

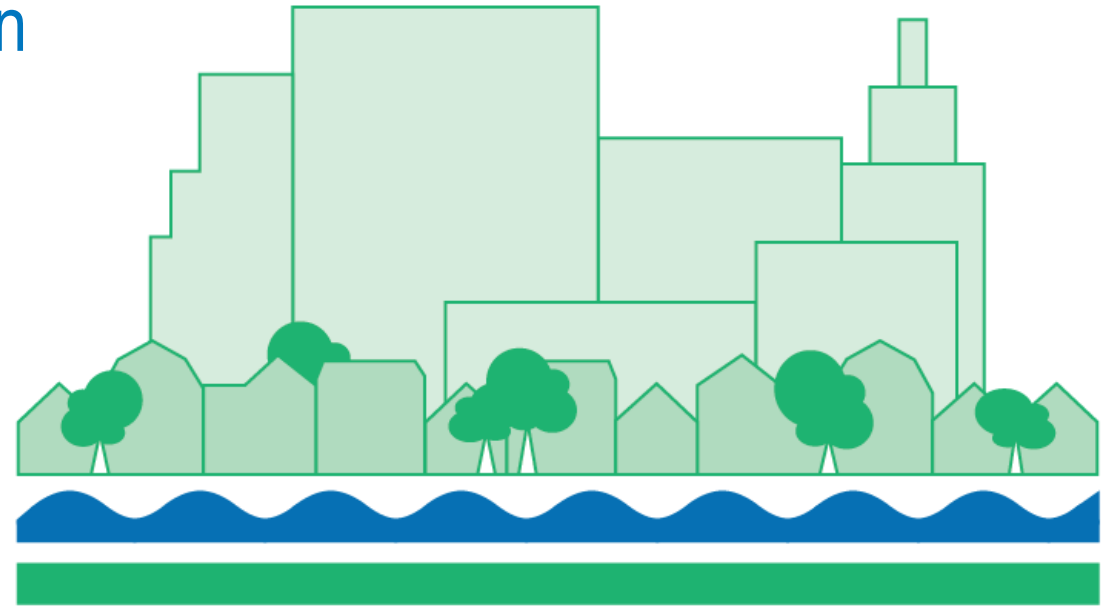
Supplemental CSO Team – Session 7

PVSC Service Area

North Bergen MUA Service Area (Woodcliff Treatment Plant)

Long Term Control Plan

April 17, 2018



CLEAN WATERWAYS
Healthy Neighborhoods

Agenda

- Introduction and Recap
- Baseline Compliance Monitoring Program Overview
- Overview of July 1st, 2018 Submissions to NJDEP
 - *Baseline Compliance Monitoring Report*
 - *Public Participation Process Report*
 - *Consideration of Sensitive Areas Information*
 - *System Characterization Report*
 - Timeline for Supplemental CSO Team Input
- Clean Waterways, Healthy Neighborhoods Public Outreach
 - Facebook, Twitter, Website, Brochures
- Right-of-Way Green Infrastructure Pilot Projects
- Questions



Introduction and Recap

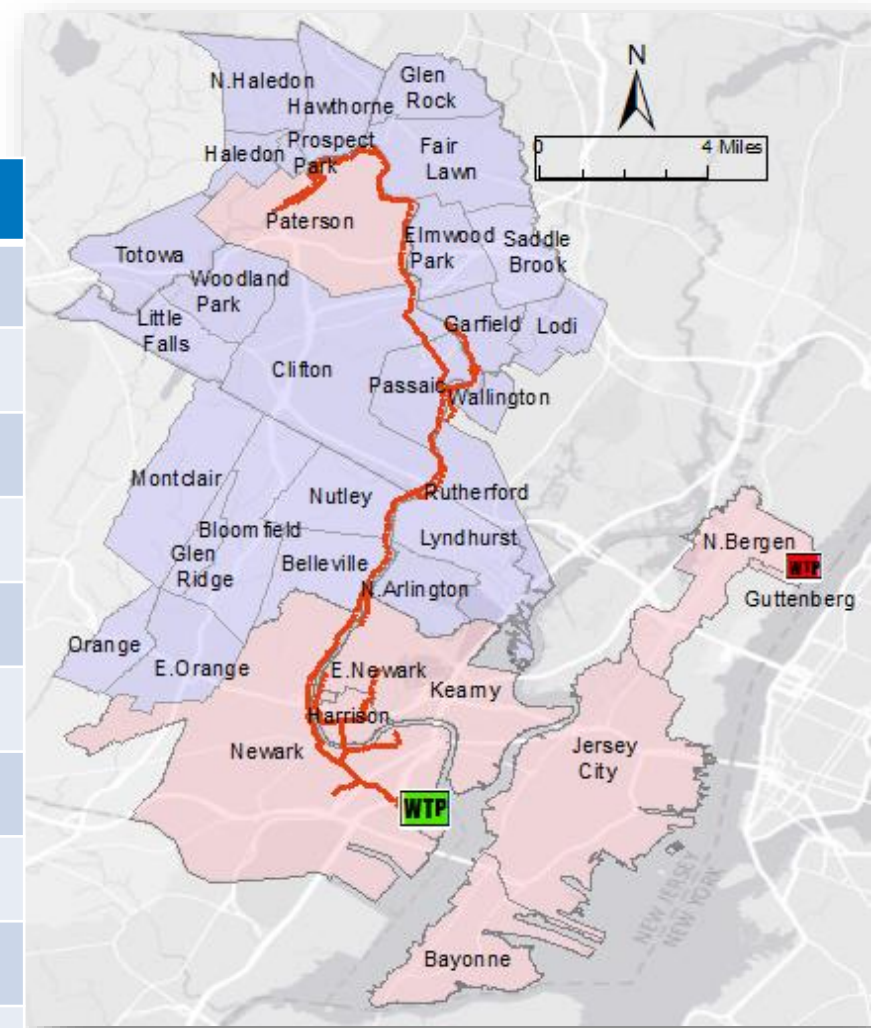


Supplemental CSO Team Members

Member	Organization	Member	Organization
Matt Dorans	Bayonne Chamber of Commerce	Sandra Meola	Paterson Smart
TBD	Jersey City Redevelopment Agency	Ruben Gomez	City of Paterson Economic Development
Nicole Miller	Newark DIG	Sheri Ferreira	Greater Paterson Chamber of Commerce
Drew Curtis	Ironbound Community Corporation	Betty Jane Boros	New Jersey Business & Industrial Association
Robin Dougherty	Newark Greater Conservancy/Newark Business Partnership	Meiyin Wu, Ph.D	Montclair State University - Passaic River Institute
Jorge Santos	Newark Community Economic Development Corporation	Christopher C. Obropta, Ph.D	Rutgers University - Cooperative Extension Water Resources
Christopher Pianese	Township of North Bergen	Captain Bill Sheehan	Hackensack Riverkeeper
Janet Castro	Hudson Regional Health Commission Town of North Bergen	Harvey Morginstin	Passaic River Boat Club & Passaic River Superfund CAG
Thomas Stampe	North Bergen "Sustainable Jersey" group	Laurie Howard	Passaic River Coalition
Nancy Kontos	Bunker Hill Special Improvement District	Ben Delisle	Passaic River Rowing Association
Alison Cucco	Jersey City Environmental Commission	Patricia Hester-Fearon	Town of Kearny
Michele Langa	NY/NJ Baykeeper	Christopher Vasquez	Town of Kearny

Permittees

Permittee	Municipality	WWTP	CSOs
Bayonne MUA	Bayonne	PVSC	30
Borough of East Newark	East Newark		1
Town of Harrison	Harrison		7
Jersey City MUA	Jersey City		21
Town of Kearny	Kearny		5
City of Newark	Newark		18
North Bergen MUA	North Bergen		7
City of Paterson	Paterson		23
PVSC	-		0
Town of Guttenberg	Guttenberg		Woodcliff
North Bergen MUA*	North Bergen	1	
	Total		114



* North Bergen MUA conveys flows to both PVSC and Woodcliff WWTPs



59-Month Program Schedule and Milestones

 **Permit Effective Date**
July 1st, 2015

We Are Here

2015

2016

2017

2018

2019

2020

January 1, 2016

- ✓ Coordinates of pumps, regulators, and outfalls
- ✓ System Characterization Work Plan
- ✓ Baseline Compliance Monitoring Program Work Plan

July 1, 2016

- ✓ Map of Combined and Separate Sewer Areas

July 1, 2018

- System Characterization Report
- Public Participation Process Report
- Compliance Monitoring Program Report
- Consideration of Sensitive Areas Plan

July 1, 2019

- Development and Evaluation of Alternatives Report

June 1, 2020

- Selection and Implementation of Alternatives Report in the Final LTCP

 Permit Due Date

Water Quality Monitoring Program Overview

presented by: Richard R. Isleib 



NJHDG Existing Sampling Program

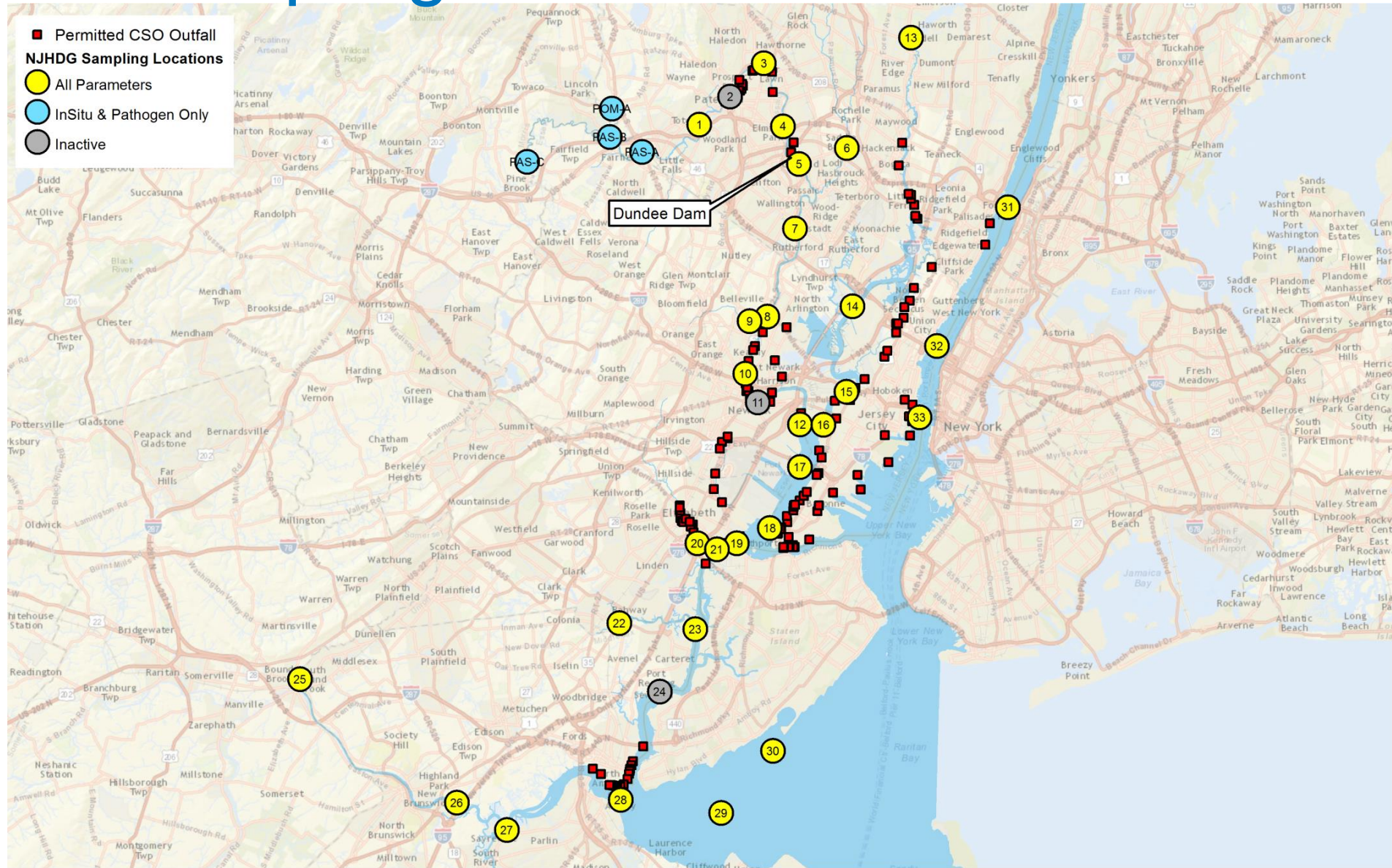
**The New Jersey Harbor
Dischargers Group
2010 Water Quality Report**



- Initiated in 2003
- 34 Active Monitoring Sites throughout NJ portion of NY/NJ Harbor Estuary



NJHDG Sampling Locations



Baseline Sampling Plan Goals

- Supplement NJHDG stations
 - Ensuring each permittee is represented
- Assess baseline water quality (WQ) conditions
 - Pre-LTCP implementation
- Assess dry-weather and wet-weather conditions
 - NJDEP requires a minimum of five dry-weather events and 10 wet-weather events
- Sampling to assess only pathogens



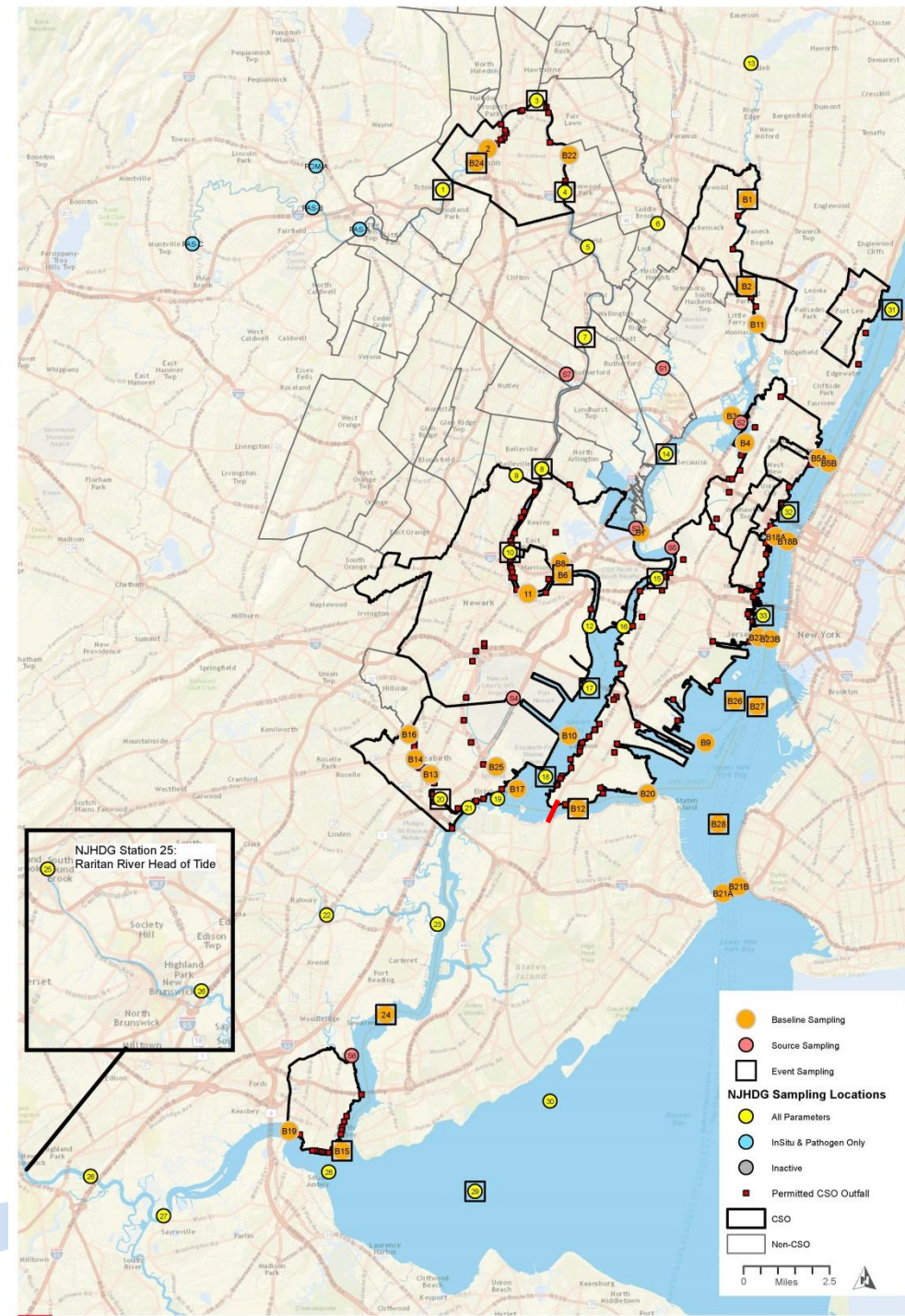
Model Requirements Sampling

- Demonstration Approach Modeling Sampling Needs
 - Supplement NJHDG data and Baseline Compliance Monitoring Data with specific data for model calibration/validation
 - Quantify load-response relationships
 - Receiving water sampling following pathogen die-off (consecutive day “intensive” sampling)
 - Physical measurements



CMP Sampling Program

- Routine Sampling
 - 34 NJHDG (existing)
 - 35 Baseline (additional)
 - 7 Source (trib. Inflows)
- Sampling Frequency
 - Baseline and Source
 - Jan-Apr: Monthly
 - May-Jun: Bi-weekly
 - Jul-Aug: Weekly
 - Oct-Dec: Monthly
- Intensive Sampling
 - 20 Stations
 - 3 events
 - 3 days/event
 - Sampled 2-4/day



Summary of Stations

- Sampling stations are distributed so that each municipality has at least one representative station.

