STATE OF NEW HAMPSHIRE

2014 305(b) Category 4A, 4B, and 4C Impairments Not Included in the 2016 305(b) Report

November 30, 2017

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

STATE OF NEW HAMPSHIRE

2014 305(b) Category 4A, 4B, and 4C Impairments Not Included in the 2016 305(b) Report

STATE OF NEW HAMPSHIRE
DEPARTMENT OF ENVIRONMENTAL SERVICES
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NOVEMBER 30, 2017

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TABLE OF CONTENTS

Introduction **5**
Bacteria – Beaches (Primary Contact recreation [i.e. Swimming]) **6**
MOORES POND - MOORES POND SKI AND BEACH (NHLAK600020604-03-02) 6
LOVELL POND BEACH (NHLAK600030401-01-02) 7
LONG POND - LONG POND TOWN BEACH (NHLAK700061205-02-02) 9
WEARE RESERVOIR - CHASE PARK TOWN BEACH-HORACE LAKE (NHLAK700060601-05-02) 11
STONY BROOK - TOWN BEACH (GOSS PARK) (NHRIV700060903-16-02) 13
ATLANTIC OCEAN – WALLIS SANDS BEACH AT WALLIS ROAD (NHOCN000000000-02-04) 15
ATLANTIC OCEAN –CABLE BEACH (NHOCN000000000-02-05) 17
ATLANTIC OCEAN - JENNESS BEACH (NHOCN000000000-02-07) 19
ATLANTIC OCEAN - BASS BEACH (NHOCN000000000-03-02) 21
HAMPTON/SEABROOK HARBOR - SEABROOK HARBOR BEACH (NHEST600031004-09-05) 23
Bacteria – Non-Beaches (Primary Contact recreation [i.e. Swimming]) **25**
UPPER LITTLE BAY (NHEST600030904-06-19) 25
COCHECO RIVER - CENTRAL AVE DAM (NHIMP600030608-04) 27
MERRIMACK RIVER - GARVINS FALLS DAM (NHIMP700060302-07) 29
BAKER RIVER (NHRIV700010303-09-01) 31
BAKER RIVER (NHRIV700010303-12) 33
UNNAMED BROOK - TO LOON LAKE (NHRIV700010307-13) 35
Dissolved Oxygen (Aquatic Life Use Support) **36**
NUTTS POND (NHLAK700060803-01) 36
SALMON FALLS RIVER-ROLLINSFORD DAM (NHIMP600030406-03) 38
Chlorophyll-a/Total Phosphorus (Aquatic Life Use Support) **41**
HARVEY LAKE (NHLAK700060502-05) 41
PEARLY POND (NHLAK802020103-08) 43
BABOOSIC LAKE (NHLAK700060905-01-01) 44
Chlorophyll-a (Primary Contact recreation [i.e. Swimming]) **47**
BABOOSIC LAKE (NHLAK700060905-01-01) 47
pH (Aquatic Life Use Support) **48**
RUST POND (NHLAK700020101-07-01) 48
CHASE POND (NHLAK700030402-01) 50
ROCK POND (NHLAK700061204-03) 51
Invasive Aquatic Algae (Aquatic Life Use Support) **52**
NINE WATERBODIES 52
Non-Native Aquatic Plants (Aquatic Life Use Support) **53**

PEMIGEWASSET LAKE (NHLAK700010801-01) 53

Fecal Coliform (Shellfishing Use Support) 53

WITCH CREEK (NHEST600031002-01-01) 53

UPPER SAGAMORE CREEK (NHEST600031001-03) 54

WWTFs currently in "significant non-compliance" – Ammonia 54

CONTOOCOOK RIVER - UNNAMED BROOK (NHRIV700030101-16) 54

WWTFs currently in "significant non-compliance" - Biochemical Oxygen Demand (BOD) 55

LOWER PISCATAQUA RIVER - SOUTH (NHEST600031001-02-02) 55

WWTFs currently in "significant non-compliance" – Copper 55

CONTOOCOOK RIVER - UNNAMED BROOK (NHRIV700030101-16) 56

AMMONOOSUC RIVER (NHRIV801030403-16) 56

Introduction

In accordance with Section 303(d) of the federal Clean Water Act, States must prepare a list of impaired waters that require a Total Maximum Daily Load study every two years (i.e., the 303(d) List). The last approved 303(d) List was prepared by the New Hampshire Department of Environmental Services (NHDES) in 2012. A final of the 2014 Section 303(d) List of impaired waters was submitted to the US Environmental Protection Agency (USEPA) on March 27, 2017. Downloadable copies of the past list as well as the 303(d) 2016 list are available on the NHDES website for review (http://des.nh.gov/organization/divisions/water/wmb/swqa/index.htm). This document provides a list of all surface waters and parameter combinations that were removed from categories 4A, 4B, or 4C impairments on the 2016 305(b) and the reasons why they were removed.

Assessment outcomes cover a spectrum from very good to very bad coded as an alpha numeric scale that provides additional distinctions in cases where an impairment exists. In each of the new impairments detailed within this document the 2014 and 2016 assessment status is highlighted applying the categories in the table below.

		Severe Not Supporting, Severe	**Poor** Not Supporting, Marginal	**Likely Bad** Insufficient Information – Potentially Not Supporting	**No Data** No Data	**Likely Good** Insufficient Information – Potentially Full Supporting	**Marginal** Full Support, Marginal	**Good** Full Support, Good
CATEGORY	**Description**							
*Category 2	Meets standards						2-M or 2-OBS	2-G
Category 3	Insufficient Information			3-PNS	3-ND	3-PAS		
Category 4	Does not Meet Standards;							
4A	TMDL Completed	4A-P	4A-M or 4A-T					
4B	Other enforceable measure will correct the issue.	4B-P	4B-M or 4B-T					
4C	Non-pollutant (i.e. exotic weeds)	4C-P	4C-M					
Category 5	TMDL Needed	5-P	5-M or 5-T					

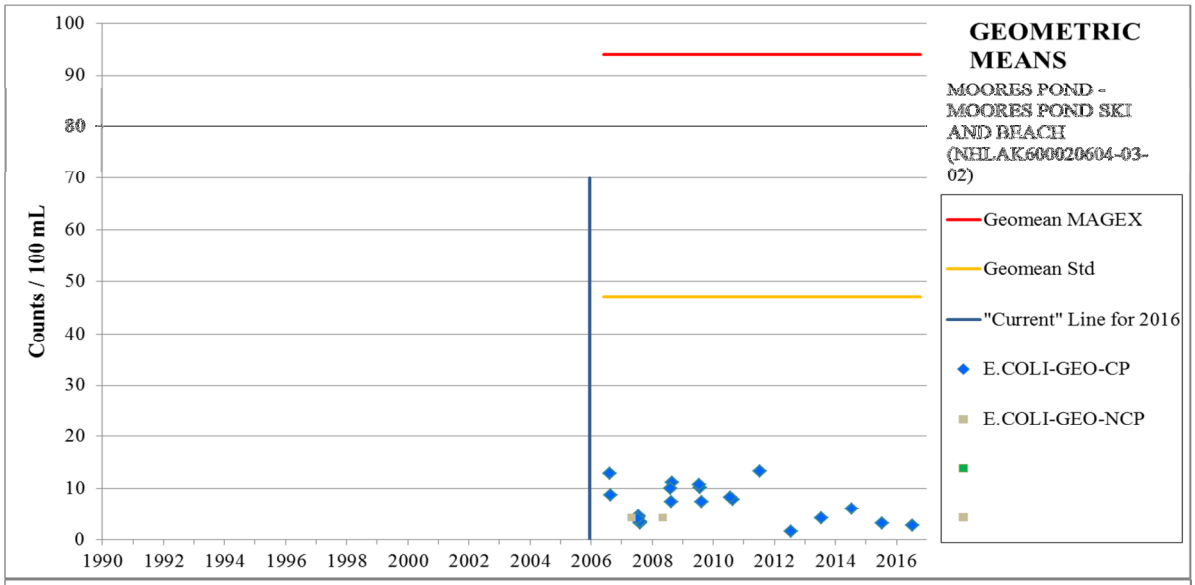
* “Category 1” only exists at the Assessment Unit Level.

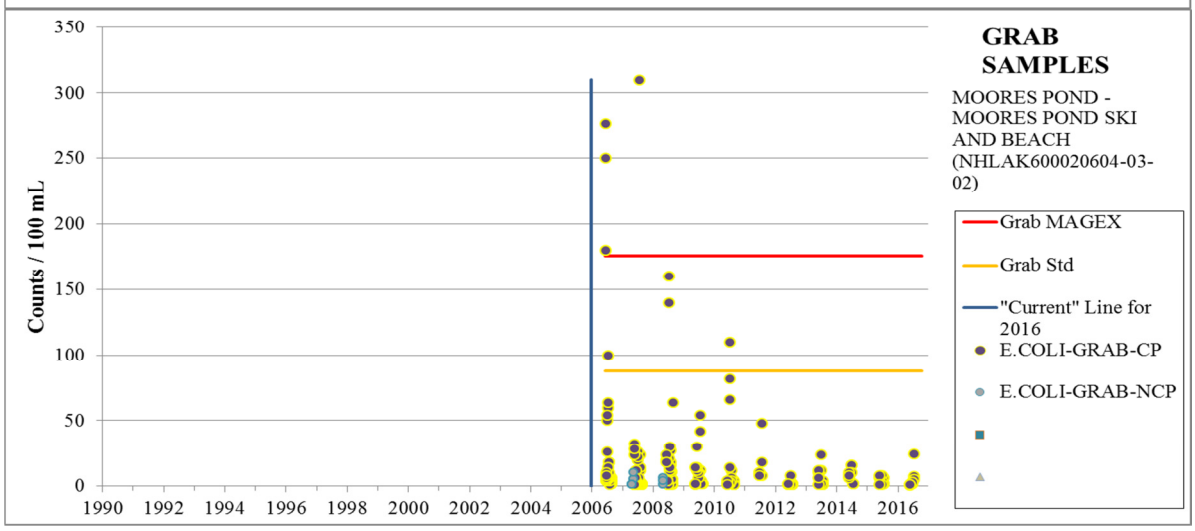
Bacteria – Beaches (Primary Contact recreation [i.e. Swimming])

