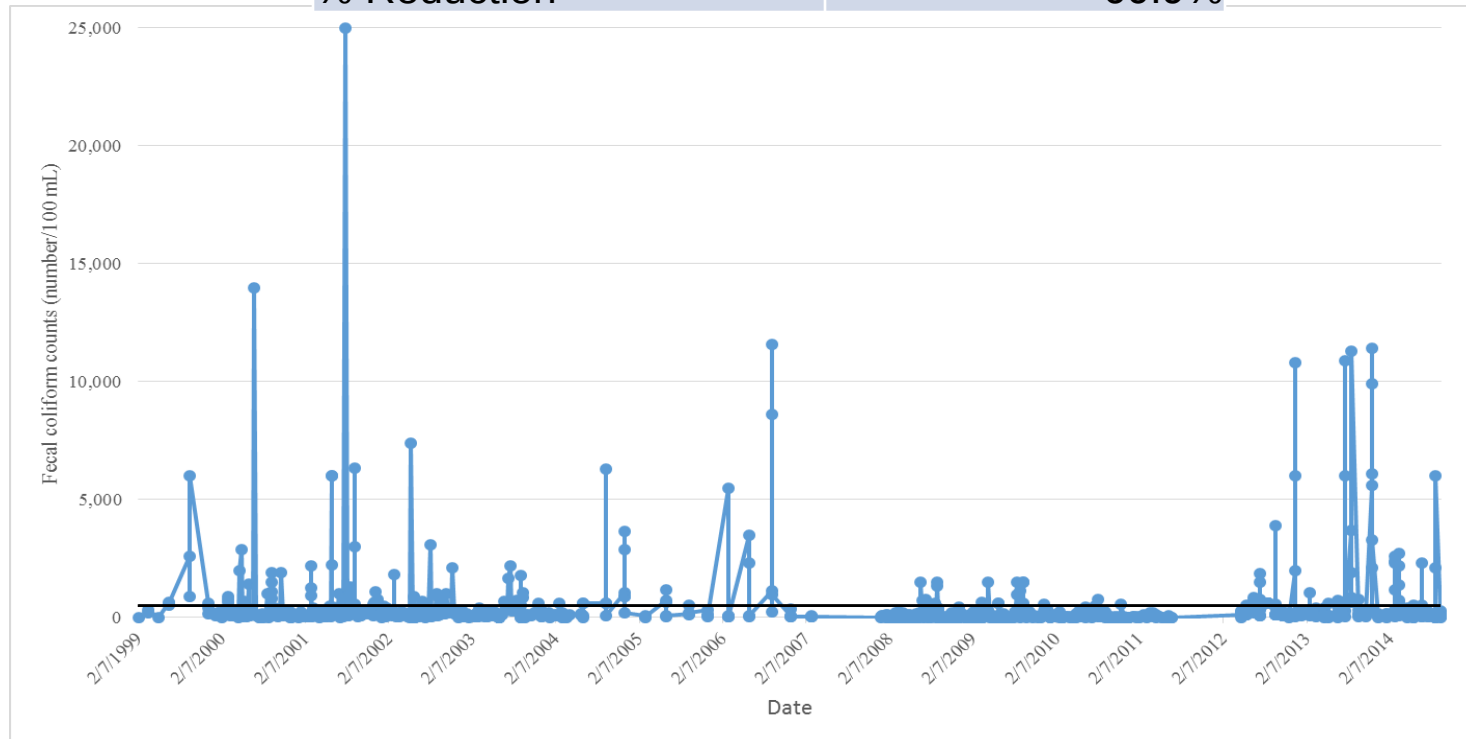
Least Increase FC with Rainfall Sanders Beach Station