Community	Number of Stations
City of Hackensack	2
Borough of East Newark	1
Borough of Fort Lee	1
City of Bayonne	5
City of Elizabeth	9
City of Jersey City	5
City of Newark	6
City of Paterson	5
City of Perth Amboy	3
Town of Guttenberg	1
Town of Harrison	2
Town of Kearny	9
Township of North Bergen	5
Village of Ridgefield Park	2



Sampling Constituents

- Field
 - Temperature
 - Salinity
 - Secchi Depth
 - Turbidity
- Laboratory
 - Fecal Coliform
 - Enterococci
 - E. Coli



NJ Pathogen Criteria

Primary Contact Recreation:

- Enterococci levels shall not exceed a geometric mean of **35/100 ml**, or a single sample maximum of **104/100 ml**. (SE1 and SC)
 - Hackensack River (upper), Hudson River (north of Harlem River), Raritan River, Raritan Bay
- E. coli levels shall not exceed a geometric mean of **126/100 ml** or a single sample maximum of **235/100 ml**. (All FW2)
 - Elizabeth River, Passaic River, Raritan River

Secondary Contact Recreation:

- Fecal coliform levels shall not exceed a geometric mean of 770/100 ml. (SE2)
 - Arthur Kill (lower), Hackensack River (mid), Hudson River, Passaic River (mid), Rahway River
- Fecal coliform levels shall not exceed a geometric mean of 1500/100ml. (SE3)
 - Arthur Kill (upper), Elizabeth River, Hackensack River (lower), Kill Van Kull, Newark Bay, Passaic River (lower)



Results

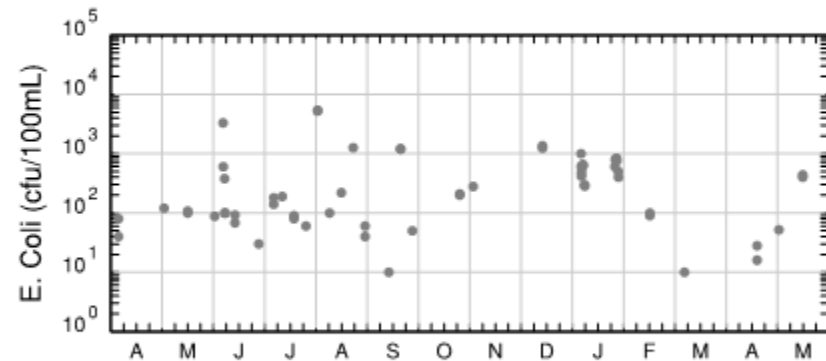
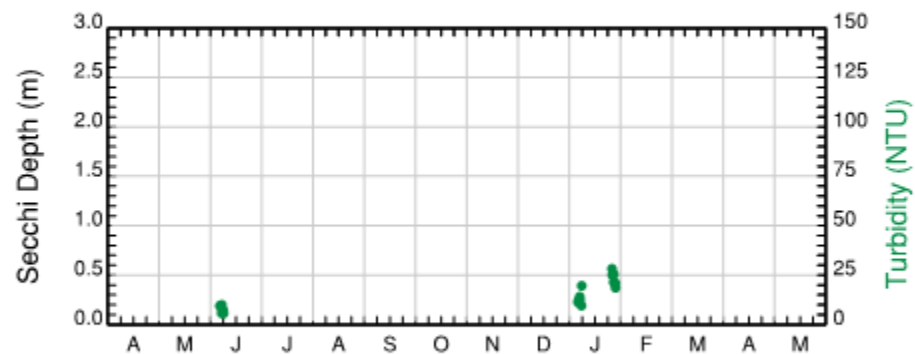
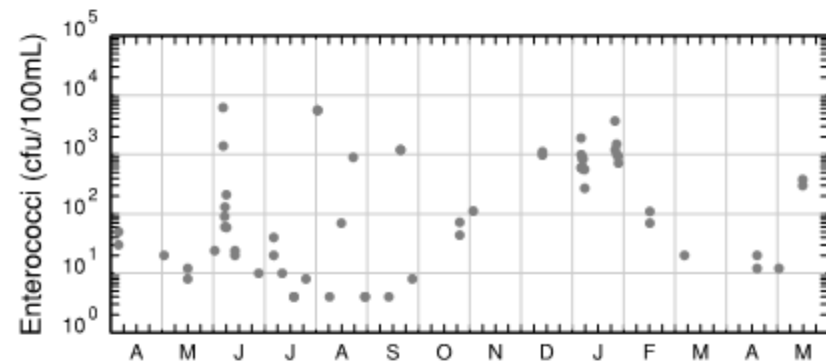
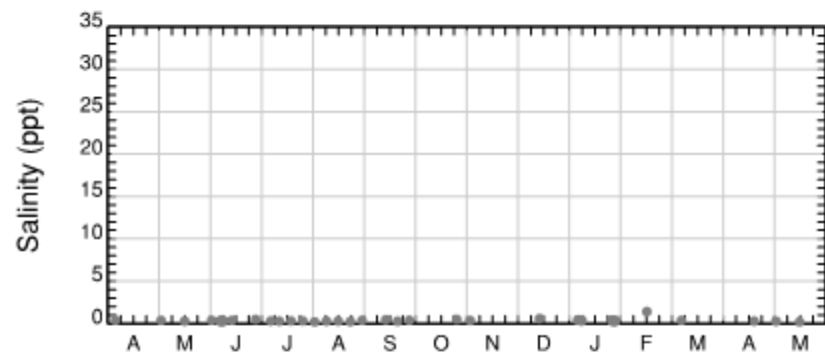
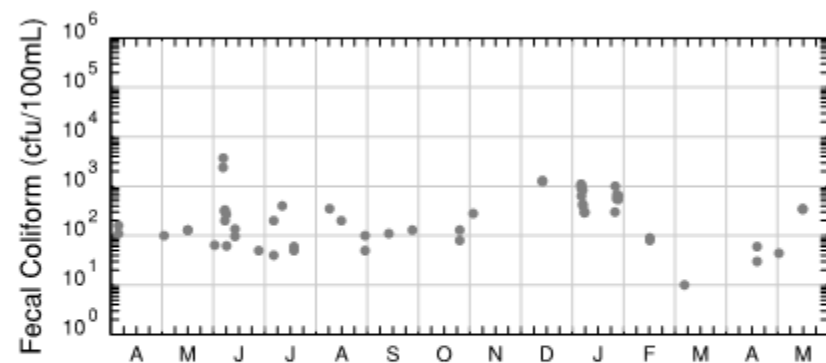
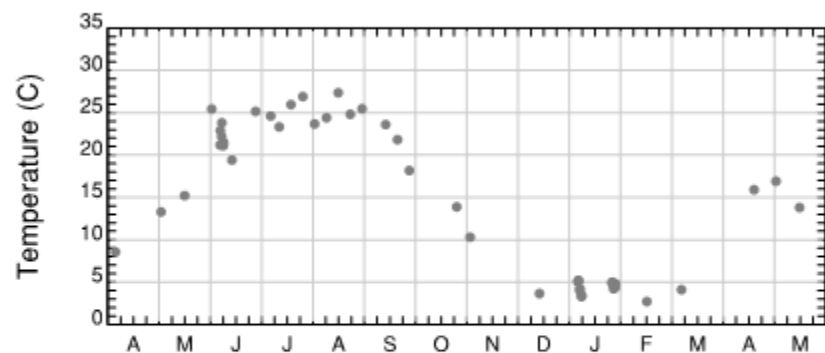
Note: 2016 was not a “typical” or base case condition



Passaic River & Tributaries



Passaic River & Tributaries, Passaic River, 1, (FW2)

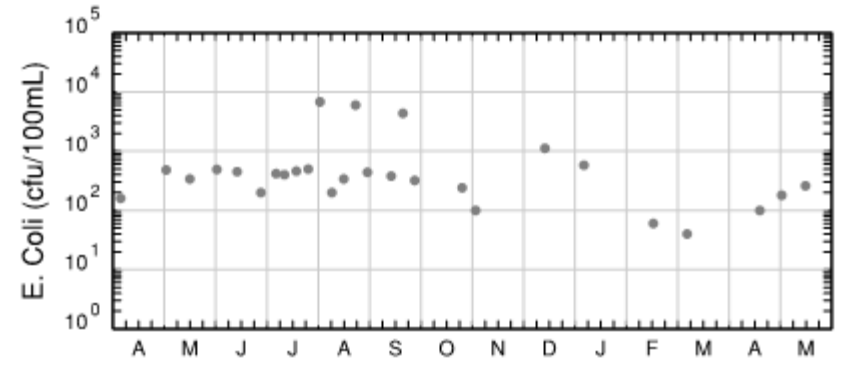
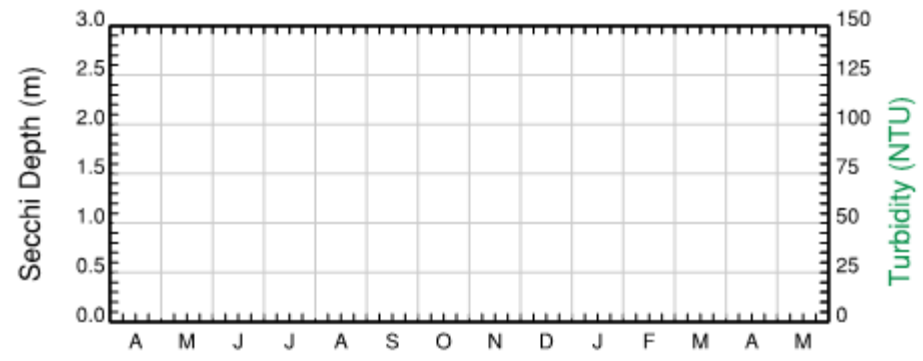
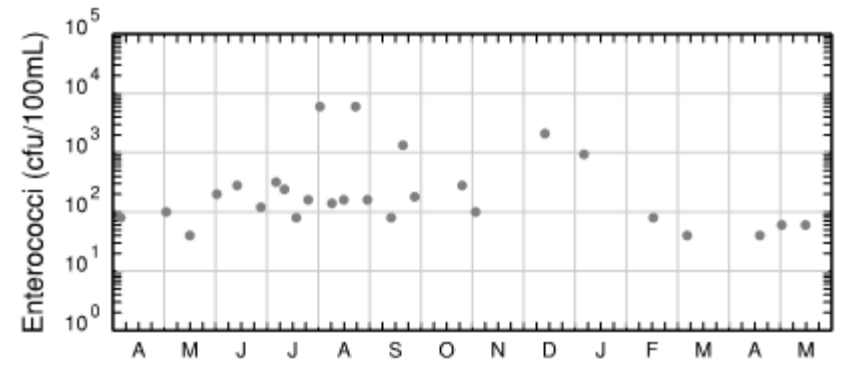
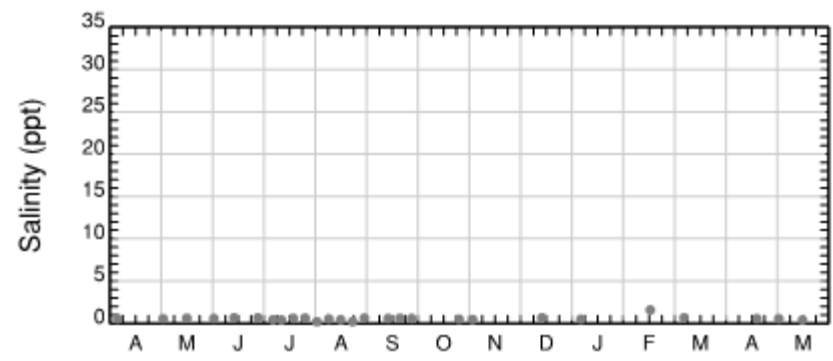
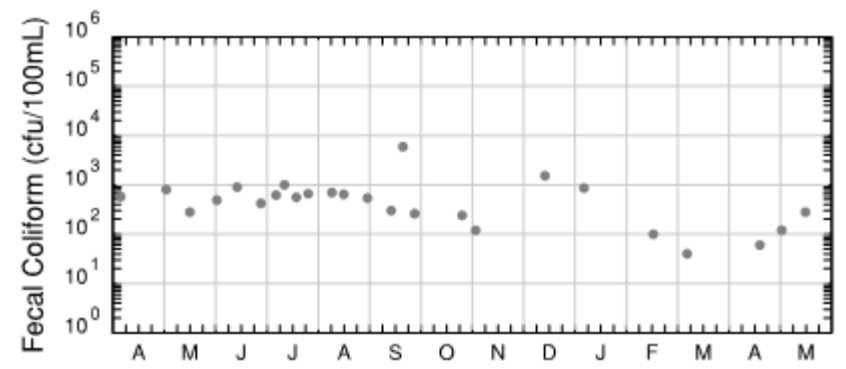
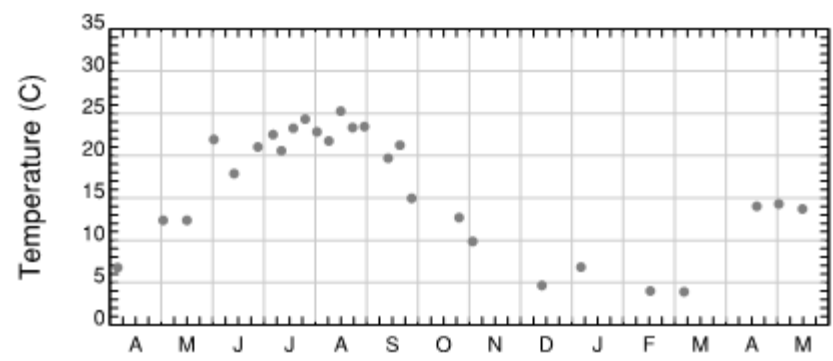


Time (Month)
2016 / 2017

Time (Month)
2016 / 2017

- Surface
- Mid-Depth
- Bottom

Passaic River & Tributaries, Saddle River, 6, (FW2)