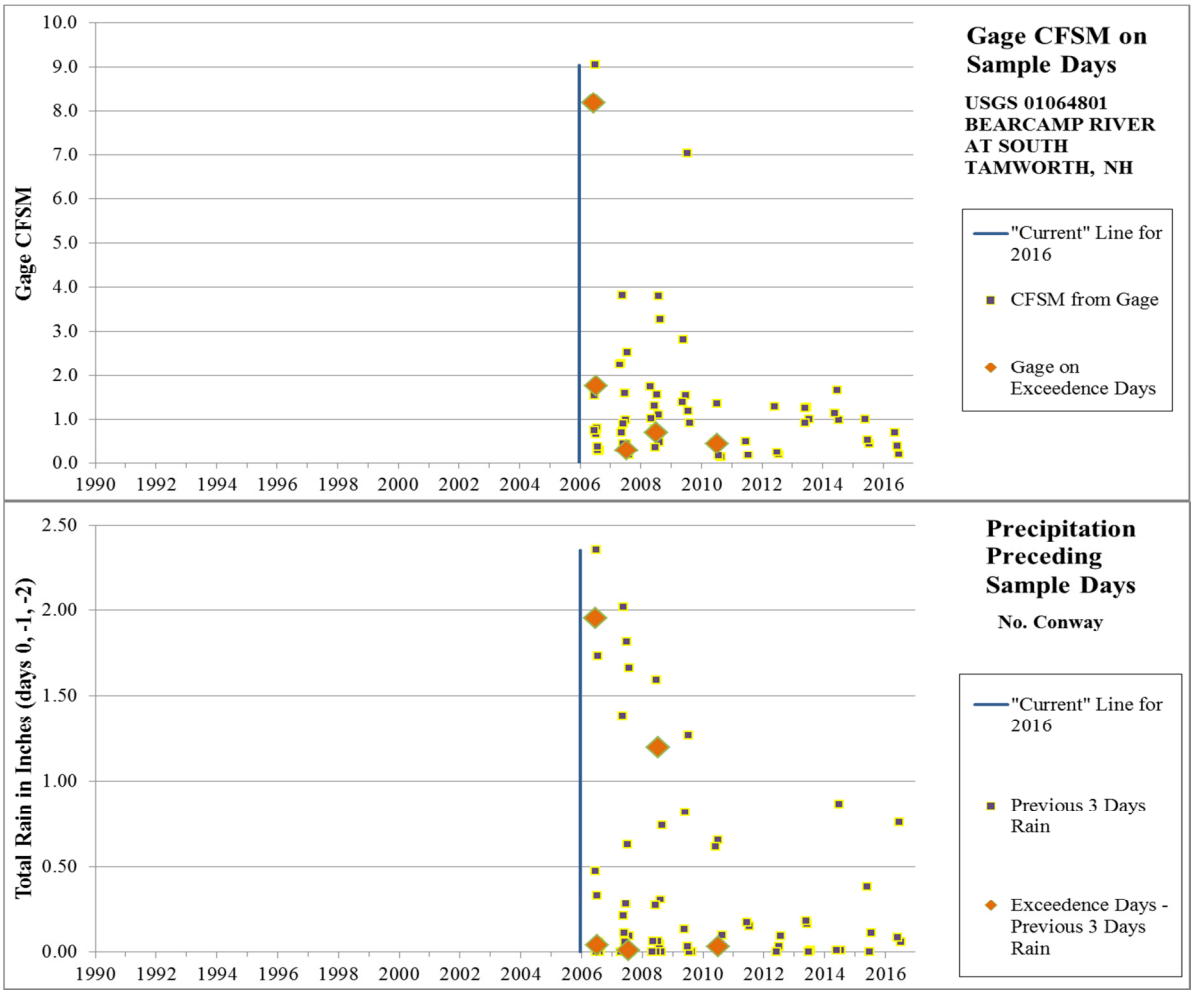
MOORES POND - MOORES POND SKI AND BEACH (NHLAK600020604-03-02)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
MOORES POND - MOORES POND SKI AND BEACH	NHLAK600020604-03-02	*Escherichia coli*	Tamworth	4A-P	2-M

2016: The data show a steady decrease in *E. coli* since 2006, even when rainfall and gage were increasing. All geometric means were well below standards, though there were four grab samples above the MAGEX, three sampled on June 27, 2006, and one from 2007. The trend of bacteria detected from grab samples has been well below thresholds since 2011.







(flow and weather comparisons were done for two locations: Saco River and North Conway vs. Bearcamp River at Tamworth and Lakeport 2)

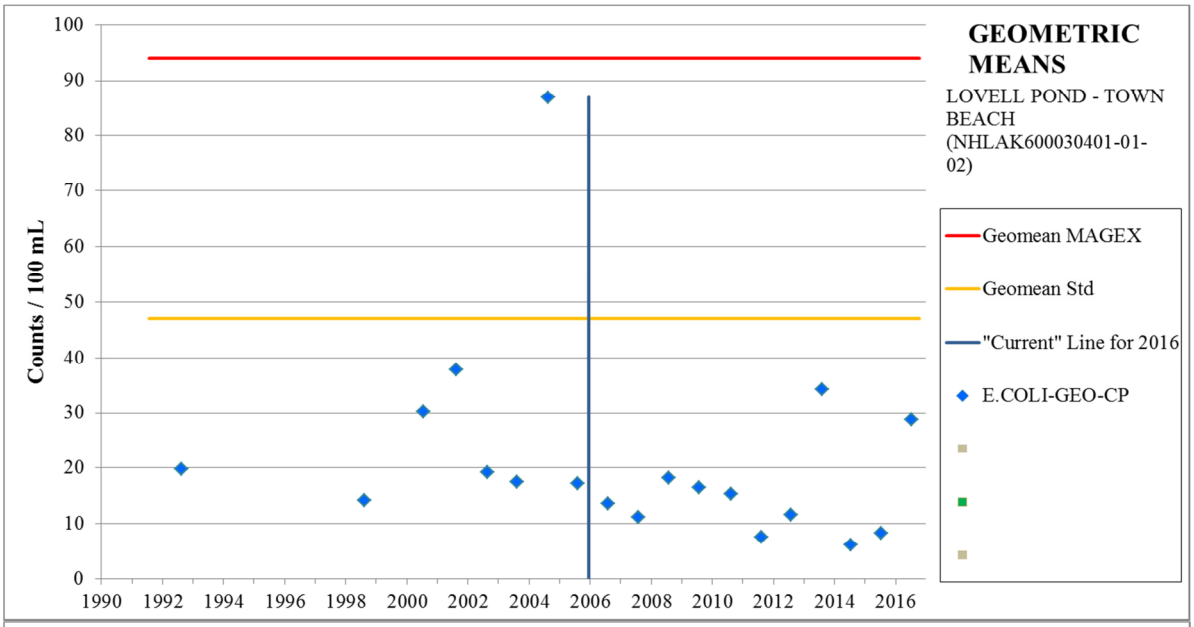
Notes:

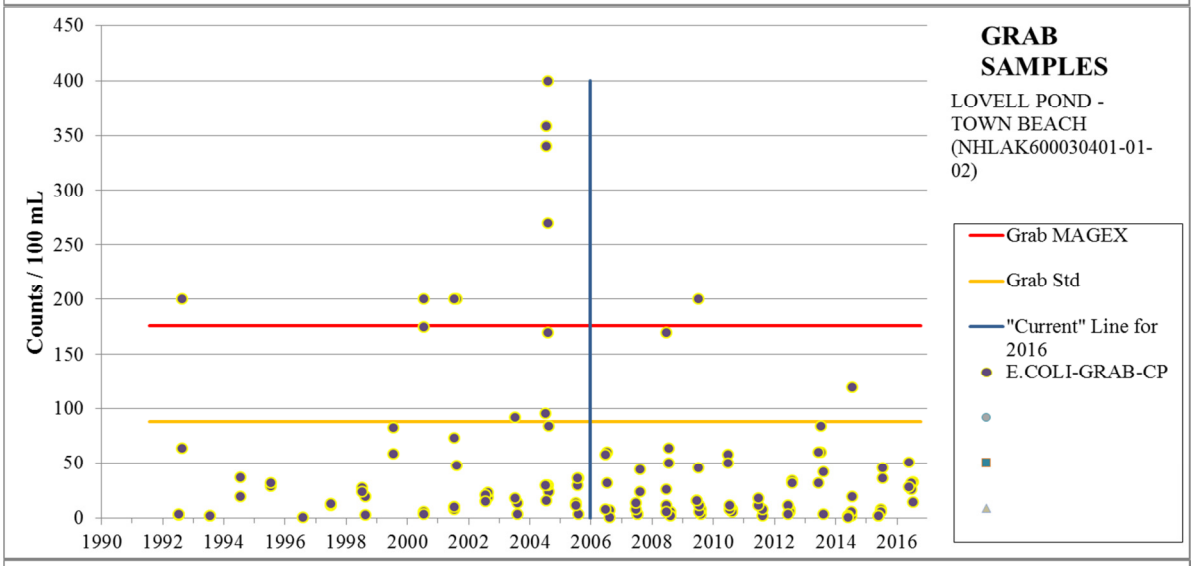
E. COLI-GEO-CP = *Escherchia coli* geometric mean calculated from samples collected during the summer critical period.
E. COLI -GEO-NCP = *Escherchia coli* geometric mean calculated from samples collected outside the summer critical period.
E. COLI -GRAB-CP = *Escherchia coli* grab samples collected during the summer critical period.
E. COLI -GRAB-NCP = *Escherchia coli* grab samples collected outside the summer critical period.
"Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current". Available older data is provided for context. See the 2016 CALM for additional details.

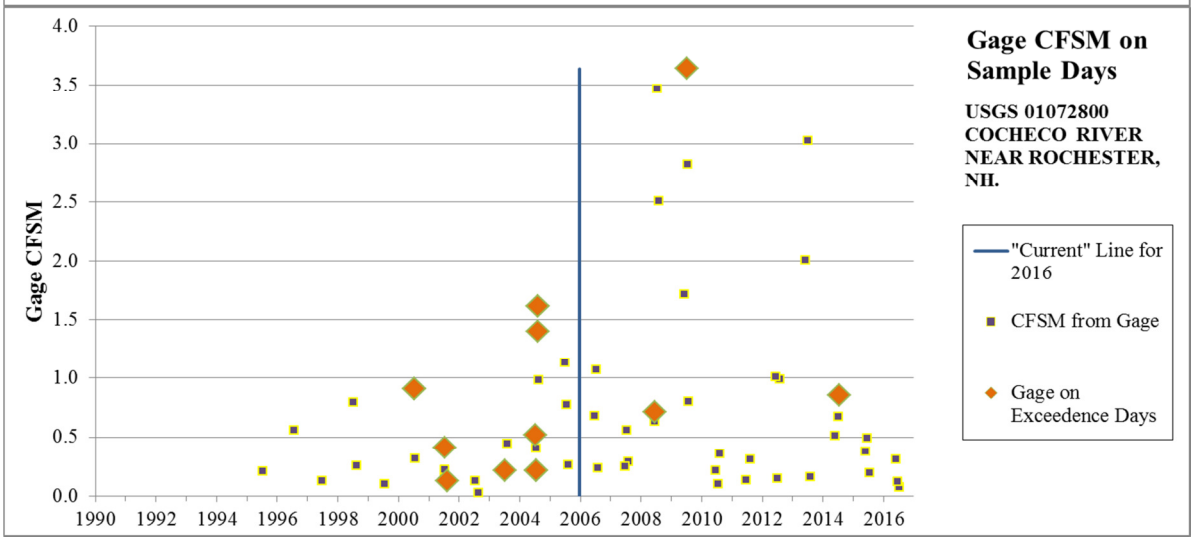
LOVELL POND BEACH (NHLAK600030401-01-02)