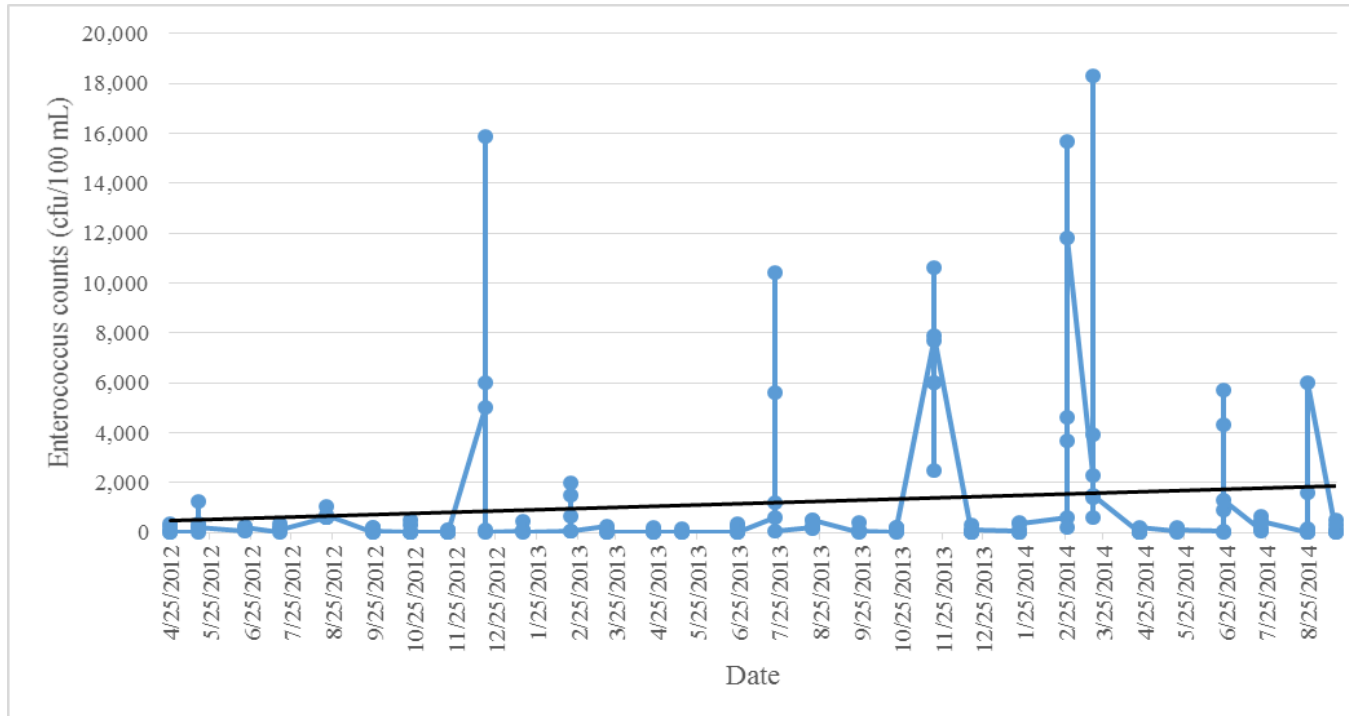
Long Term FC Patterns

Period	Geometric Mean (counts/100 mL)
TMDL (January 1, 1998 – June 30, 2005)	161
Post-TMDL (July 1, 2005 – October 31, 2014)	63
% Reduction	60.9%