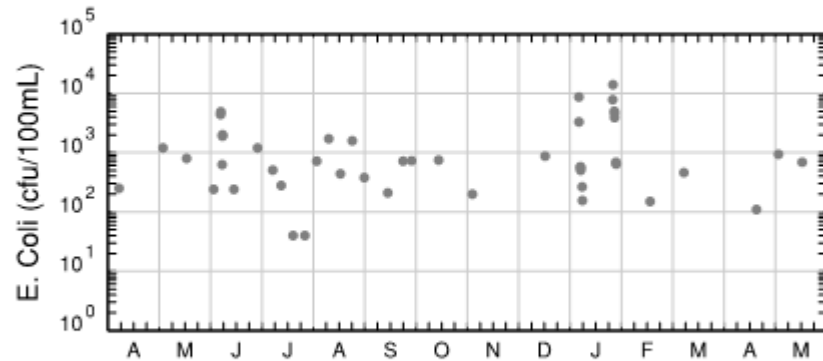
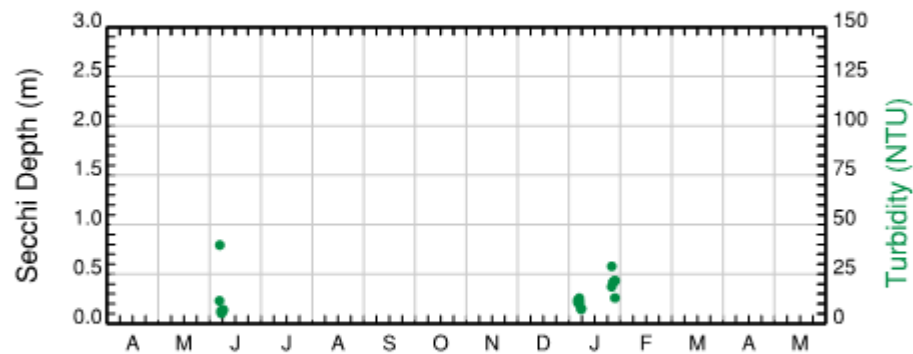
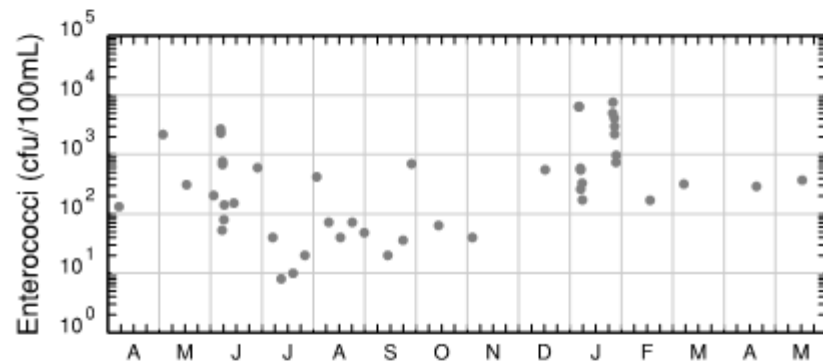
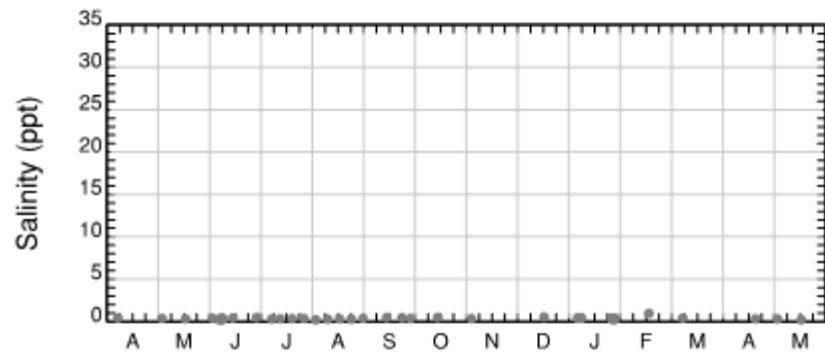
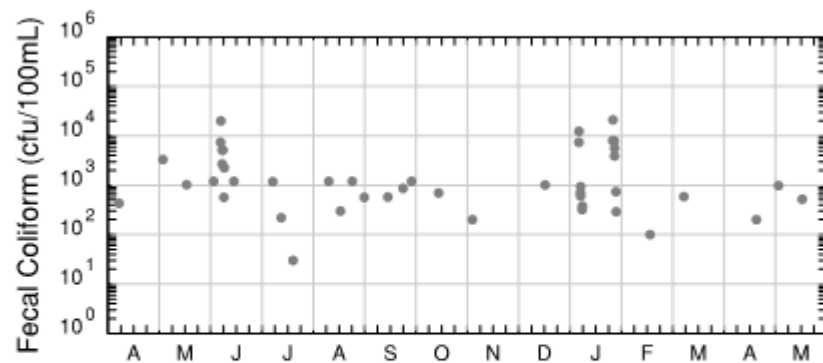
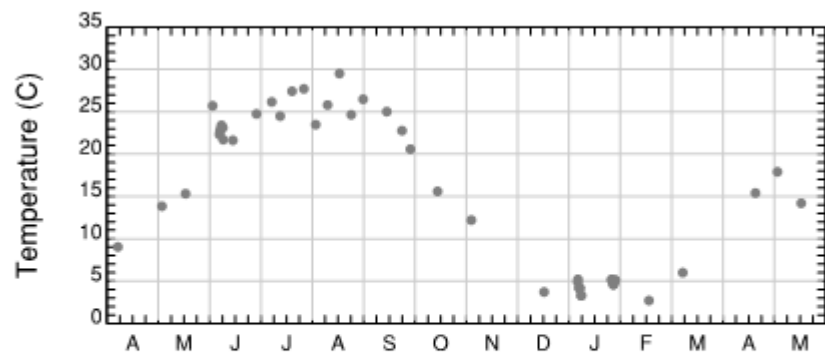


Time (Month)
2016 / 2017

Time (Month)
2016 / 2017

- Surface
- Mid-Depth
- Bottom

Passaic River & Tributaries, Passaic River, 7, (FW2/SE2)

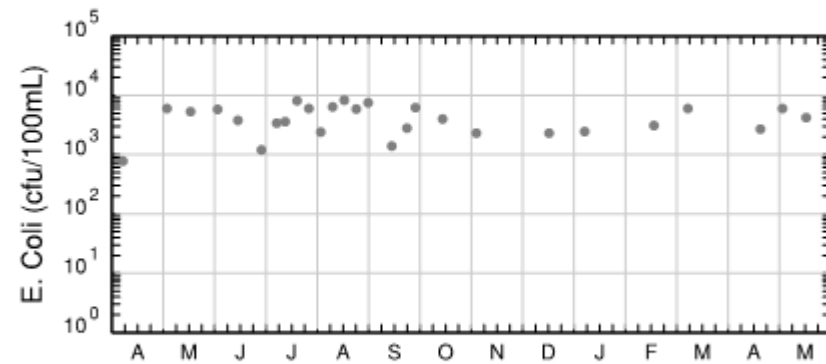
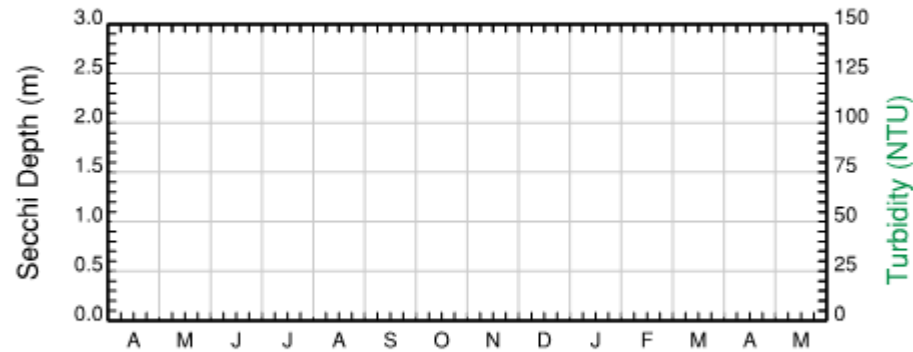
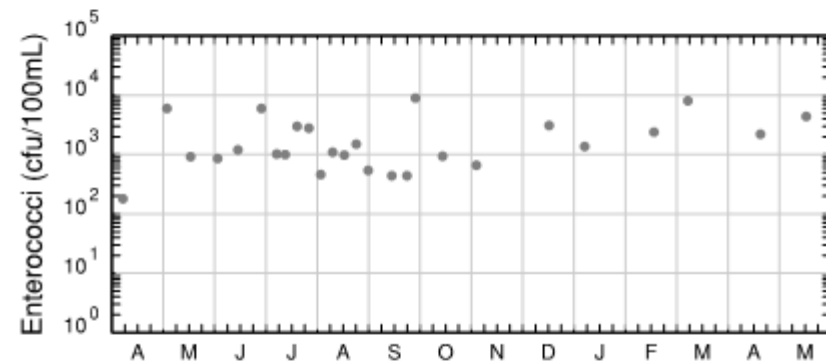
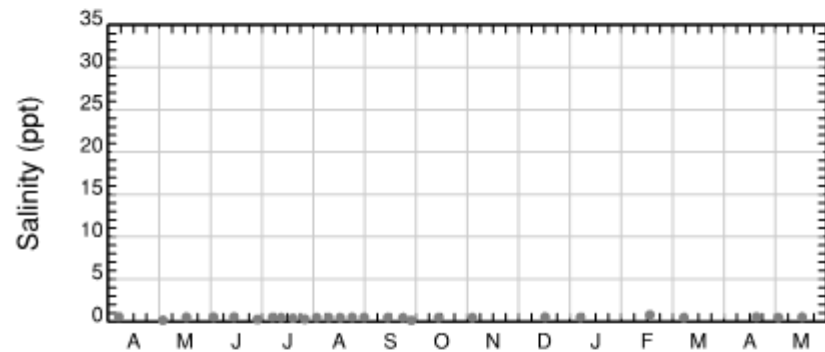
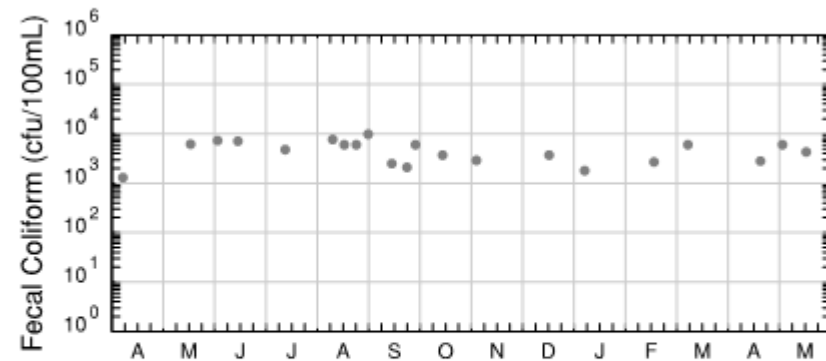
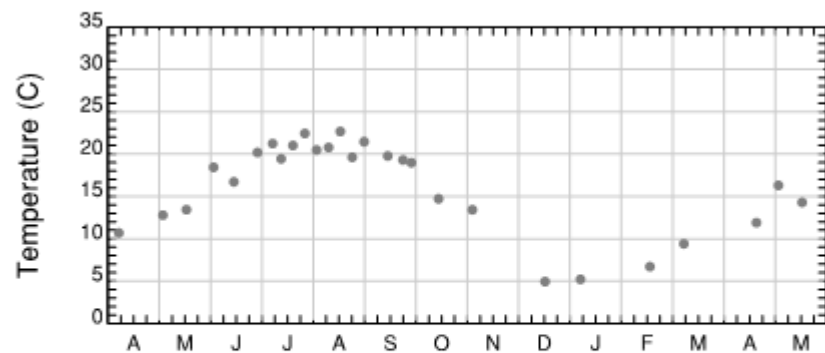


Time (Month)
2016 / 2017

Time (Month)
2016 / 2017

- Surface
- Mid-Depth
- Bottom

Passaic River & Tributaries, Second River, 9, (FW2)

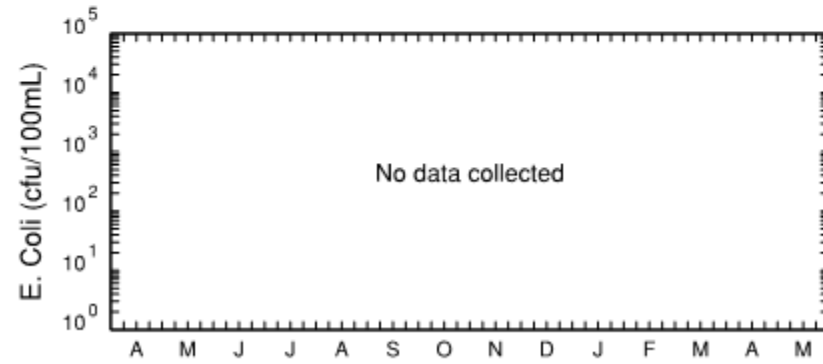
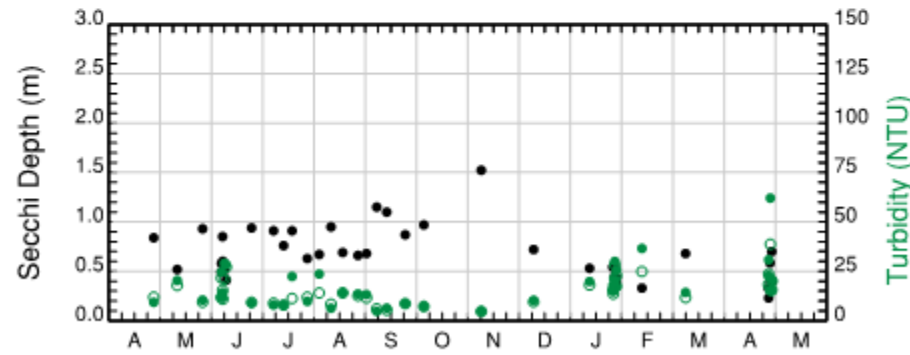
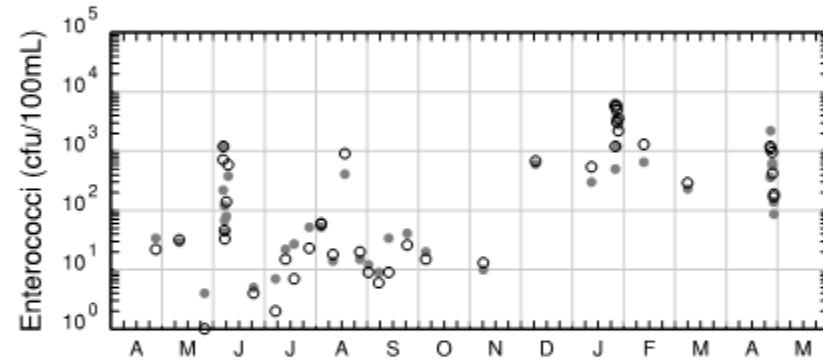
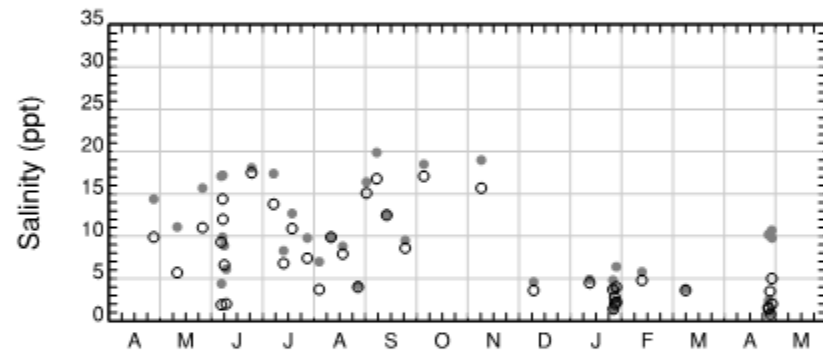
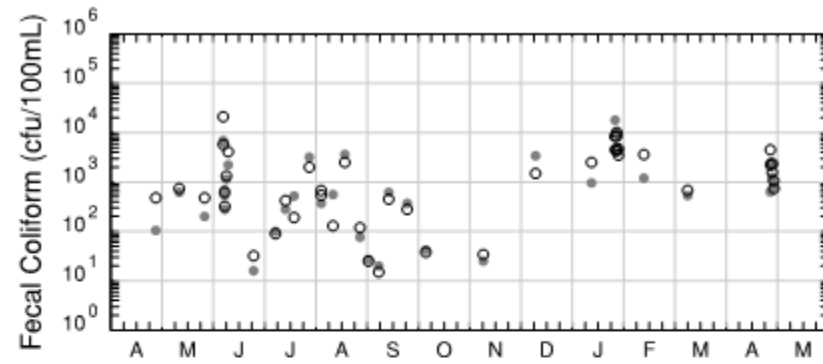
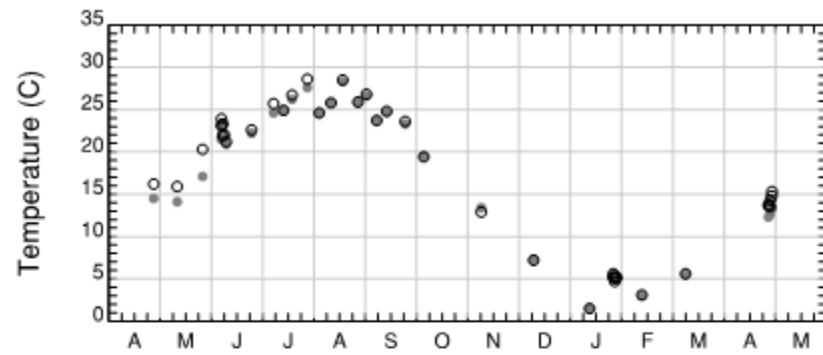


Time (Month)
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Time (Month)
2016 / 2017

- Surface
- Mid-Depth
- Bottom

Passaic River & Tributaries, Passaic River, B6, (SE3)