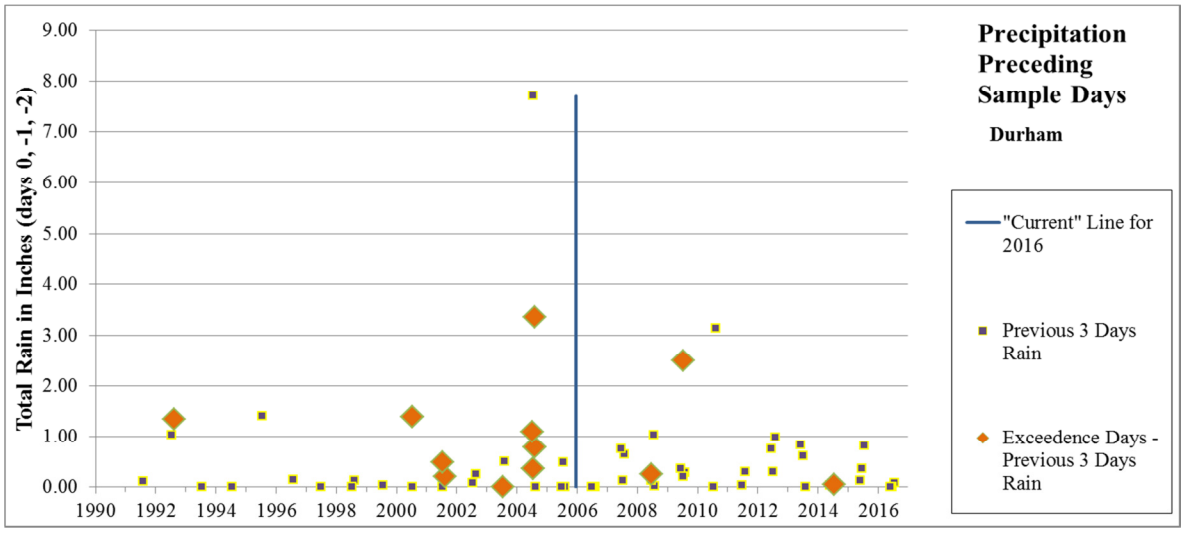
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
Lovell Pond Town Beach	NHLAK600030401-01-02	*Escherichia coli*	Wakefield	4A-M	2-M

2016: There have not been any geometric mean exceedences in the past 10 years for this assessment unit. Only two grab samples were above the criteria (occurring in 2008 and 2014) and one grab sample exceeded the MAGEX threshold (2009). Both the flow and preceding precipitation conditions were not especially elevated during these times. Further, those conditions have been repeated with minimal exceedences.


GEOMETRIC MEANS
LOVELL POND - TOWN BEACH (NHLAK600030401-01-02)
Counts / 100 mL
Geomean MAGEX
Geomean Std
"Current" Line for 2016
E.COLI-GEO-CP


GRAB SAMPLES
LOVELL POND - TOWN BEACH (NHLAK600030401-01-02)
Counts / 100 mL
Grab MAGEX
Grab Std
"Current" Line for 2016
E.COLI-GRAB-CP


Gage CFSM on Sample Days
USGS 01072800 COCHECO RIVER NEAR ROCHESTER, NH.
Gage CFSM
"Current" Line for 2016
CFSM from Gage
Gage on Exceedence Days



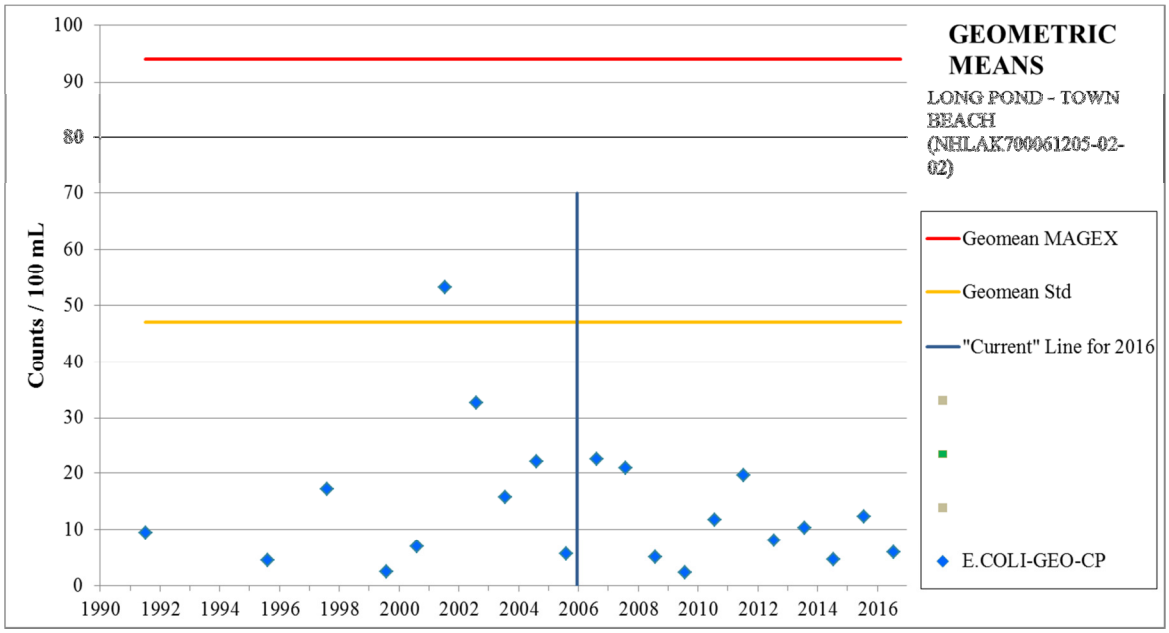
Notes:

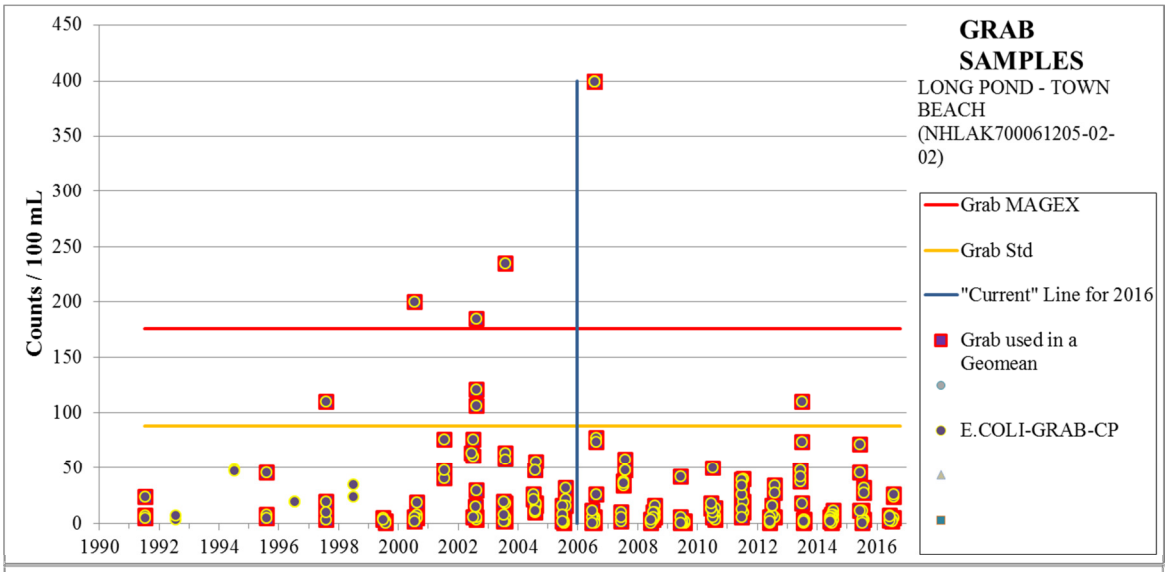
E. COLI-GEO-CP = *Escherchia coli* geometric mean calculated from samples collected during the summer critical period.
E. COLI -GRAB-CP = *Escherchia coli* grab samples collected during the summer critical period.
"Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current". Available older data is provided for context. See the 2016 CALM for additional details.

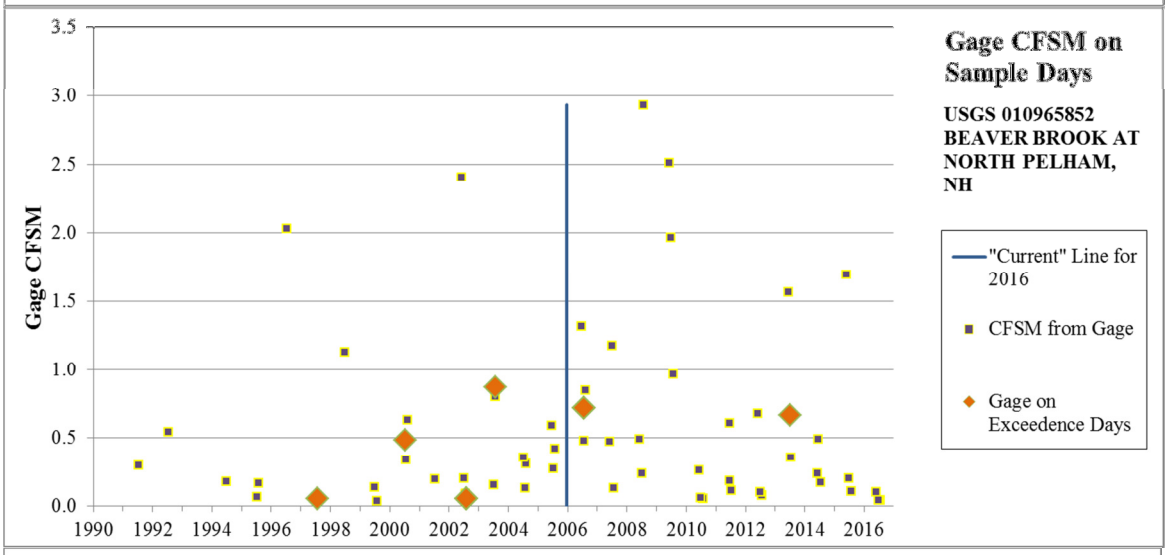
LONG POND - LONG POND TOWN BEACH (NHLAK700061205-02-02)