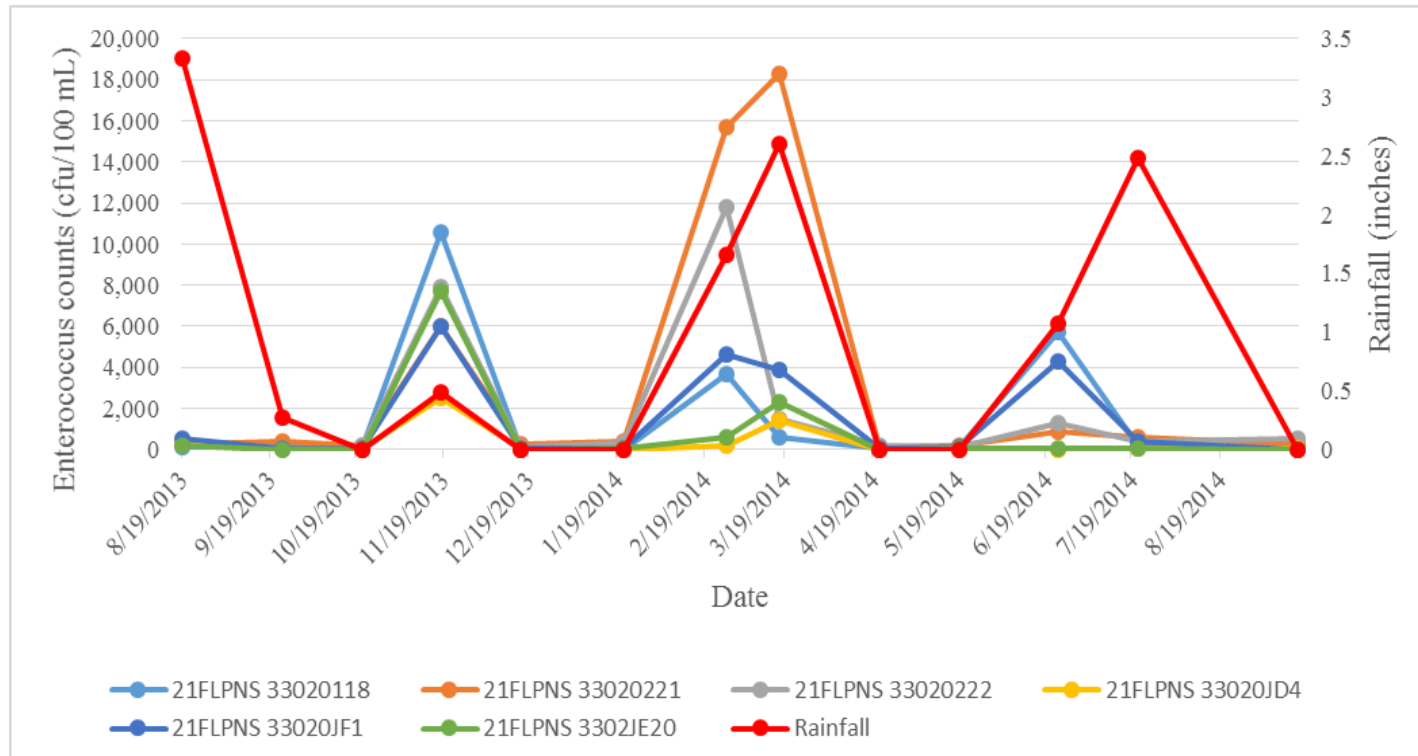
Long Term Enterococcus Patterns

- Enterococcus data also evaluated, increasing pattern over the period of 2012-2014.



Enterococcus and Rainfall

- The highest counts were found at the Jackson Creek at Old Corry Road station, and these high counts are also correlated with rainfall events.





Upcoming Year Activities

- Concentrated and extensive effort to more effectively identify actual and potential bacteria sources within BMAP area.
- The initial effort, Maps on the Table, was held this morning.
 - Stakeholders assisted in identifying potential bacteria sources within the BMAP watershed.
- Multiple field investigations and evaluations “Walk the Watershed” exercises will be conducted.



Upcoming Year Activities (cont.)

- Samples will be collected and analyzed for indicators of human waste to identify sources.
- Goal is to identify locations or activities within the watershed:
 - Where efforts will be effective in reducing human health risk bacteria; and
 - To meet the reductions required by the TMDL.



Questions and Discussion on the 2014 Progress Report



FC Data 2013-2014

Date	21FLPNS 33020118	21FLPNS 33020221	21FLPNS 33020222	21FLPNS 33020J10	21FLPNS 33020JD4	21FLPNS 33020JF1	21FLPNS 3302JE20
8/19/2013	836	664		645	11,300	1,900	3,700
9/23/2013	133	764		23	96	320	141
10/21/2013	118	240	141	20	104	100	126
11/18/2013	6,100	11,400	3,300	350	2,100	9,900	5,600
12/16/2013	177	104	104	7	90	76	38
1/21/2014	157	108	144	5	20	84	40
2/26/2014	1,164	2,600	2,300	41	140	2,400	330
3/17/2014	664	2,200	380	64	1,382	2,700	736
4/21/2014	420	200	58	13	118	88	56
5/19/2014	152	520	90	13	31	200	16
6/23/2014	540	280	157	42	28	2,300	243
7/21/2014	74	230	182	20	240	220	56
8/25/2014	82	2,100	6,000	10	0	118	11
9/15/2014	92	280	143	11	18	104	33