Time (Month)
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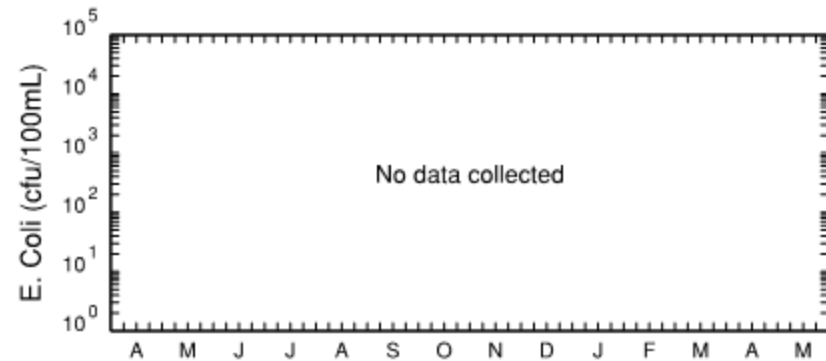
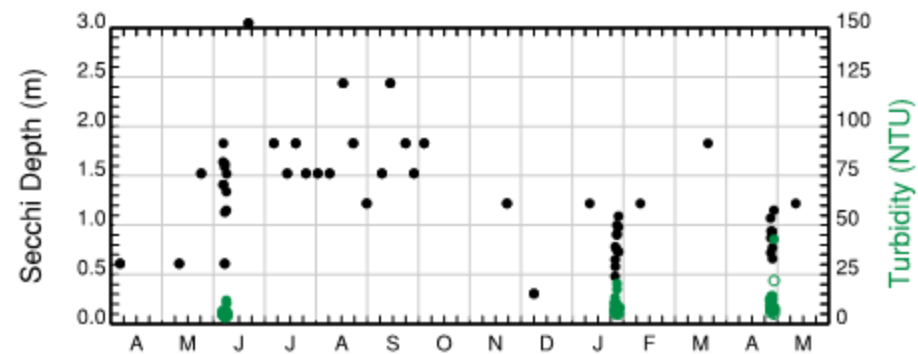
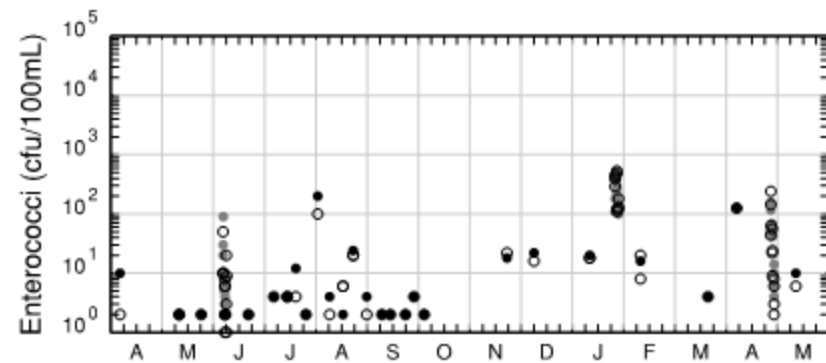
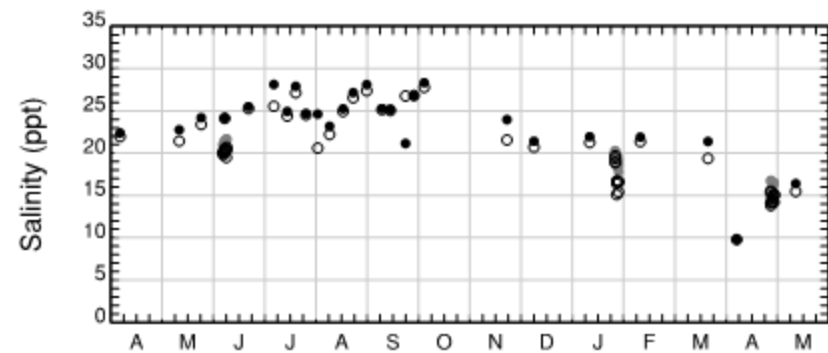
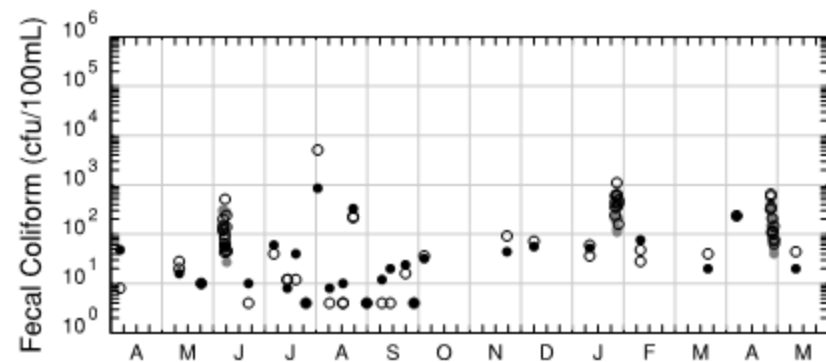
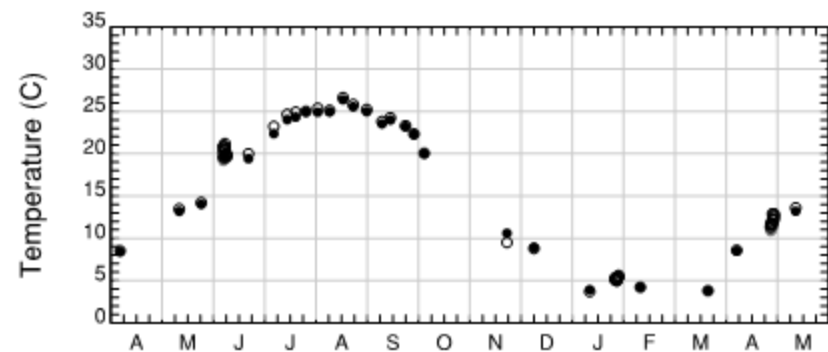
Time (Month)
2016 / 2017

- Surface
- Mid-Depth
- Bottom

Newark Bay



Newark Bay & Tributaries, Newark Bay, 18, (SE3)



Time (Month)
2016 / 2017

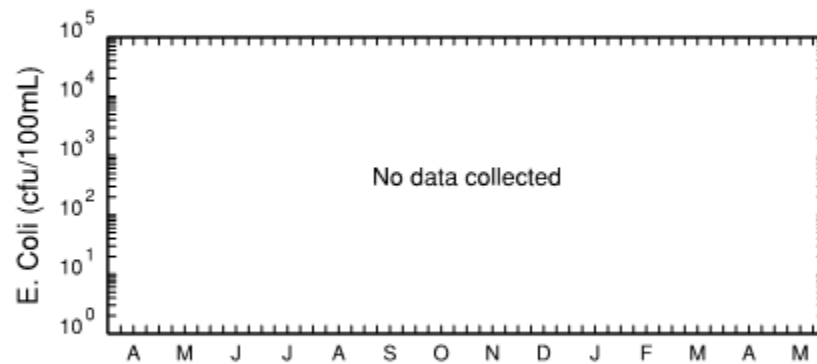
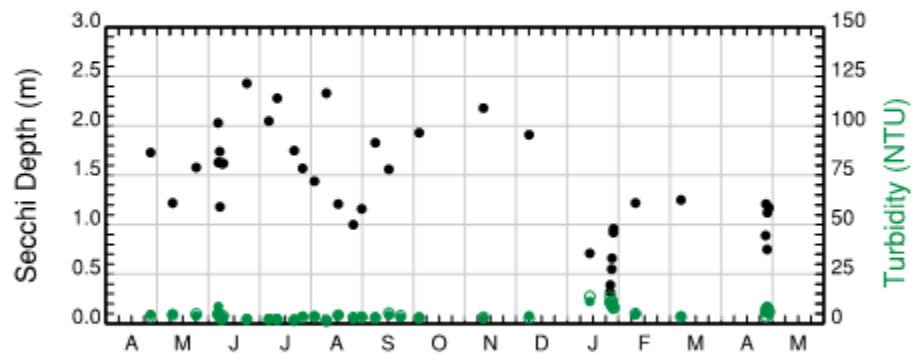
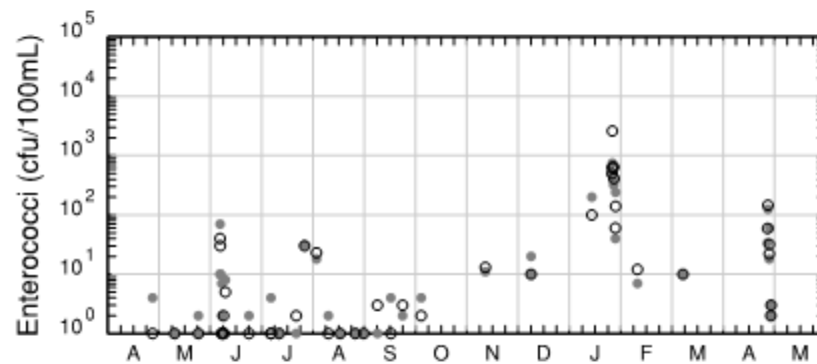
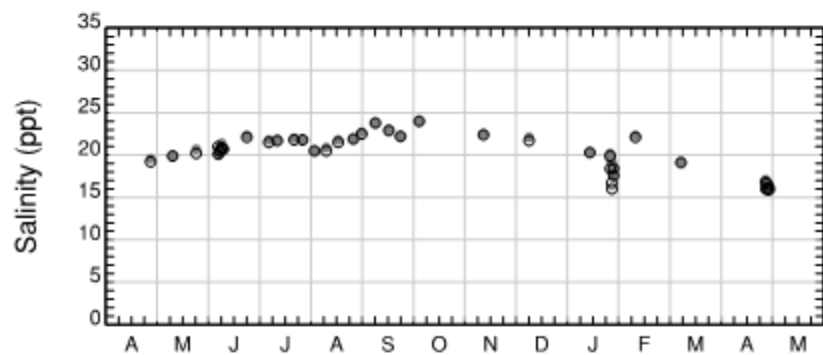
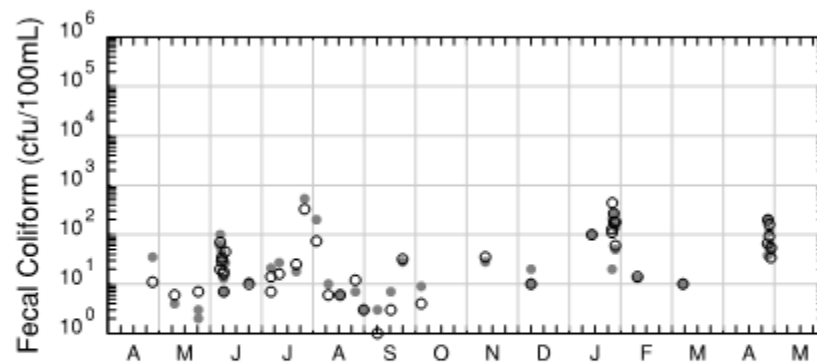
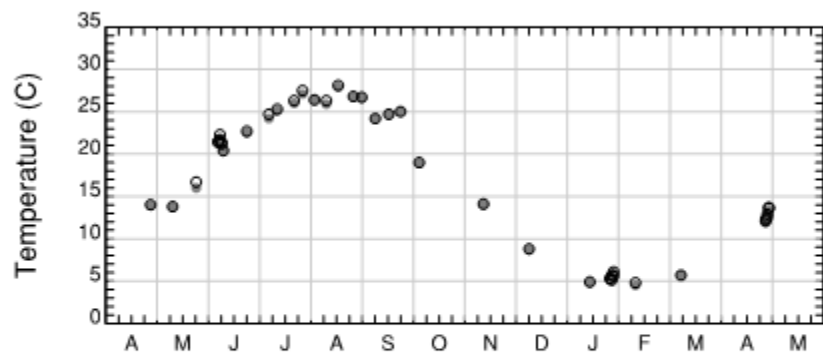
Time (Month)
2016 / 2017

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- Bottom

Arthur Kill



Arthur Kill, Raritan River/Bay & Tributaries, Arthur Kill, 24, (SE3)



Time (Month)
2016 / 2017

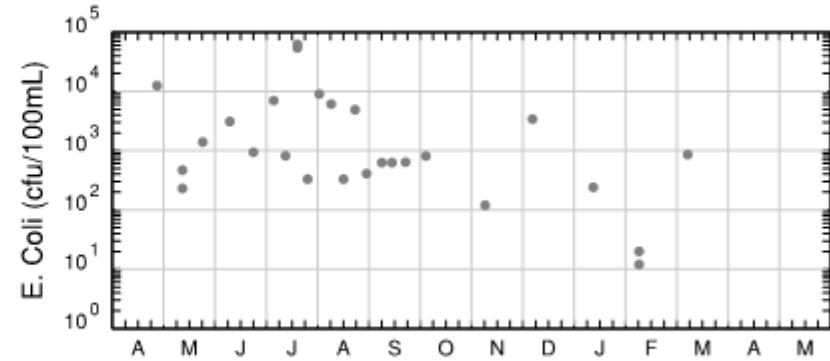
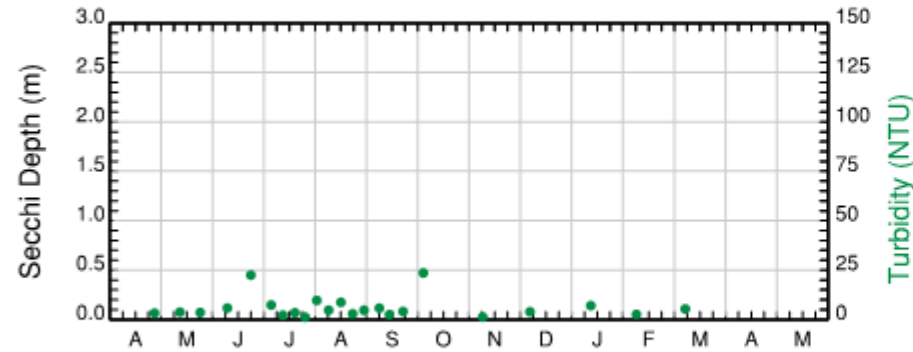
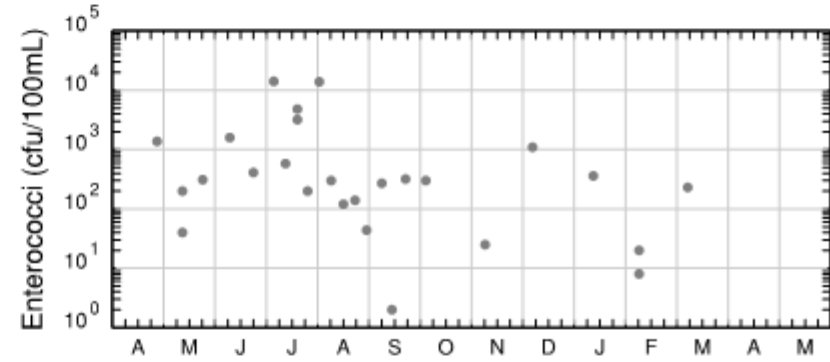
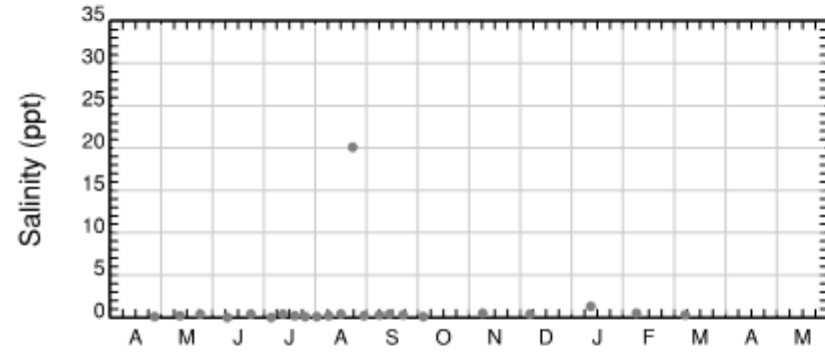
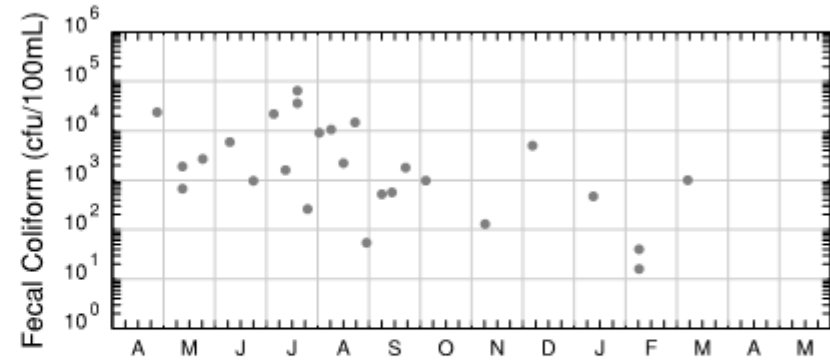
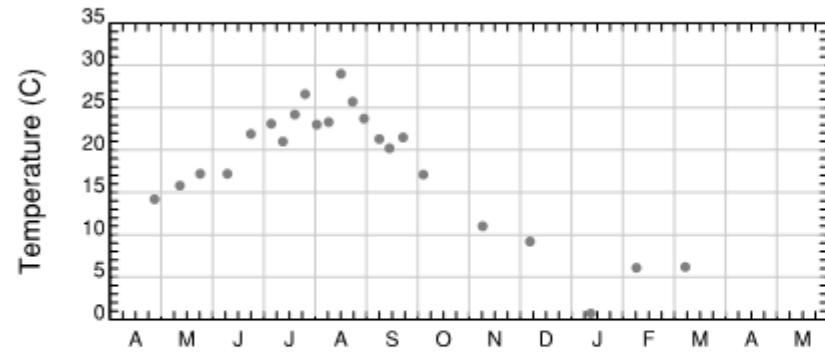
Time (Month)
2016 / 2017