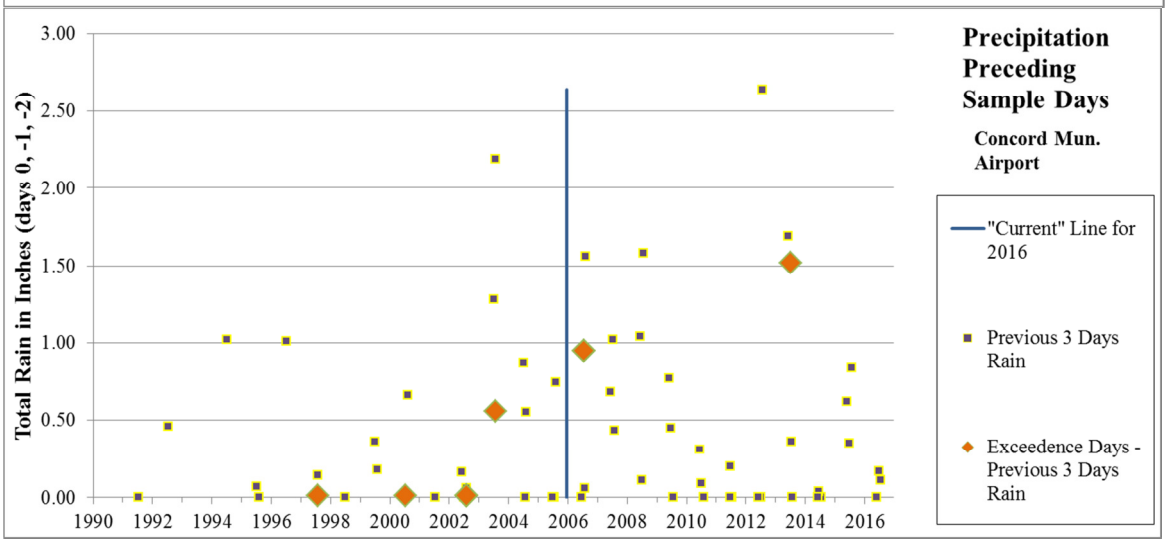
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
LONG POND - TOWN BEACH	NHLAK700061205-02-02	Escherichia coli	Pelham	4A-P	2-M

2016: There were no geomean exceedences for bacteria since 2001. There were only two exceedences of the criteria from grab samples since 2006, one exceeded the MAGEX (8/4/2006) and one exceeded the state criteria (7/19/2013). Geomean data are consistent with, if not lower than, previous years. Precipitation and flow events in the Pelham area (coinciding with time of exceedences) were not especially noteworthy, though a slight increase in rainfall (1.5 inches recorded from Concord) was observed during the 2013 grab sample exceedence. There was not an increase in rainfall at the gages from Hudson/Pelham during this time.




GRAB SAMPLES
LONG POND - TOWN BEACH (NHLAK700061205-02-02)
Counts / 100 mL
Grab MAGEX
Grab Std
"Current" Line for 2016
Grab used in a Geomean
E.COLI-GRAB-CP

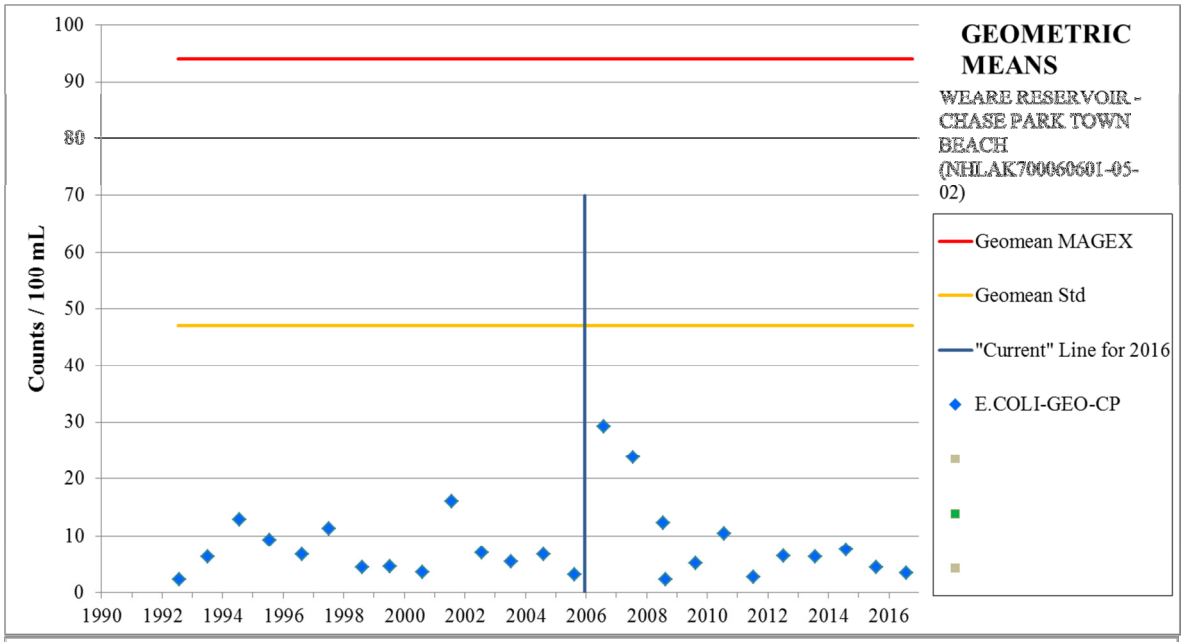

Gage CFSM on Sample Days
USGS 010965852 BEAVER BROOK AT NORTH PELHAM, NH
Gage CFSM
"Current" Line for 2016
CFSM from Gage
Gage on Exceedence Days

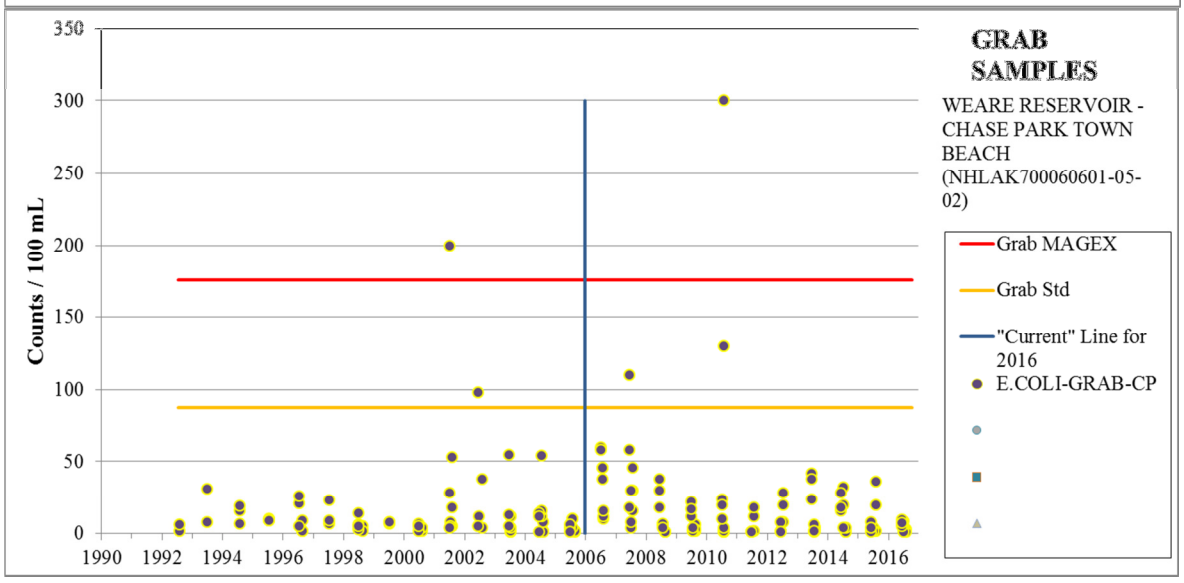

Precipitation Preceding Sample Days
Concord Mun. Airport
Total Rain in Inches (days 0, -1, -2)
"Current" Line for 2016
Previous 3 Days Rain
Exceedence Days - Previous 3 Days Rain

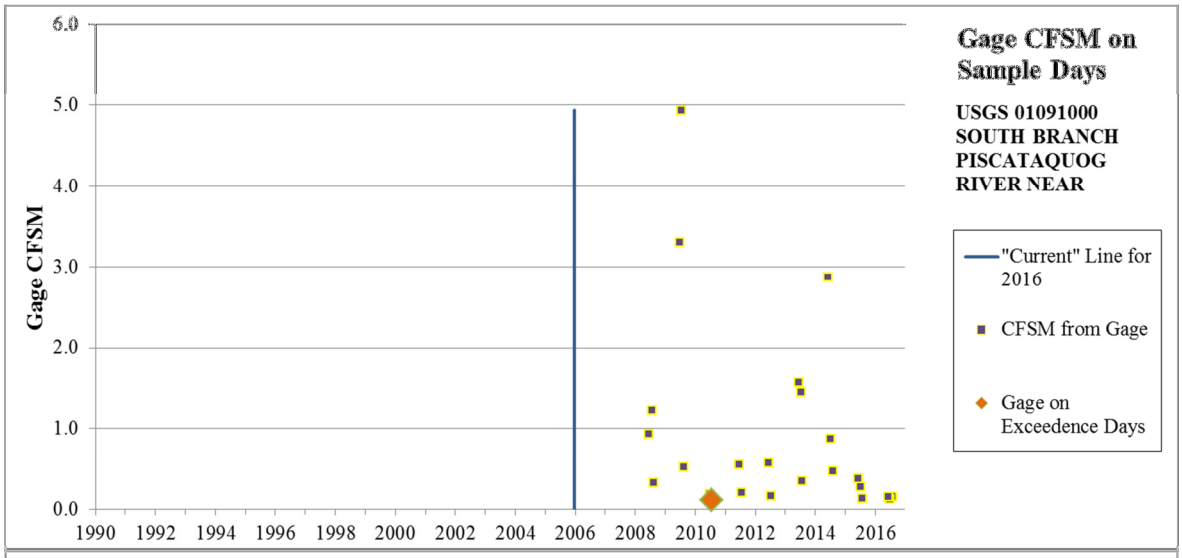
WEARE RESERVOIR - CHASE PARK TOWN BEACH-HORACE LAKE (NHLAK700060601-05-02)

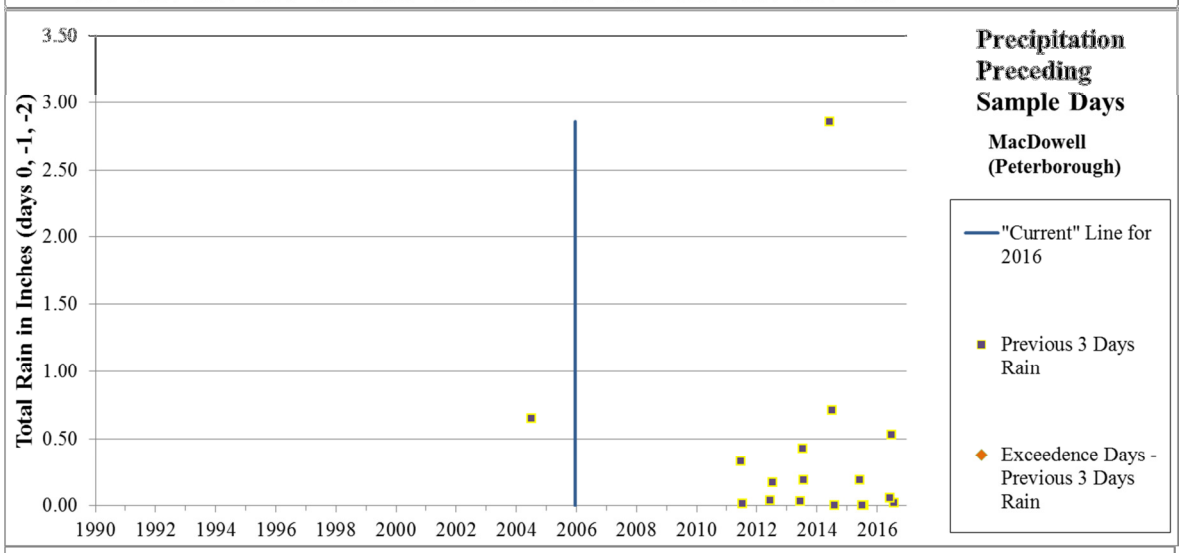
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
WEARE RESERVOIR - CHASE PARK TOWN BEACH-HORACE LAKE	NHLAK700060601-05-02	*Escherichia coli*	Weare	4A-M	2-M

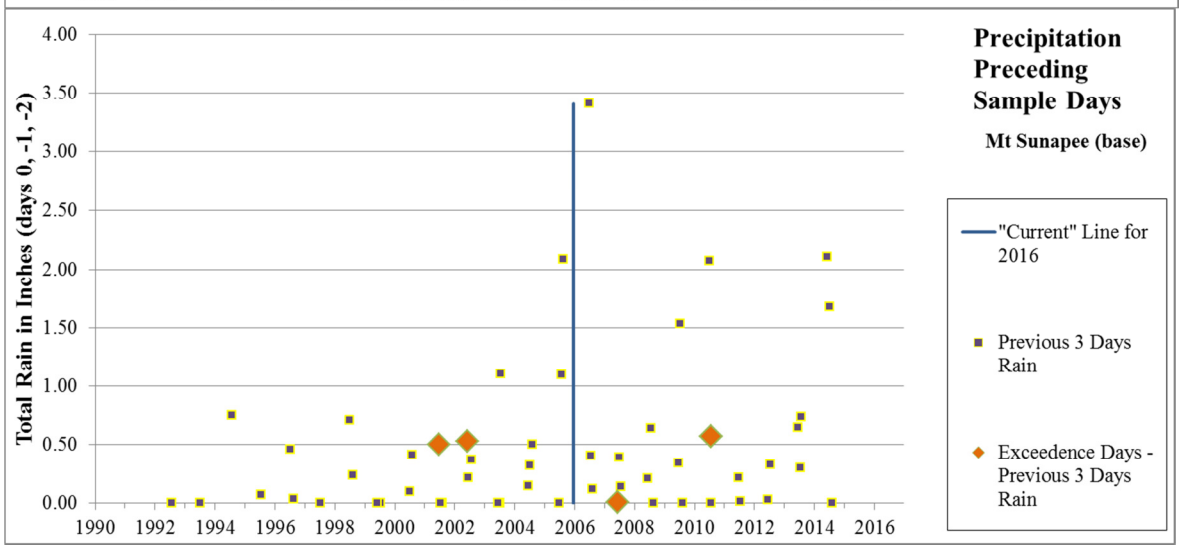
2016: There were no geometric mean exceedences for this assessment unit. Three grab samples exceed the criteria, occurring in 2007 and 2010 with one exceeding the MAGEX in 2010. Overall, only 3% of grab samples have exceeded the criteria and none in the last five years.











Notes:

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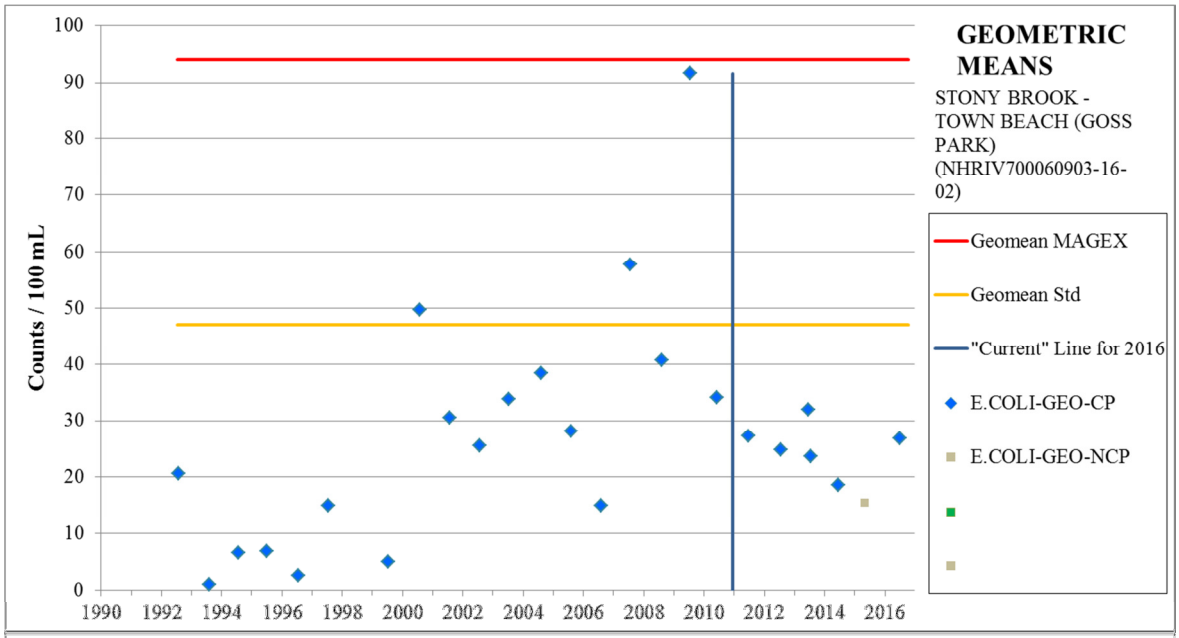
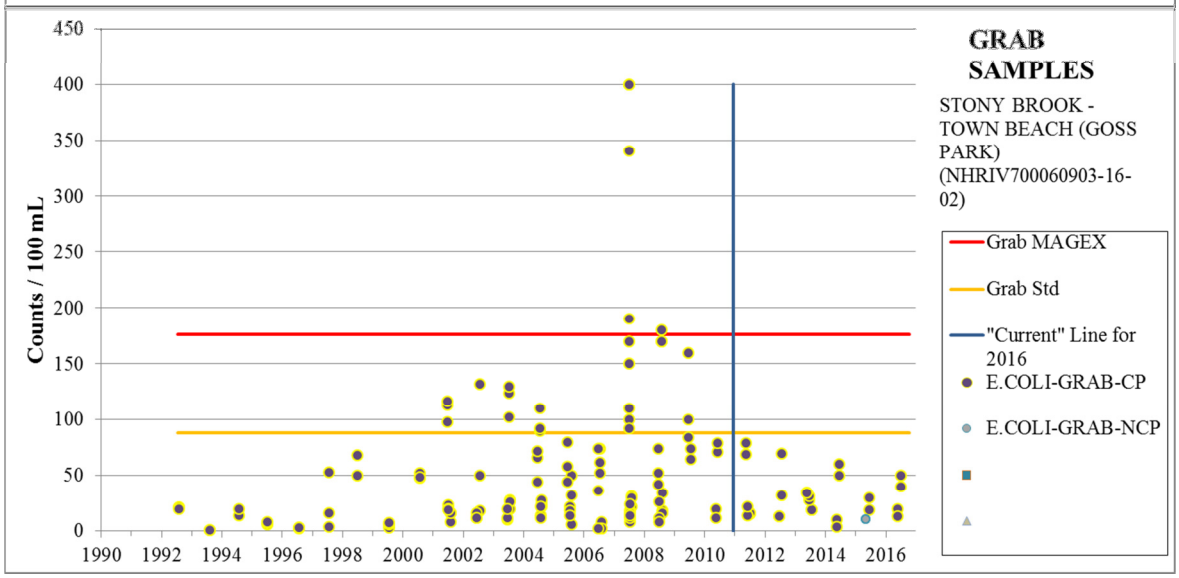
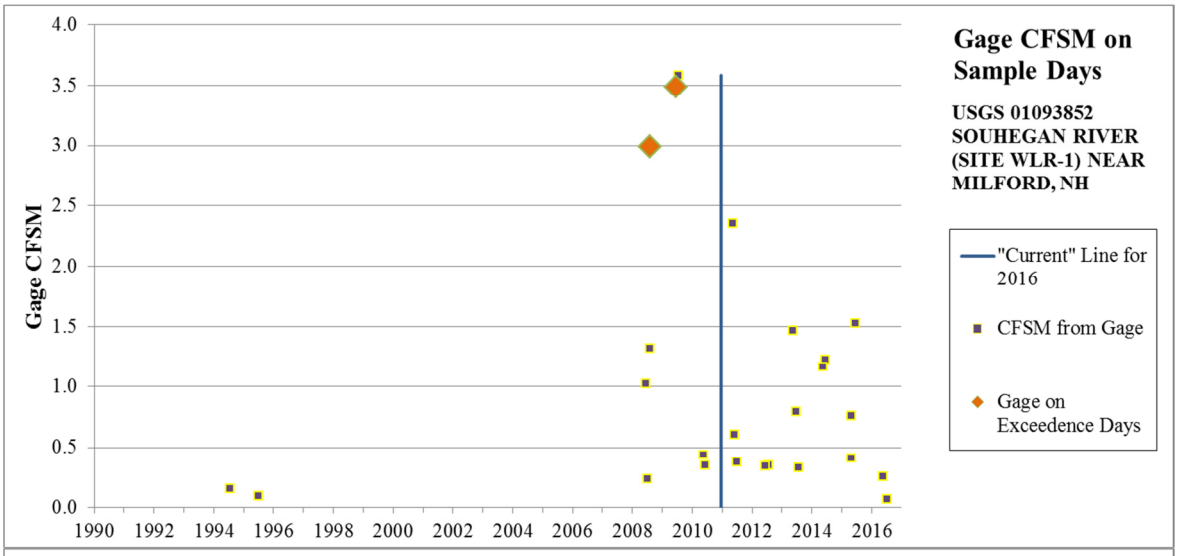
STONY BROOK - TOWN BEACH (GOSS PARK) (NHRIV700060903-16-02)