- Surface
- ◐ Mid-Depth
- Bottom

Elizabeth River



Newark Bay & Tributaries, Elizabeth River, B16, (FW2)



Time (Month)
2016 / 2017

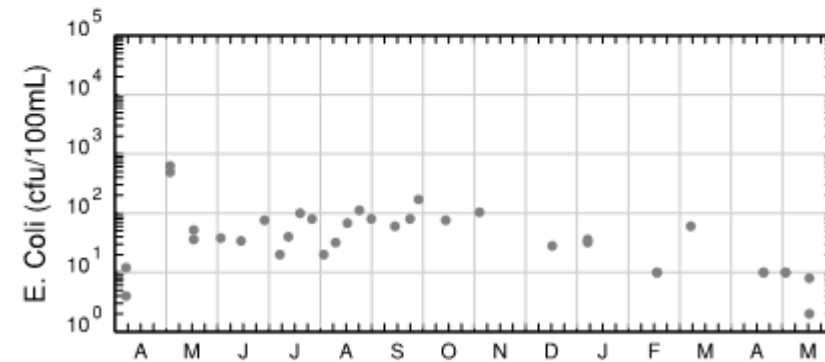
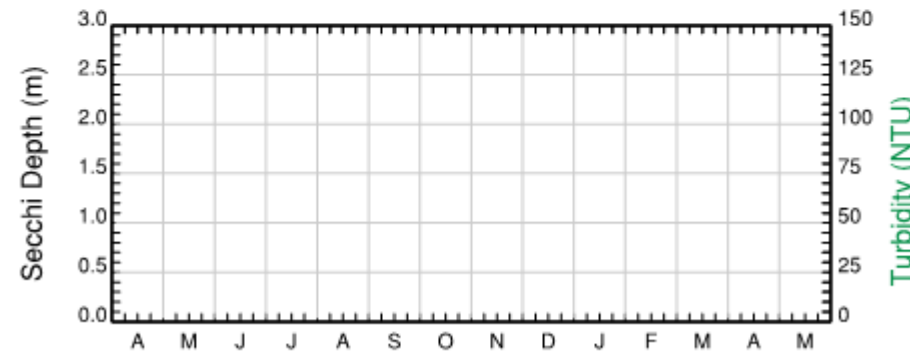
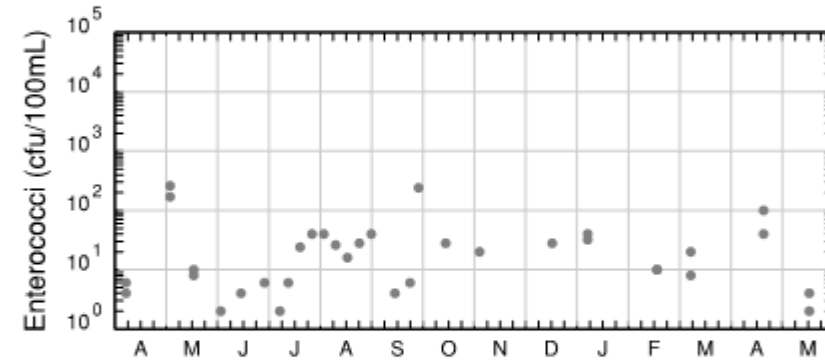
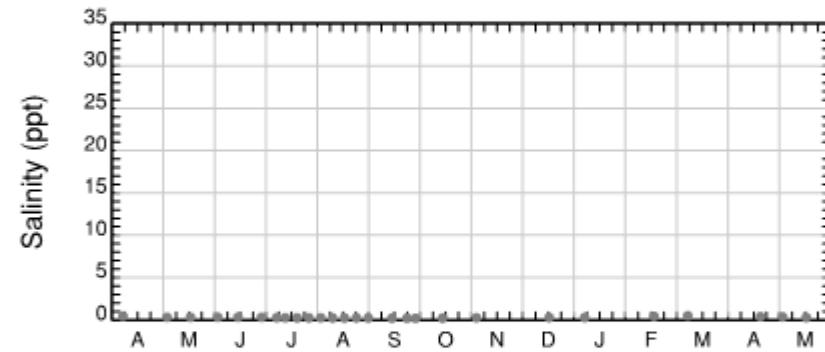
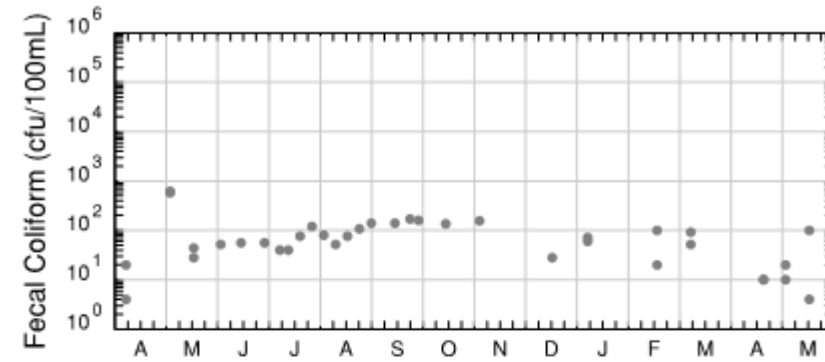
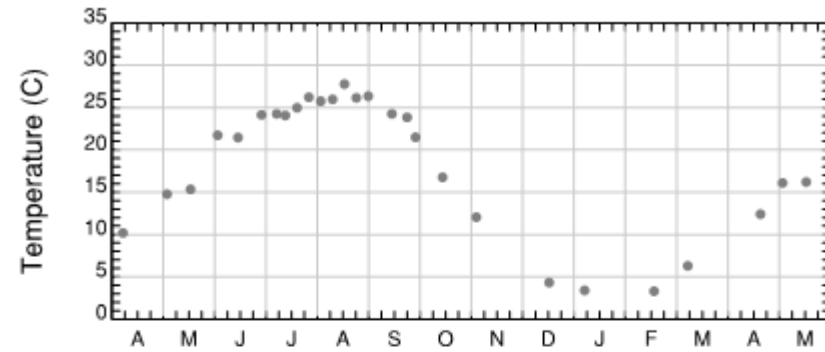
Time (Month)
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Hackensack River



Hackensack River & Tributaries, Hackensack River, 13, (SE1)

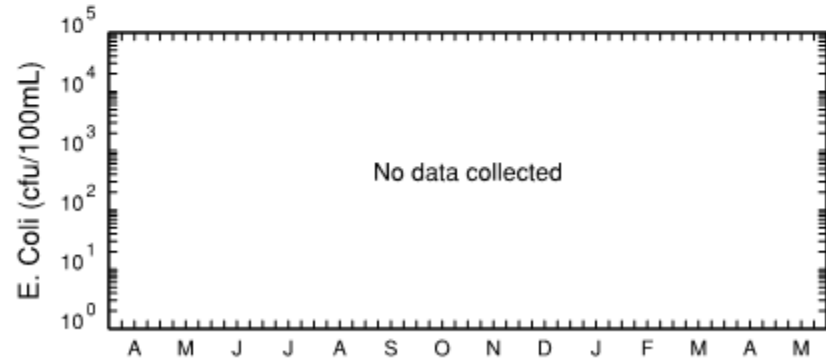
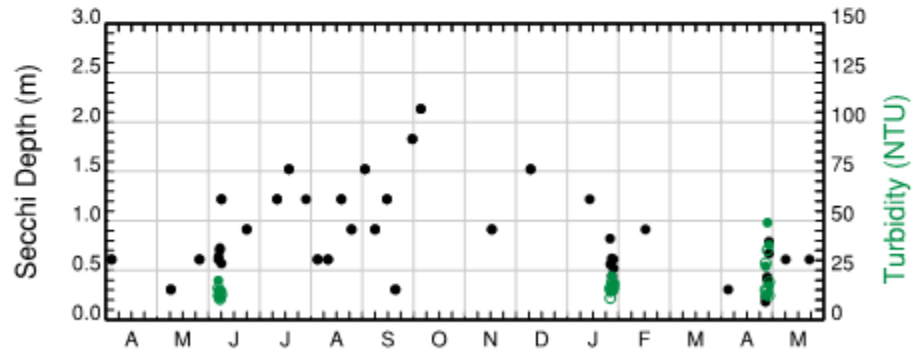
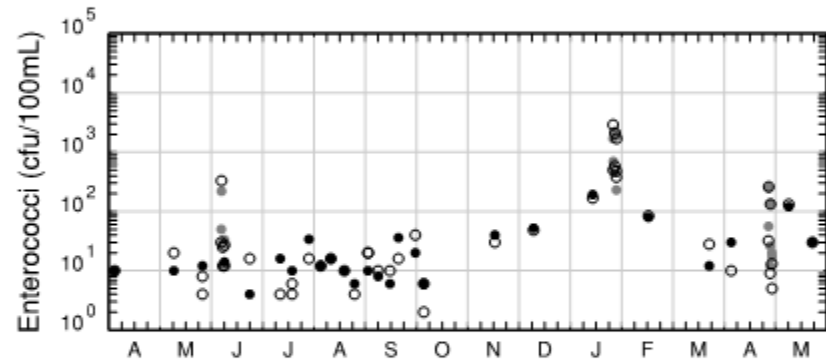
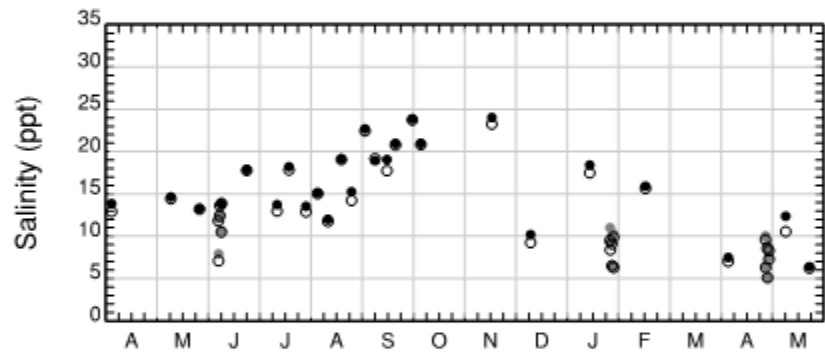
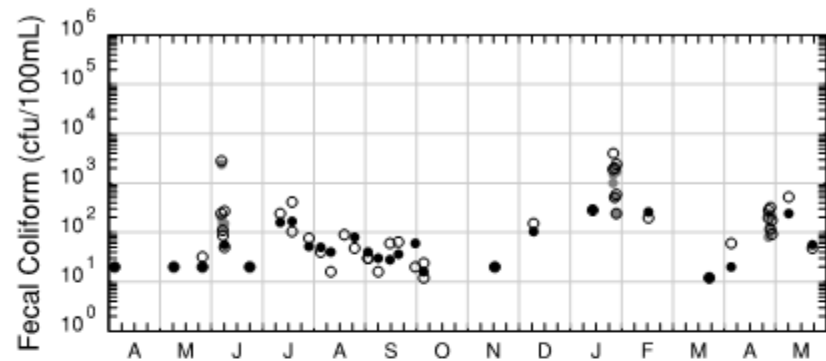
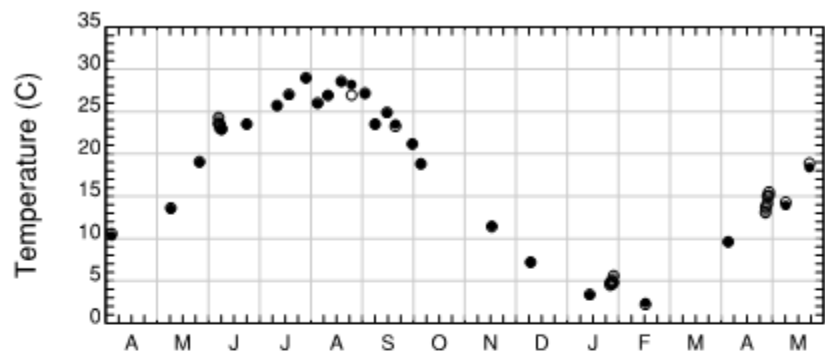


Time (Month)
2016 / 2017

Time (Month)
2016 / 2017

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- Bottom

Hackensack River & Tributaries, Hackensack River, 14, (SE2)

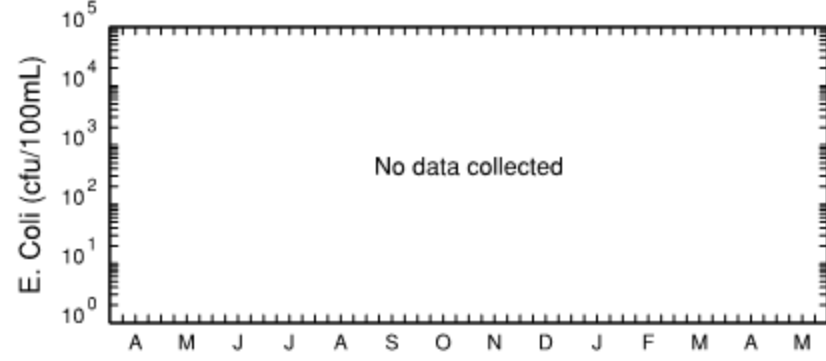
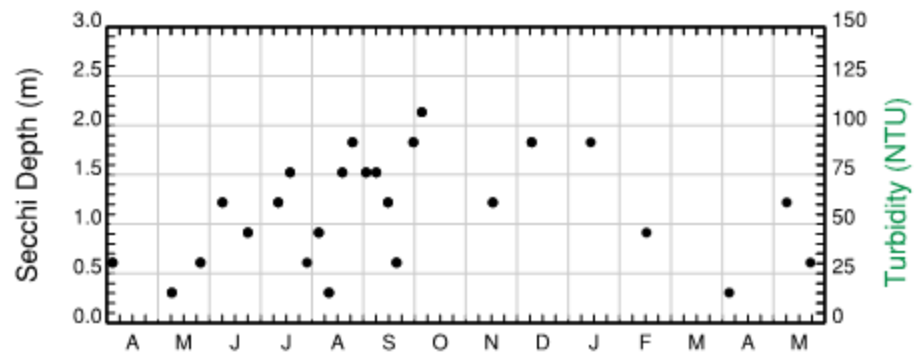
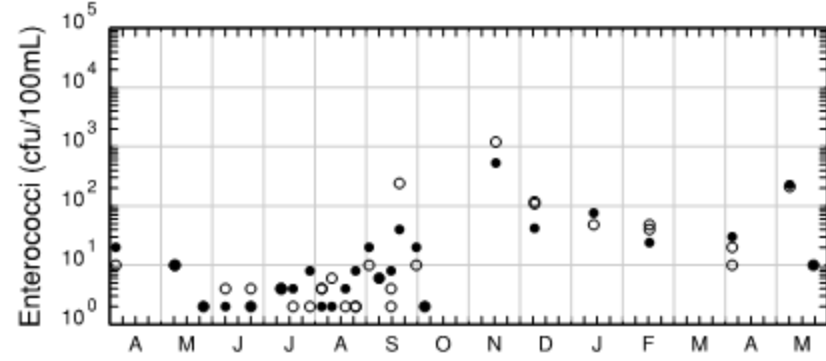
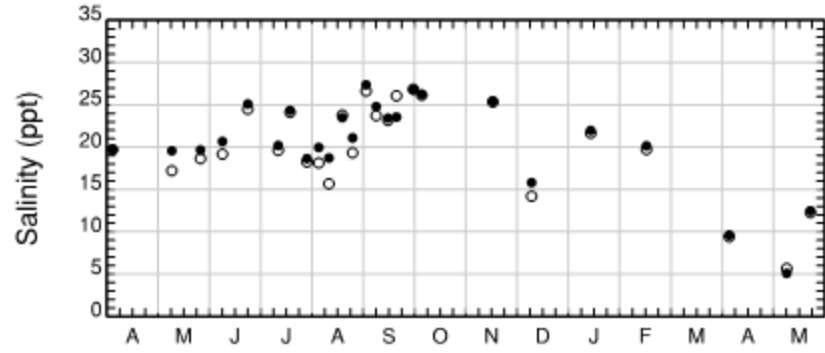
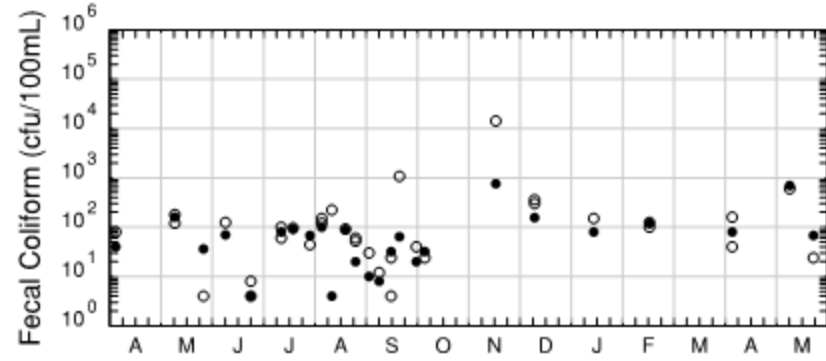
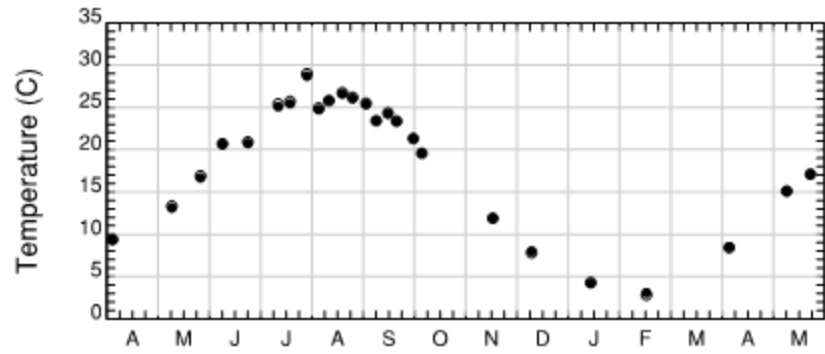