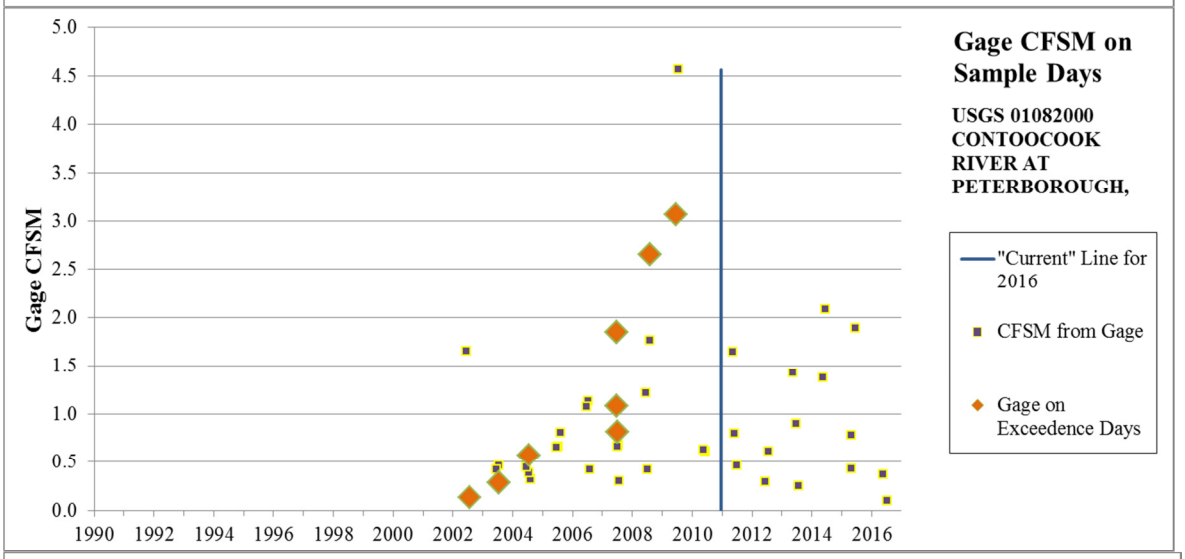
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
STONY BROOK - TOWN BEACH (GOSS PARK)	NHRIV700060903-16-02	*Escherichia coli*	Wilton	4A-M	2-M

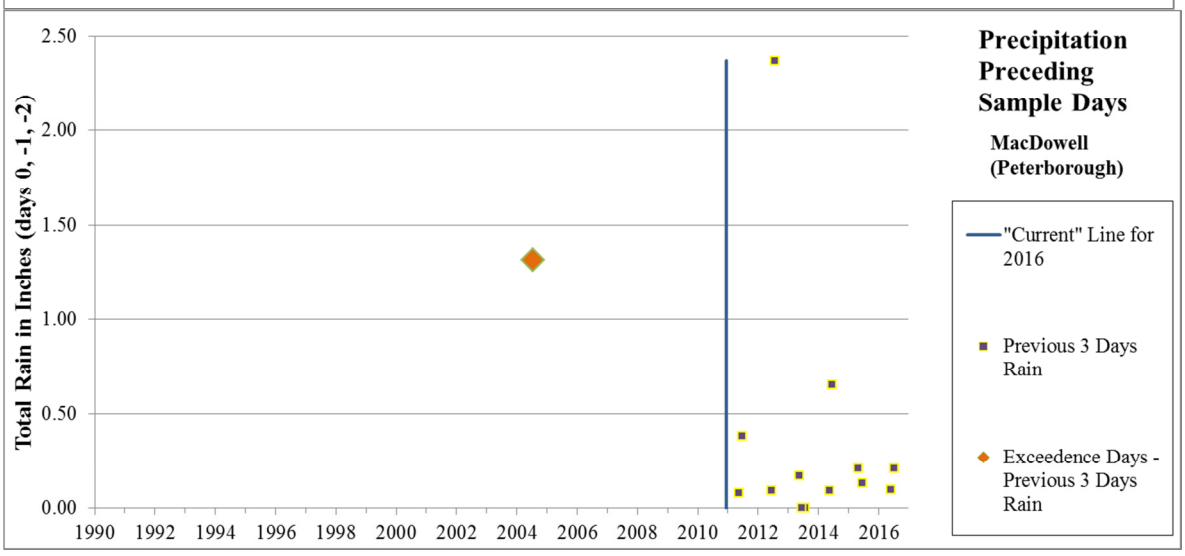
2016: This assessment unit was listed as impaired in 2014 due to exceedences from 2009-2013. There have been no new geometric mean or grab sample exceedences in the last five years with bacteria concentrations continuing to decline.

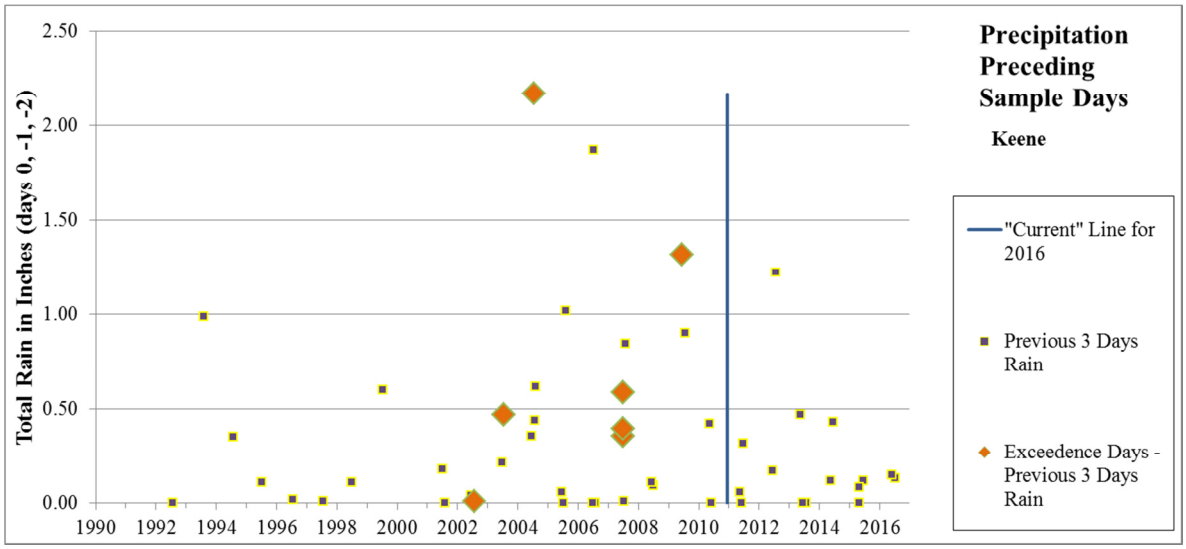





Gage CFSM on Sample Days
USGS 01093852 SOUHEGAN RIVER (SITE WLR-1) NEAR MILFORD, NH
Gage CFSM
"Current" Line for 2016
CFSM from Gage
Gage on Exceedence Days


Gage CFSM on Sample Days
USGS 01082000 CONTOOCOOK RIVER AT PETERBOROUGH,
Gage CFSM
"Current" Line for 2016
CFSM from Gage
Gage on Exceedence Days


Precipitation Preceding Sample Days
MacDowell (Peterborough)
Total Rain in Inches (days 0, -1, -2)
"Current" Line for 2016
Previous 3 Days Rain
Exceedence Days - Previous 3 Days Rain



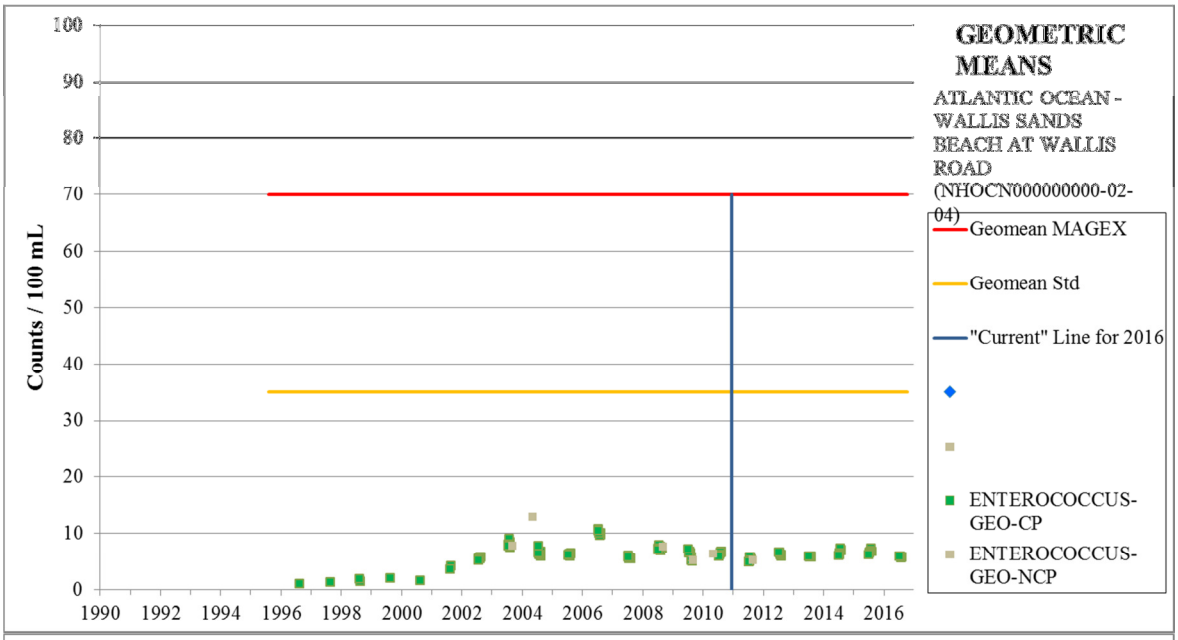
Notes:

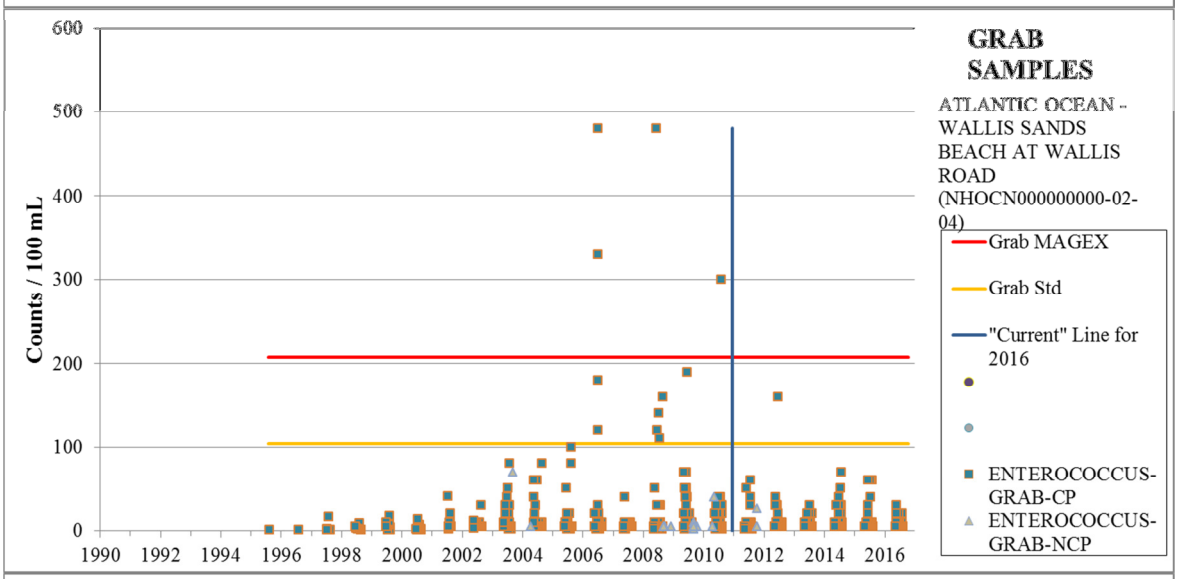
E. COLI-GEO-CP = *Escherchia coli* geometric mean calculated from samples collected during the summer critical period.
E. COLI -GEO-NCP = *Escherchia coli* geometric mean calculated from samples collected outside the summer critical period.
E. COLI -GRAB-CP = *Escherchia coli* grab samples collected during the summer critical period.
E. COLI -GRAB-NCP = *Escherchia coli* grab samples collected outside the summer critical period.
"Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current". Available older data is provided for context. See the 2016 CALM for additional details.

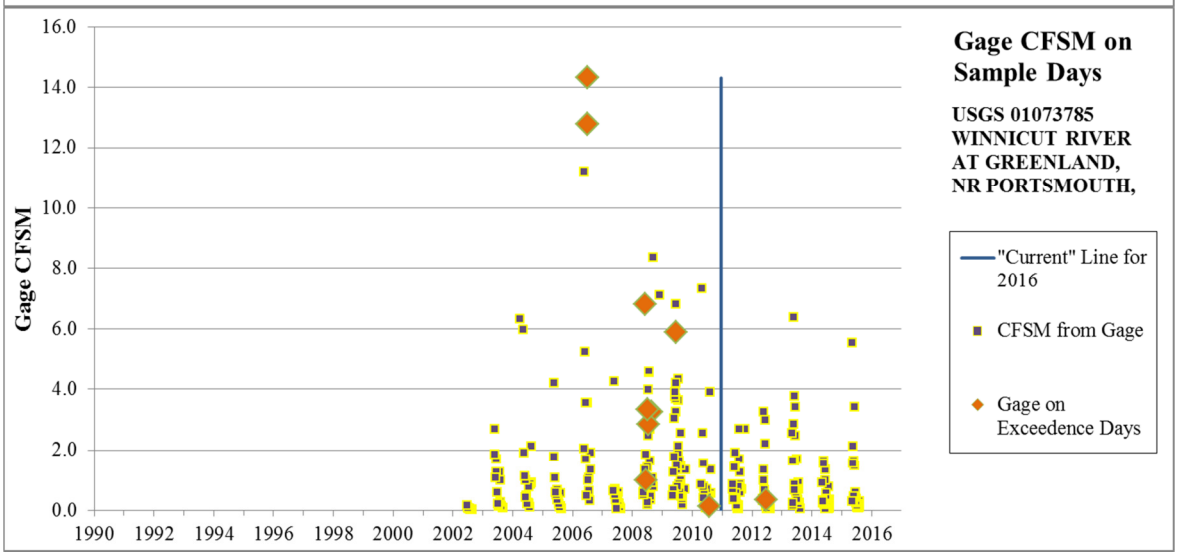
ATLANTIC OCEAN – WALLIS SANDS BEACH AT WALLIS ROAD (NHOCN000000000-02-04)

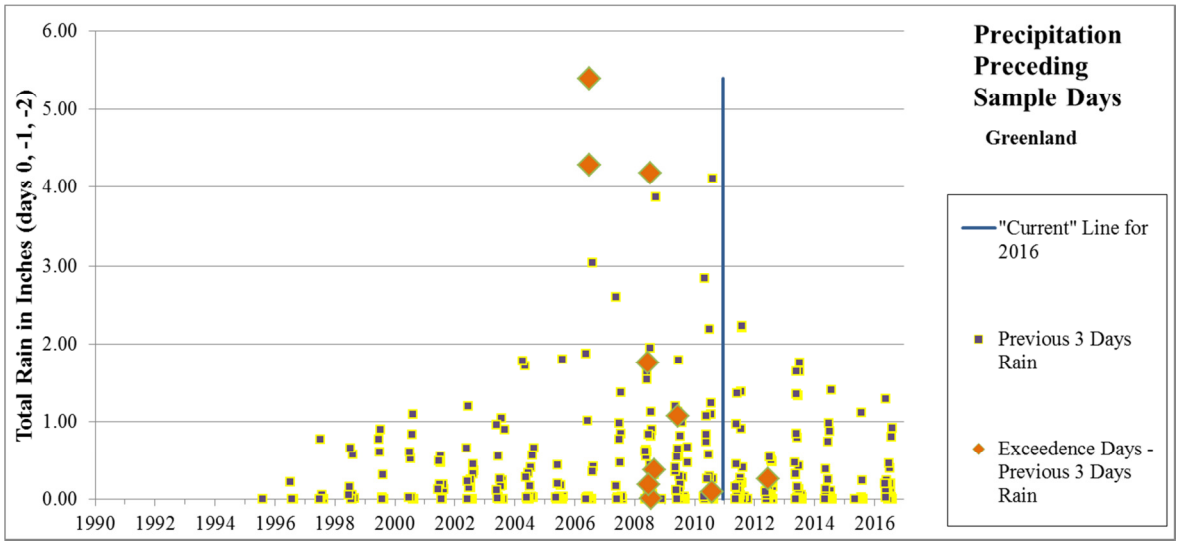
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
ATLANTIC OCEAN – WALLIS SANDS BEACH AT WALLIS ROAD	NHOCN000000000-02-04	*Enterococcus*	Rye	4A-M	2-M

2016: There are no geometric mean exceedences for this assessment unit and *Enterococcus* bacteria levels from grab samples are well below criteria in recent years. Overall, there was only 1 of 457 (0.2%) grab samples in exceedence during the critical period.


GEOMETRIC MEANS
ATLANTIC OCEAN - WALLIS SANDS BEACH AT WALLIS ROAD (NHOCN000000000-02-04)
Counts / 100 mL
Geomean MAGEX
Geomean Std
"Current" Line for 2016
ENTEROCOCCUS-GEO-CP
ENTEROCOCCUS-GEO-NCP


GRAB SAMPLES
ATLANTIC OCEAN - WALLIS SANDS BEACH AT WALLIS ROAD (NHOCN000000000-02-04)
Counts / 100 mL
Grab MAGEX
Grab Std
"Current" Line for 2016
ENTEROCOCCUS-GRAB-CP
ENTEROCOCCUS-GRAB-NCP


Gage CFSM on Sample Days
USGS 01073785 WINNICUT RIVER AT GREENLAND, NR PORTSMOUTH,
Gage CFSM
"Current" Line for 2016
CFSM from Gage
Gage on Exceedence Days



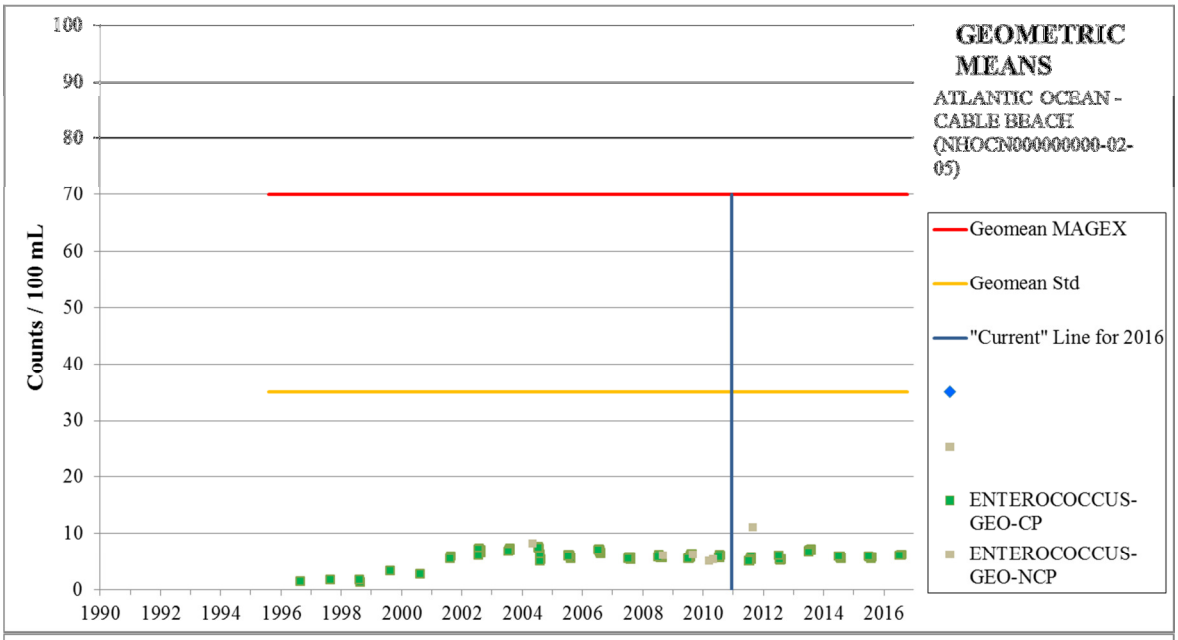
Notes:

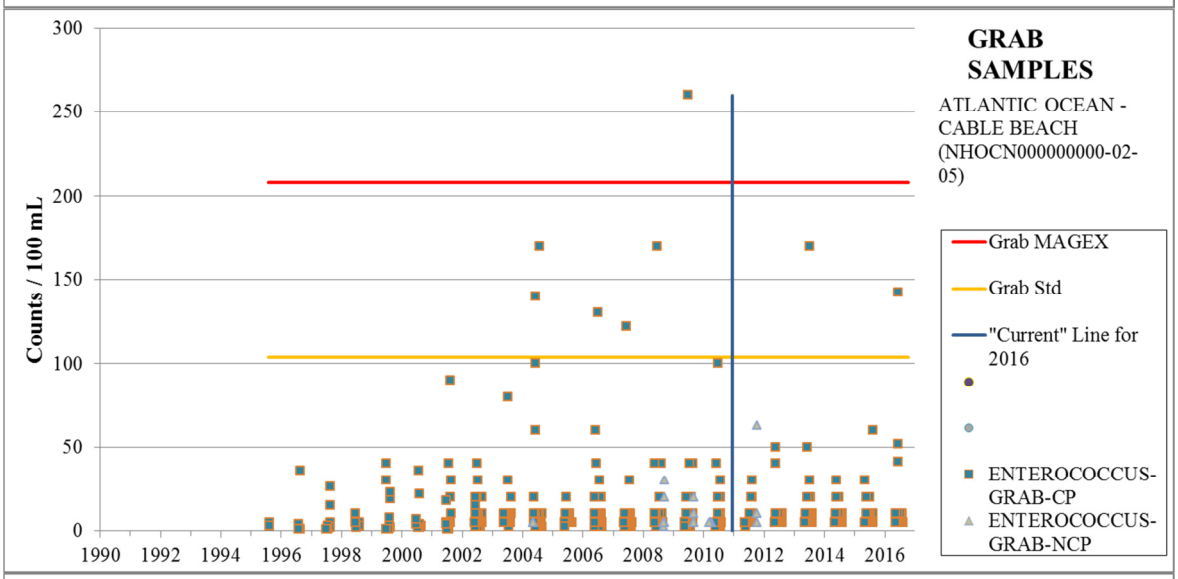
ENTEROCOCCUS-GEO-CP = Enterococcus geometric mean calculated from samples collected during the summer critical period.
ENTEROCOCCUS-GEO-NCP = Enterococcus geometric mean calculated from samples collected outside the summer critical period.
ENTEROCOCCUS-GRAB-CP = Enterococcus grab samples collected during the summer critical period.
ENTEROCOCCUS-GRAB-NCP = Enterococcus grab samples collected outside the summer critical period.
"Current" Line for 2014 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current". Available older data is provided for context. See the 2014 CALM for additional details.