Time (Month)
2016 / 2017

Time (Month)
2016 / 2017

- Surface
- Mid-Depth
- Bottom

Hackensack River & Tributaries, Hackensack River, 16, (SE3)



Time (Month)
2016 / 2017

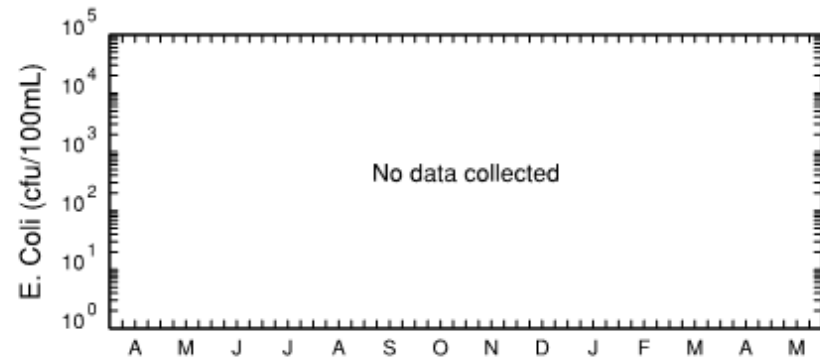
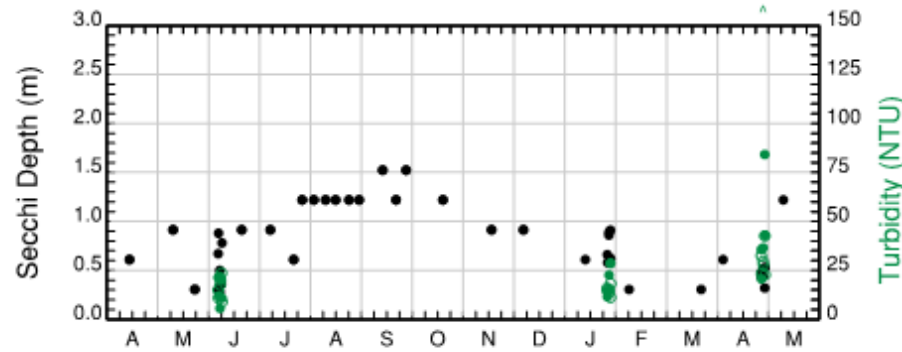
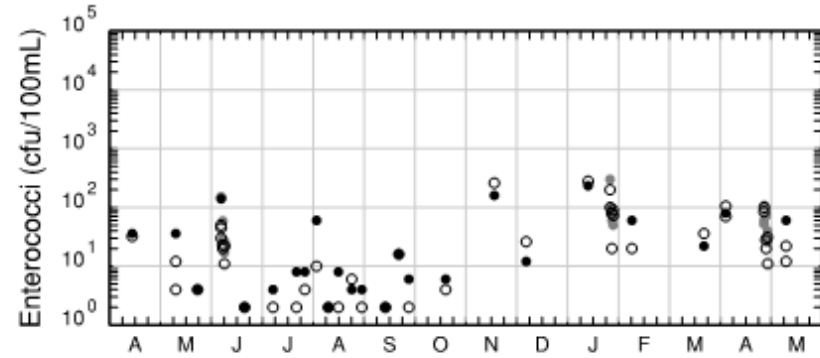
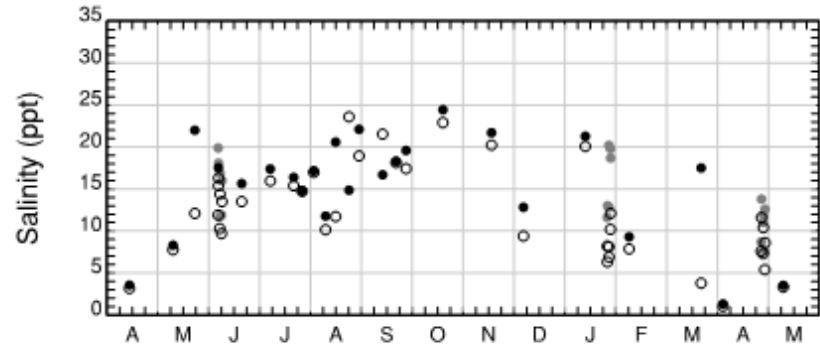
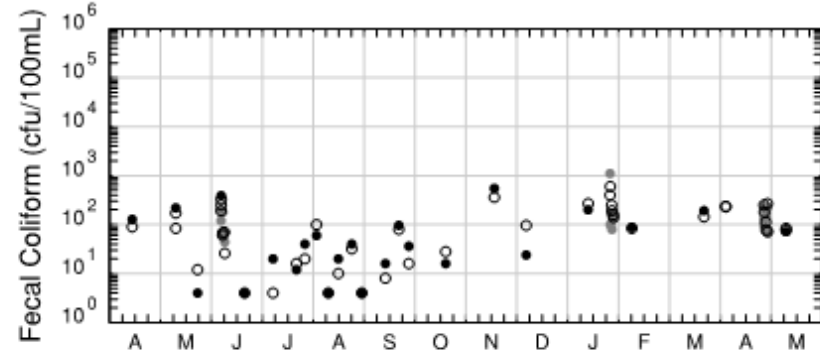
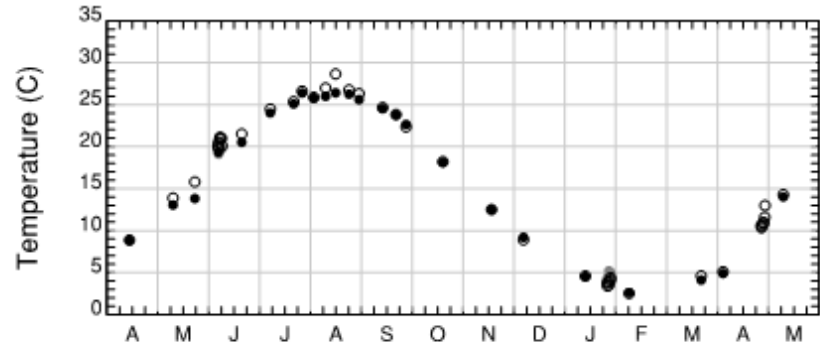
Time (Month)
2016 / 2017

- Surface
- Mid-Depth
- Bottom

Hudson River



Hudson River, Upper Bay, Hudson River, 31, (SE2)

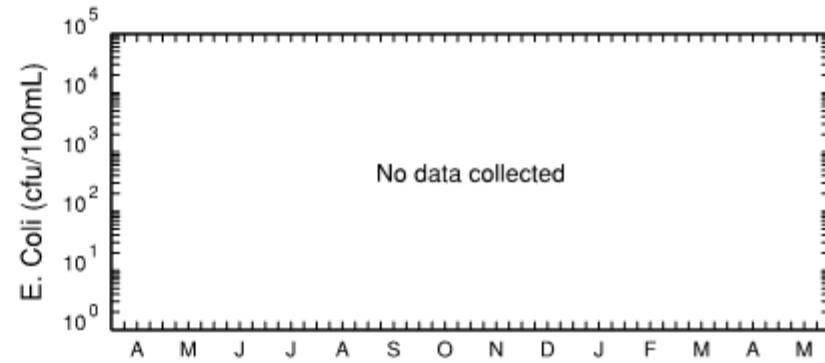
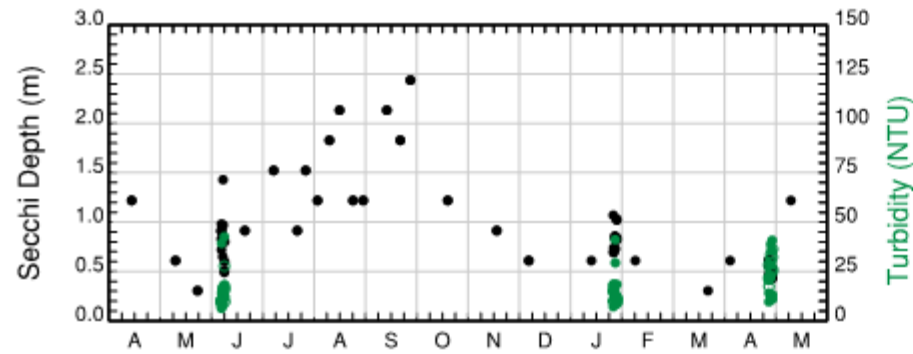
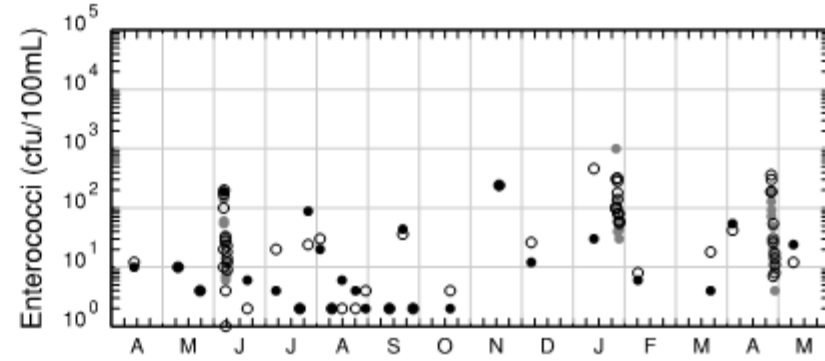
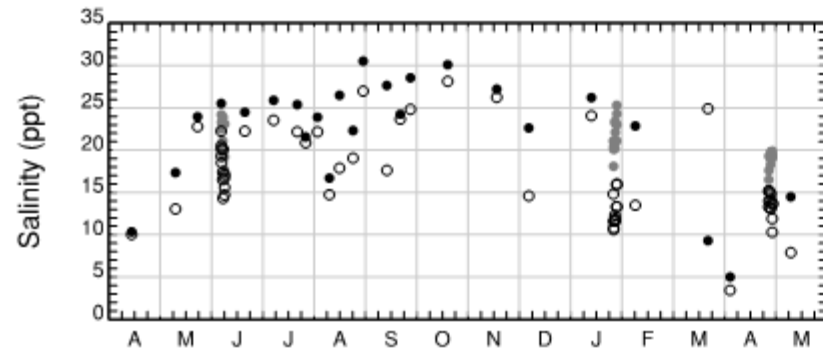
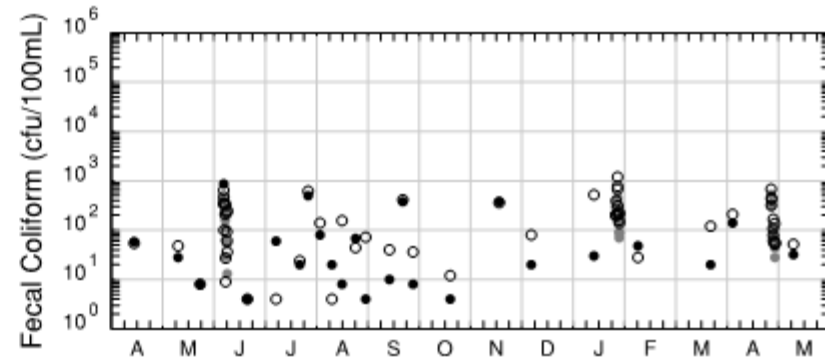
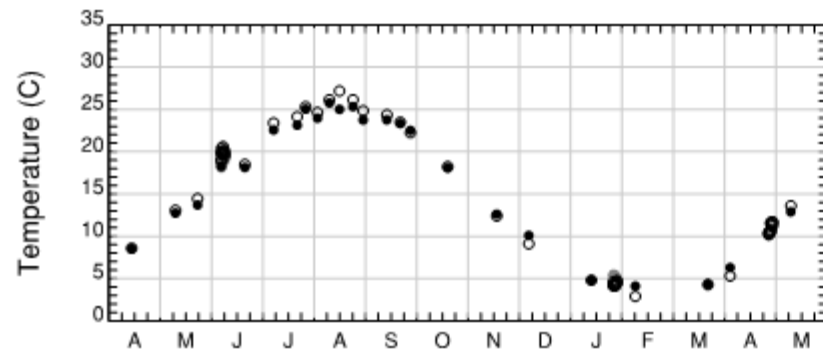


Time (Month)
2016 / 2017

Time (Month)
2016 / 2017

- Surface
- Mid-Depth
- Bottom

Hudson River, Upper Bay, Hudson River, 33, (SE2)

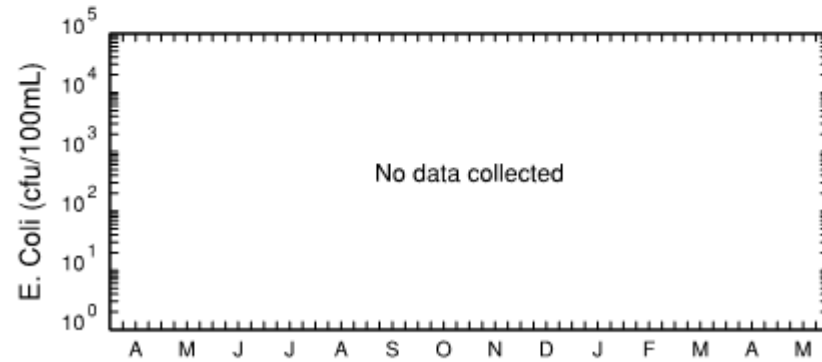
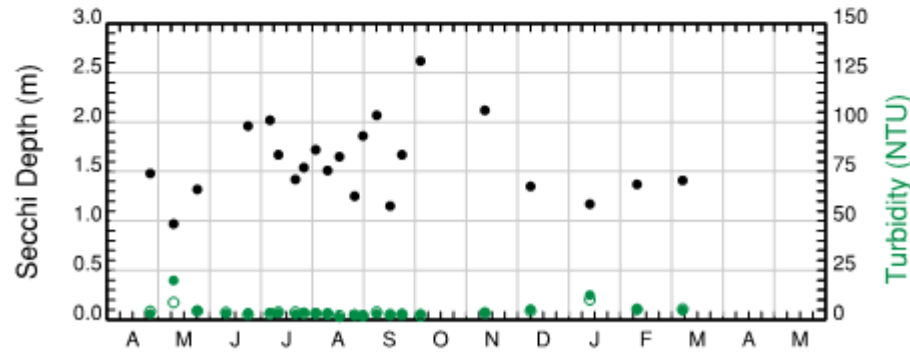
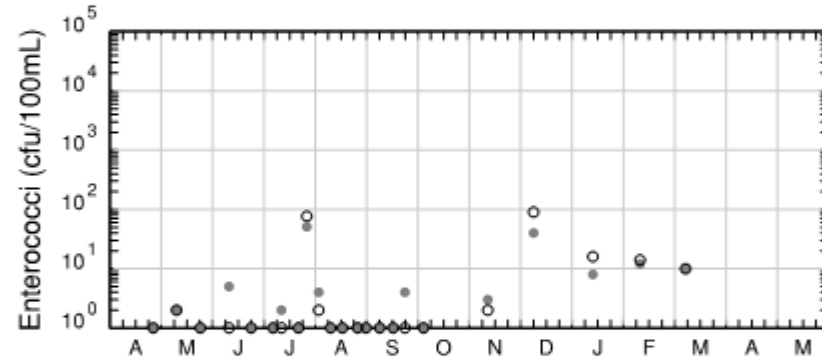
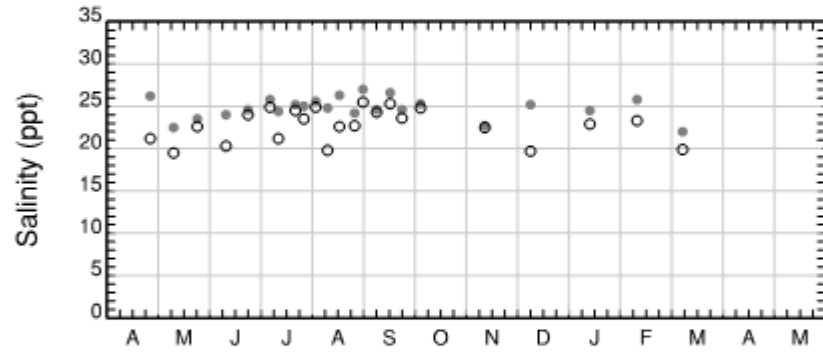
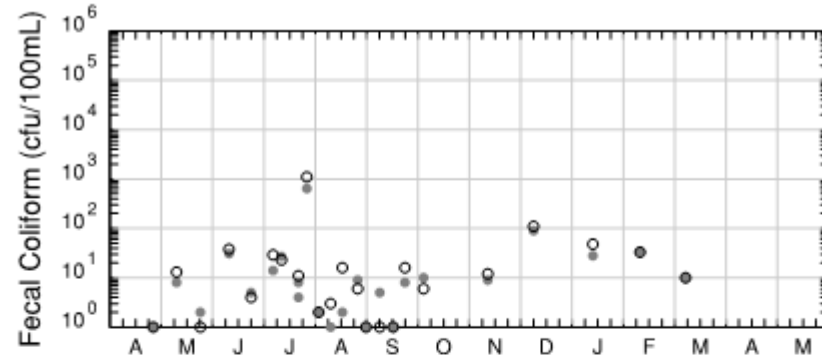
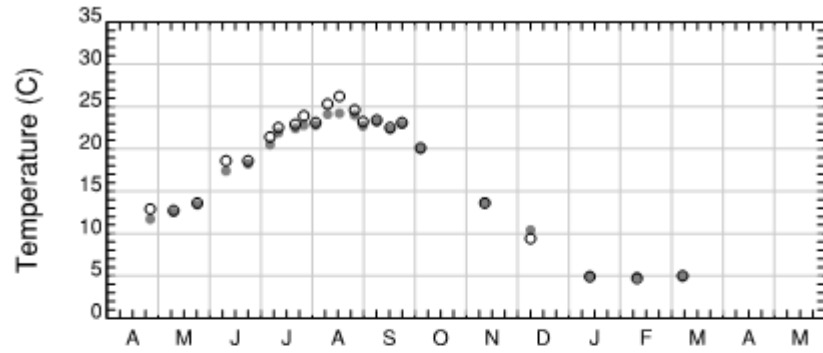


Time (Month)
2016 / 2017

Time (Month)
2016 / 2017

- Surface
- Mid-Depth
- Bottom

Hudson River, Upper Bay, Upper Bay, B21A, (SE2)



Time (Month)
2016 / 2017

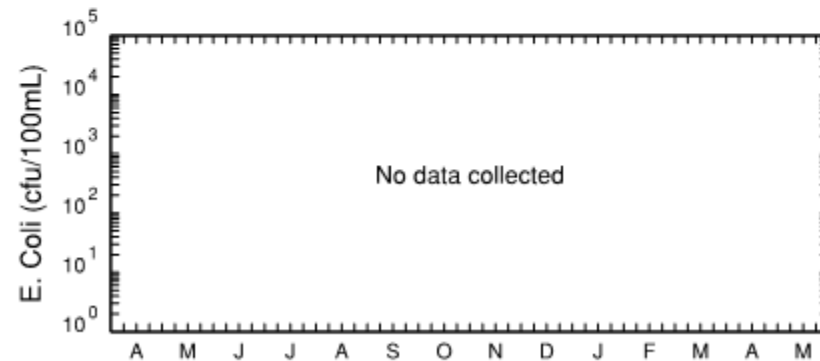
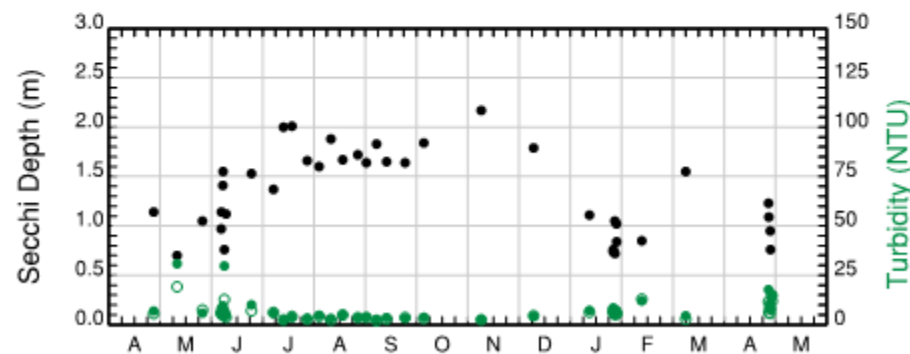
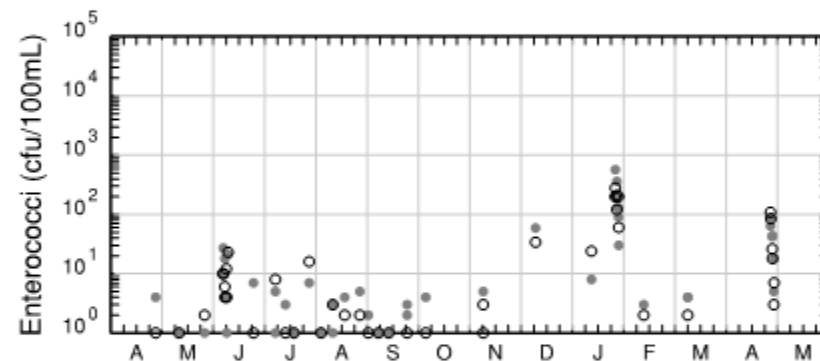
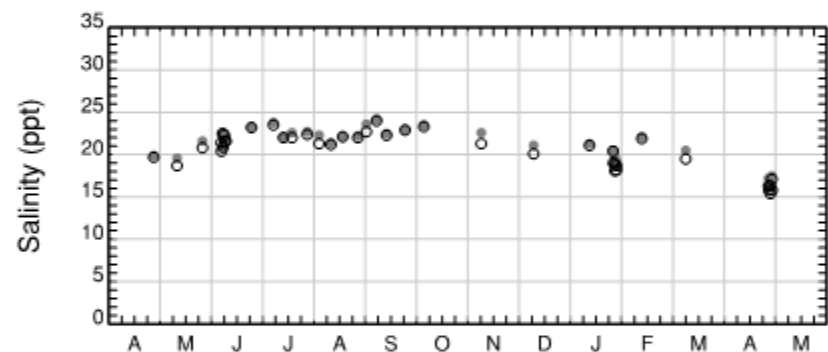
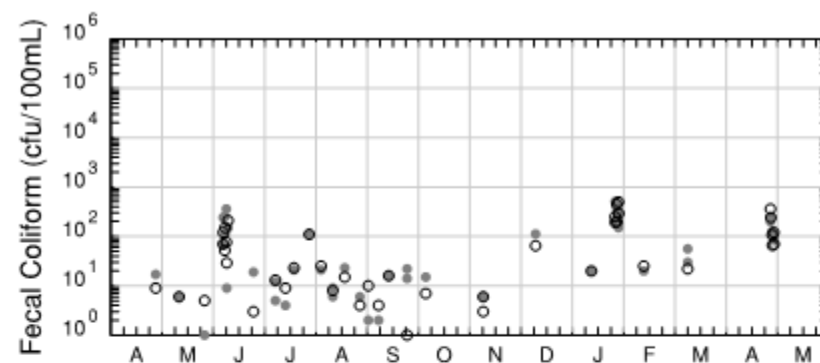
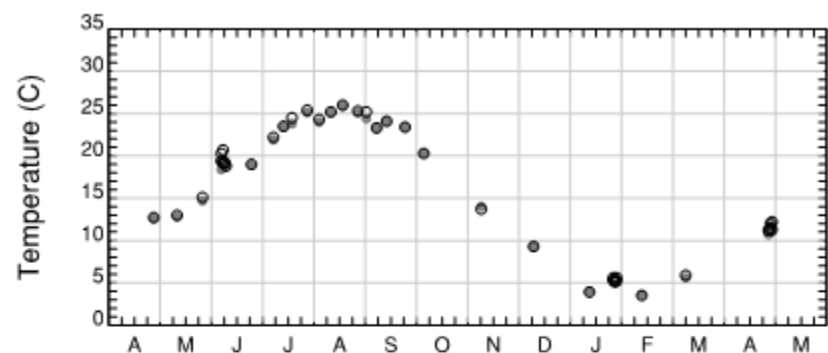
Time (Month)
2016 / 2017

- Surface
- ◐ Mid-Depth
- Bottom

Kill Van Kull



Hudson River, Upper Bay, Kill Van Kull, B12, (SE3)



Time (Month)
2016 / 2017

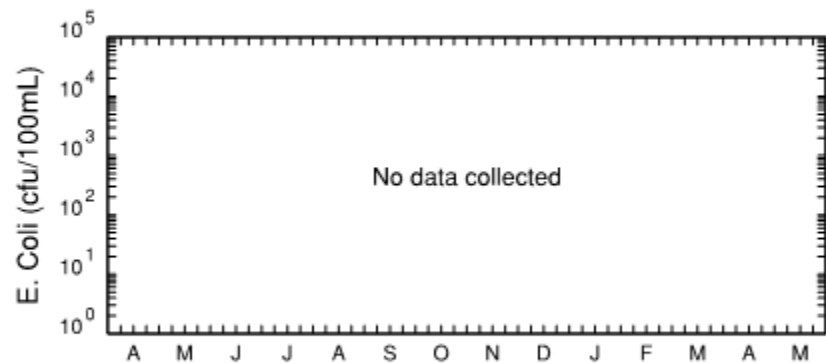
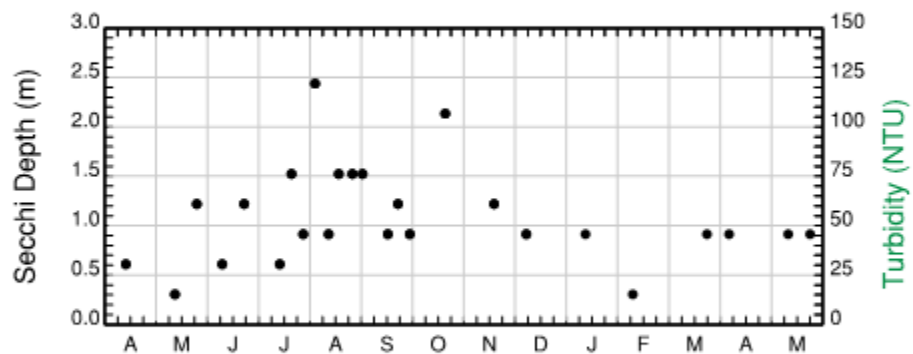
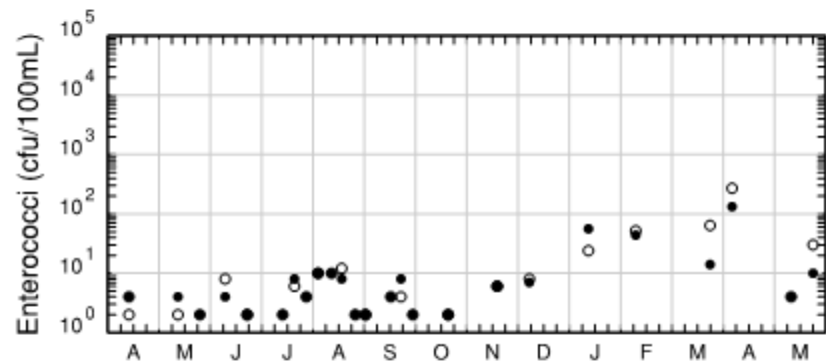
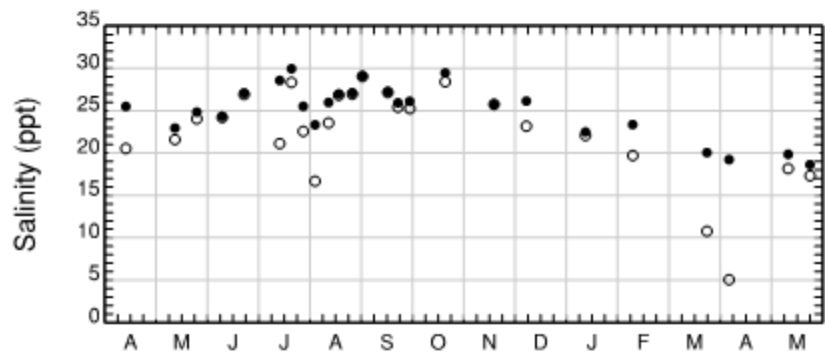
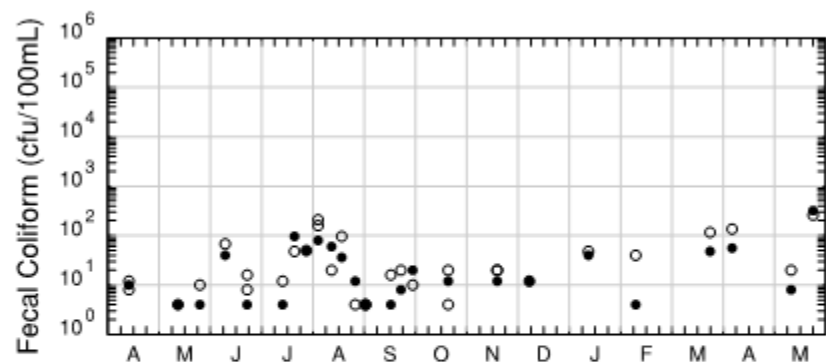
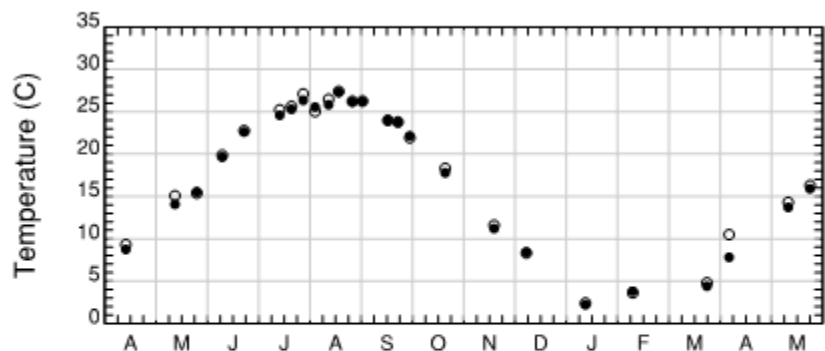
Time (Month)
2016 / 2017

- Surface
- Mid-Depth
- Bottom

Raritan River & Bay



Arthur Kill, Raritan River/Bay & Tributaries, Raritan Bay, 28, (Shellfish)



Time (Month)
2016 / 2017

Time (Month)
2016 / 2017

- Surface
- Mid-Depth
- Bottom

Summary/Conclusions

- Receiving water sampling program was successful
- Receiving water in rivers (Passaic, Hackensack, Elizabeth and Raritan) are more likely to have periods of non-attainment.
 - Stricter criteria
 - Less dilution
- Receiving water in more open waters (Newark Bay, Hudson River, Kills) have less likelihood of non-attainment.

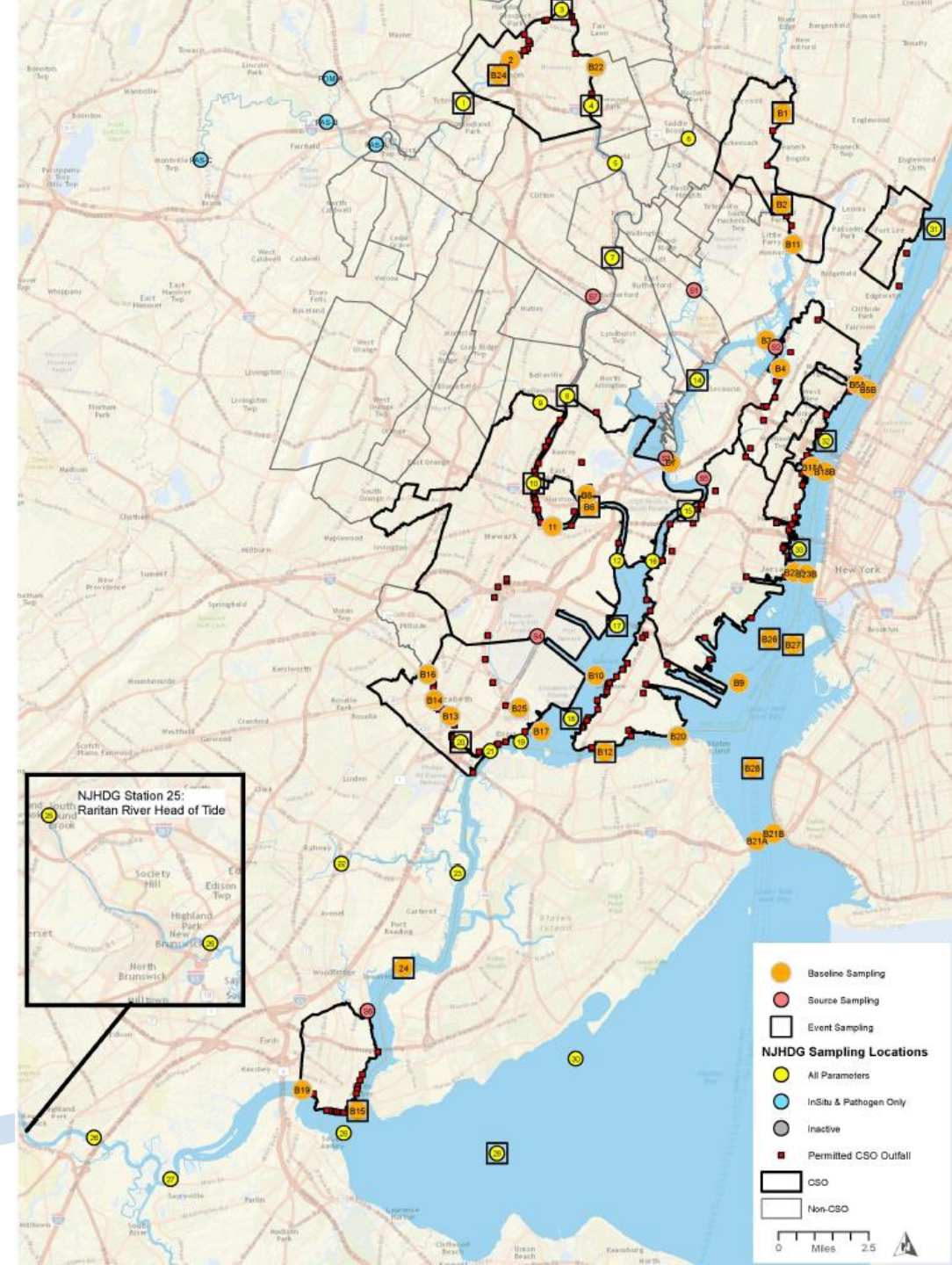


Overview of July 1st, 2018 Submissions to NJDEP



Baseline Compliance Monitoring Report

- Report is being drafted now
- Presents the data collected during the Baseline Compliance Monitoring Program
- Establishes existing in-stream water quality conditions
- Program and Report include the entire NJ CSO Group, beyond the PVSC service area



Public Participation Process Report

- Report is being drafted now
- Documents existing outreach efforts:
 - Supplemental CSO Team
 - Meetings with Municipal Action Groups
 - Meetings with Municipal Governments
 - CSO Notification System
 - Branding
 - Social Media
 - Other



Consideration of Sensitive Areas Information

- Report is being drafted now
- According to the National CSO Policy and the NJPDES Permits, Sensitive Areas include:
 - Outstanding National Resource Waters
 - National Marine Sanctuaries
 - Waters with threatened or endangered species and their habitat
 - Waters used for primary contact recreation
**(including but not limited to bathing beaches)*
 - Public drinking water intakes or their designated protection areas
 - Shellfish beds



By xwes12 (Hanging Rock State Park)



By Clement Bucco-Lechat



www.nps.gov/globa/learn/nature/russels-clams.htm



LTCP Requirements for Sensitive Areas

- Give highest priority to overflows discharging to sensitive areas:
 - Prohibit new or significantly increased overflows
 - Eliminate or relocate wherever physically possible and economically achievable
- Not everything can be a priority when affordability is a limiting factor



System Characterization Report

- Report is being drafted now
- Report Includes:
 - Detailed description of the combined sewer system
 - Precipitation, sewer flow, and water quality monitoring programs data
 - Overview of the receiving waters and identified pollutants of concern
 - Description of the Hydrologic and Hydraulic models
 - Overflow statistics based on model simulations



Timeline for Submittals and Supplemental CSO Team Input

Reports Posted to SCSO Team SharePoint
~1 Week After NJDEP Presentations

SCSO Team Meeting
April 17th

SCSO Team Meeting
~ July 10th



April

May

June

July

Presentations to NJDEP
Late May / Early June

Reports Submitted to NJDEP
July 1st

 Permit Due Date



Clean Waterways, Healthy Neighborhoods

Public Outreach



Social Media Platforms



The screenshot shows the Facebook page for 'Clean Waterways, Healthy Neighborhoods'. The page header includes the Facebook logo, the page name, and navigation links like 'Home' and 'Find Friends'. The main content area features a large blue and green wave graphic with the text 'CLEAN WATERWAYS Healthy Neighborhoods' in blue and green. Below this, there are interaction buttons for 'Like', 'Following', 'Recommend', and 'Send Message'. A post from the page is visible, dated March 22, 2018, at 11:43am. The post text reads: 'The next Supplemental CSO Team meeting will take place on Tuesday April 17th, 2018 beginning at 5:30 PM in Jersey City. We will be meeting in the Council Chambers at City Hall, which is located at 280 Grove Street. Parking is available in the municipal lot.' The left sidebar contains navigation options like 'Home', 'Posts', 'Reviews', 'Photos', 'About', 'Community', and 'Events', along with a 'Create a Page' button.

Facebook
@NJCleanWaterways



The screenshot shows the Twitter profile for @NJWaterways. The profile picture is a circular logo with a green city skyline and blue waves. The bio reads: 'The Clean Waterways, Healthy Neighborhoods initiative aims to reduce the impact of combined sewer overflows into area receiving waters. Follow us to learn more!'. The page shows 3 tweets, 13 following, and 20 followers. A tweet from March 22 is visible, stating: 'Approximately 722 cities in the US have combined sewers. 21 of these cities are in New Jersey. Over the next several years, these 21 cities and their sewage treatment plants will develop Long Term Control Plans to evaluate ways to reduce CSO impacts!'. Below the tweet is a link to 'NJDEP Combined Sewer Overflows Web Application' with a map thumbnail and the URL 'njdep.maps.arcgis.com'. A 'Tweet to NJCleanWaterways' button is also present.

Twitter
@NJWaterways



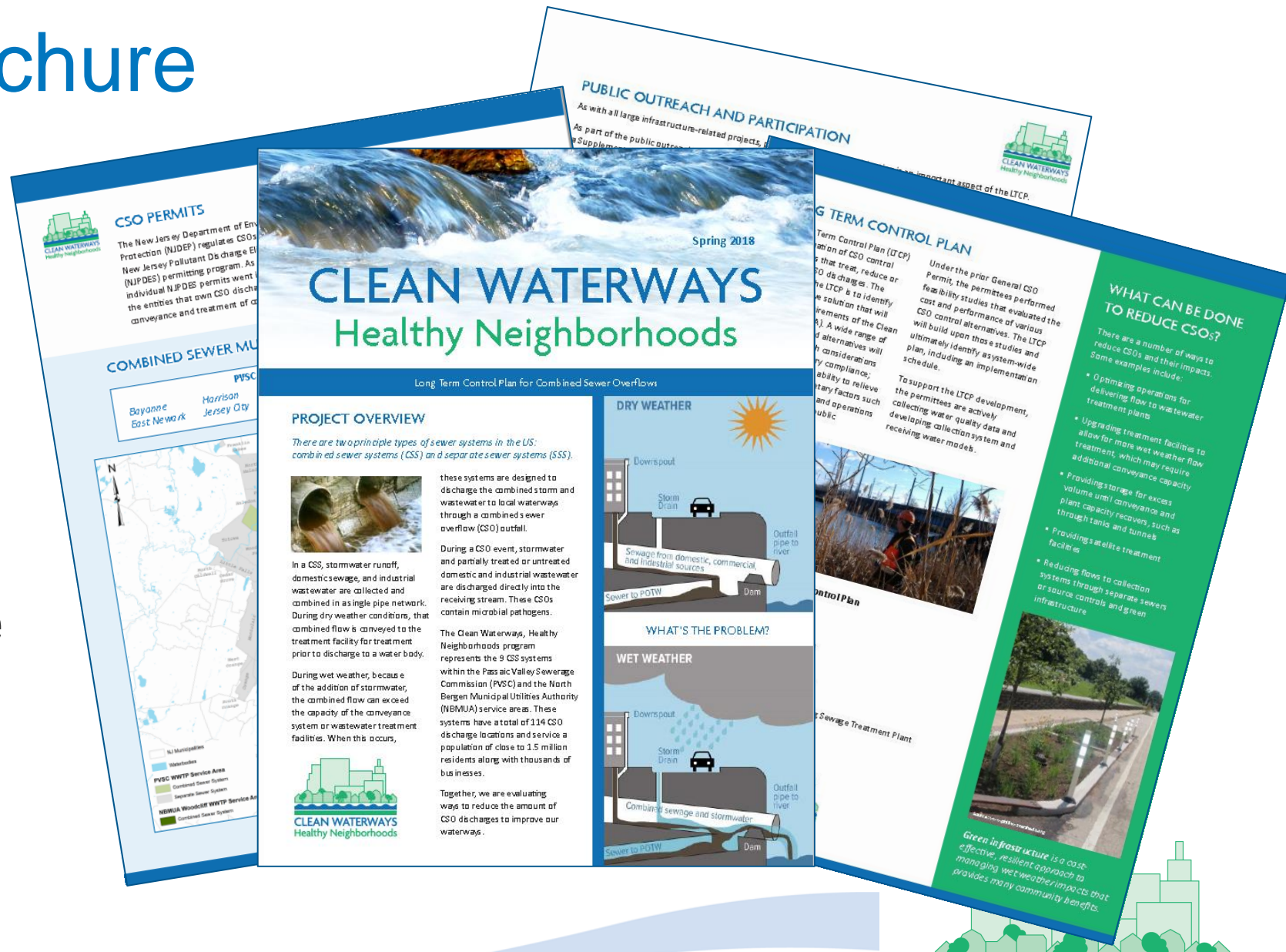
Educational Fact Sheets

- Three Fact Sheets
 - Downspout Disconnection
 - What is Green Infrastructure?
 - Controlling CSOs with Sewer Separation
- Available in English, Spanish, and Portuguese

The image displays three overlapping educational fact sheets from the 'CLEAN WATERWAYS Healthy Neighborhoods' program. The top sheet is titled 'Downspout Disconnection' and features a diagram comparing a 'Downspout Connected to the Sewer System' (where runoff goes directly to a combined sewer) with a 'Downspout Disconnected' (where runoff infiltrates the ground). It includes text explaining that this practice can reduce combined sewer overflow (CSO) and mentions that in older cities, combined sewers often carry both sewage and stormwater. The middle sheet is titled 'WHAT IS GREEN INFRASTRUCTURE?' and defines GI as practices that manage stormwater using natural processes like infiltration and evaporation. It lists benefits such as improved water quality, reduced runoff, and enhanced public space. It also lists examples of GI like rain gardens, porous pavement, trees, and tree boxes. The bottom sheet is titled 'Controlling CSOs with Sewer Separation' and explains that separating sanitary and stormwater into different pipes can prevent CSOs. It notes that while separation is disruptive and costly, it is a long-term solution. It includes a diagram showing a 'combined sewer system' where both sewage and stormwater share a pipe, leading to CSOs, and a 'separated sewer system' where they are kept apart. A URL for more information is provided: www2.epa.gov/watersheds/gi.

Informational Brochure

- Provides information on the Clean Waterways, Healthy Neighborhoods initiative
- Available in English, Spanish, and Portuguese



Right-of-Way Green Infrastructure Pilot Projects



Right-of-Way Green Infrastructure Pilot Projects

- Up to three pilot projects being funded by PVSC
 - Sites have been selected in Jersey City and Newark
 - Identifying a third pilot project location
- Will be used to educate the public and to assist the permittees



Newark City Hall Pilot – Franklin Street



Franklin Street Existing Conditions and Renderings



Jersey City Pilot – Columbia Park (Winfield Ave)

Preliminary Drainage Calculation:

- Bioswale A
 - 400' x 14' impervious roadway area = 5,600 sf
 - 400' x 14' impervious sidewalk area = 5,600 sf
 - **Total Impervious Drainage Area = 11,200 sf**



LEGEND:

- GI Practice
- Drainage Area Boundary
- Flow Direction Arrow
- Existing Catch Basin

Winfield Ave

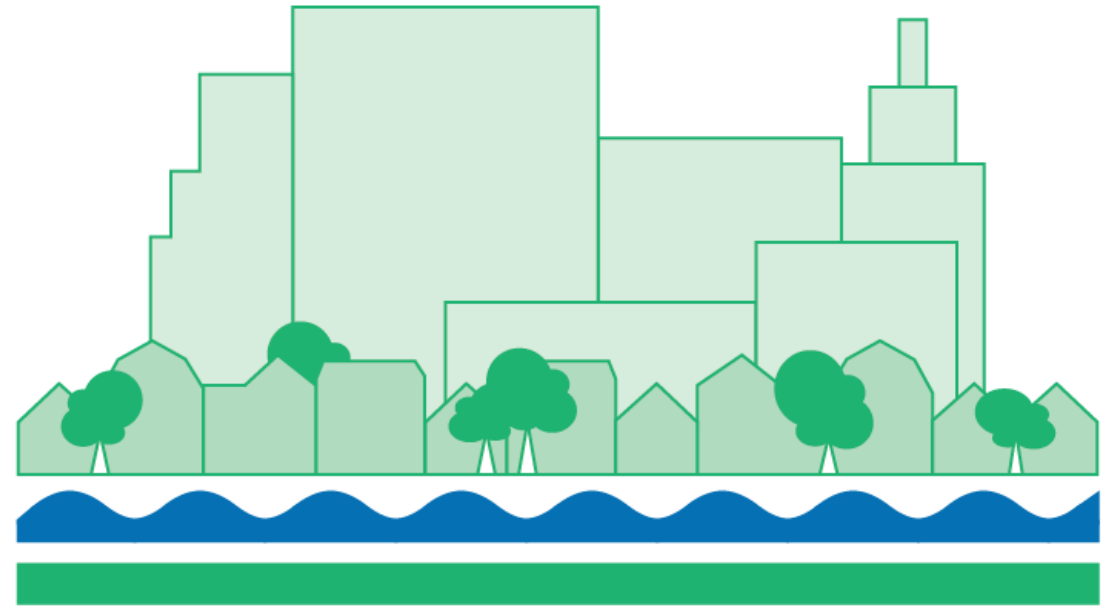
Columbia Park Existing Conditions



Columbia Park GI Pilot Rendering



Questions and Final Discussion



CLEAN WATERWAYS
Healthy Neighborhoods