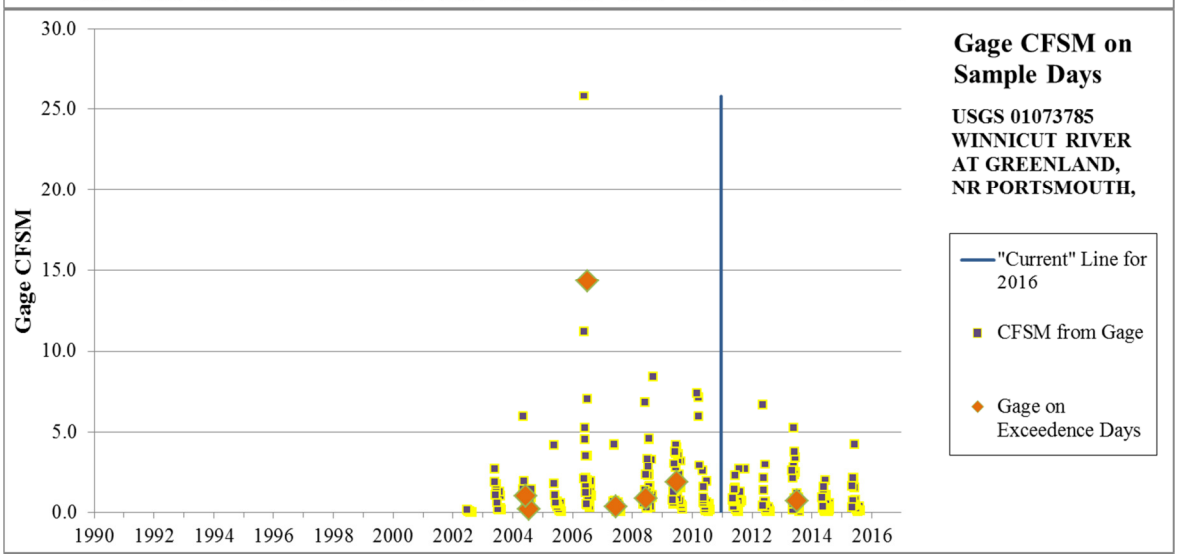
ATLANTIC OCEAN –CABLE BEACH (NHOCN000000000-02-05)

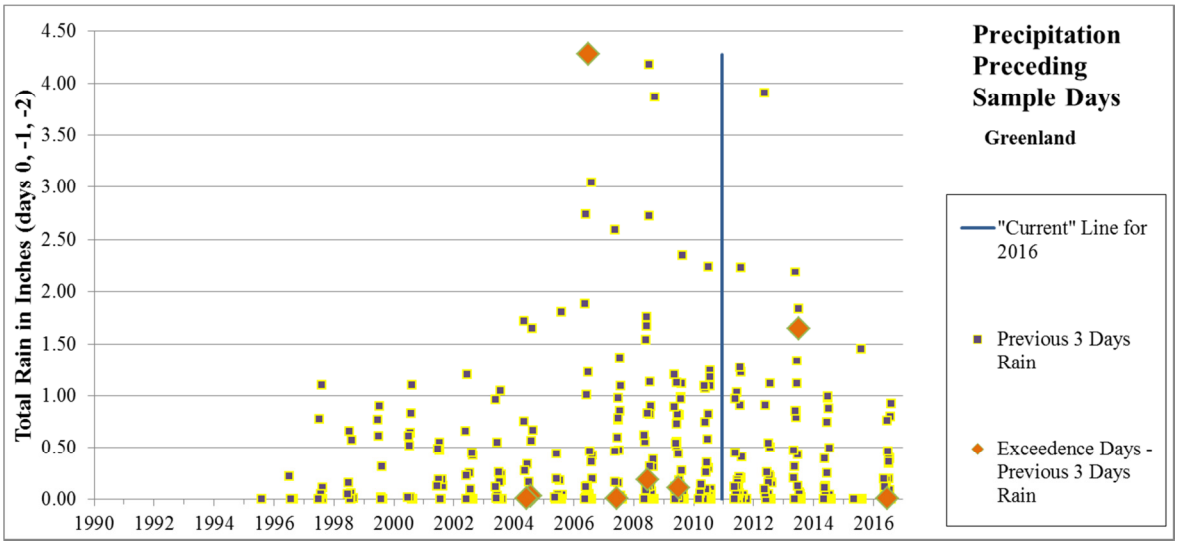
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
ATLANTIC OCEAN –CABLE BEACH	NHOCN000000000-02-05	*Enterococcus*	Rye	4A-M	2-M

2016: There are no geometric mean exceedences for this assessment unit and *Enterococcus* bacteria levels from most of the grab samples are below criteria in recent years with only two exceeding criteria in the last five years. Only two of 453 (0.4%) of the grab samples exceeded criteria during the critical period.\


GEOMETRIC MEANS
ATLANTIC OCEAN - CABLE BEACH (NHOCN000000000-02-05)
Counts / 100 mL
Geomean MAGEX
Geomean Std
"Current" Line for 2016
ENTEROCOCCUS-GEO-CP
ENTEROCOCCUS-GEO-NCP


GRAB SAMPLES
ATLANTIC OCEAN - CABLE BEACH (NHOCN000000000-02-05)
Counts / 100 mL
Grab MAGEX
Grab Std
"Current" Line for 2016
ENTEROCOCCUS-GRAB-CP
ENTEROCOCCUS-GRAB-NCP


Gage CFSM on Sample Days
USGS 01073785 WINNICUT RIVER AT GREENLAND, NR PORTSMOUTH,
Gage CFSM
"Current" Line for 2016
CFSM from Gage
Gage on Exceedence Days



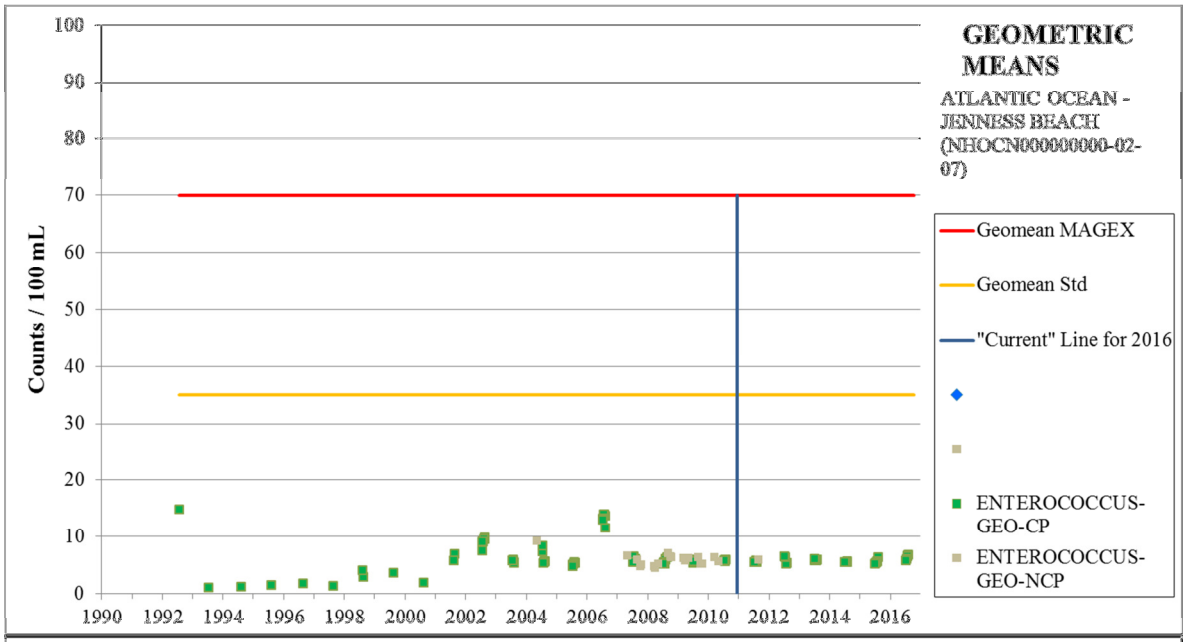
Notes:

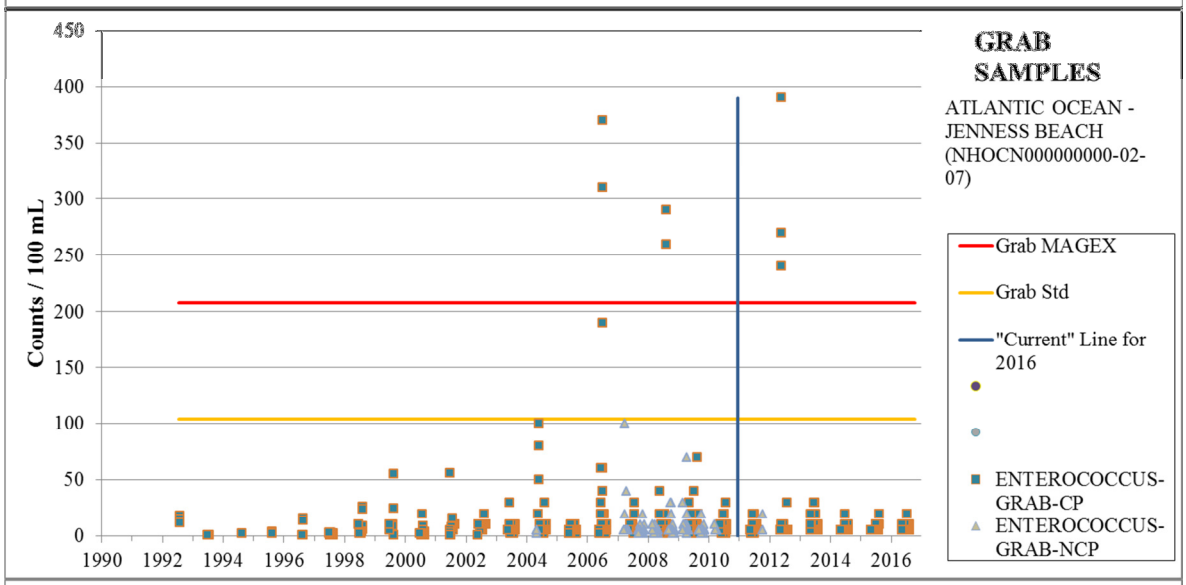
ENTEROCOCCUS-GEO-CP = Enterococcus geometric mean calculated from samples collected during the summer critical period.
ENTEROCOCCUS-GEO-NCP = Enterococcus geometric mean calculated from samples collected outside the summer critical period.
ENTEROCOCCUS-GRAB-CP = Enterococcus grab samples collected during the summer critical period.
ENTEROCOCCUS-GRAB-NCP = Enterococcus grab samples collected outside the summer critical period.
"Current" Line for 2014 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current". Available older data is provided for context. See the 2014 CALM for additional details.

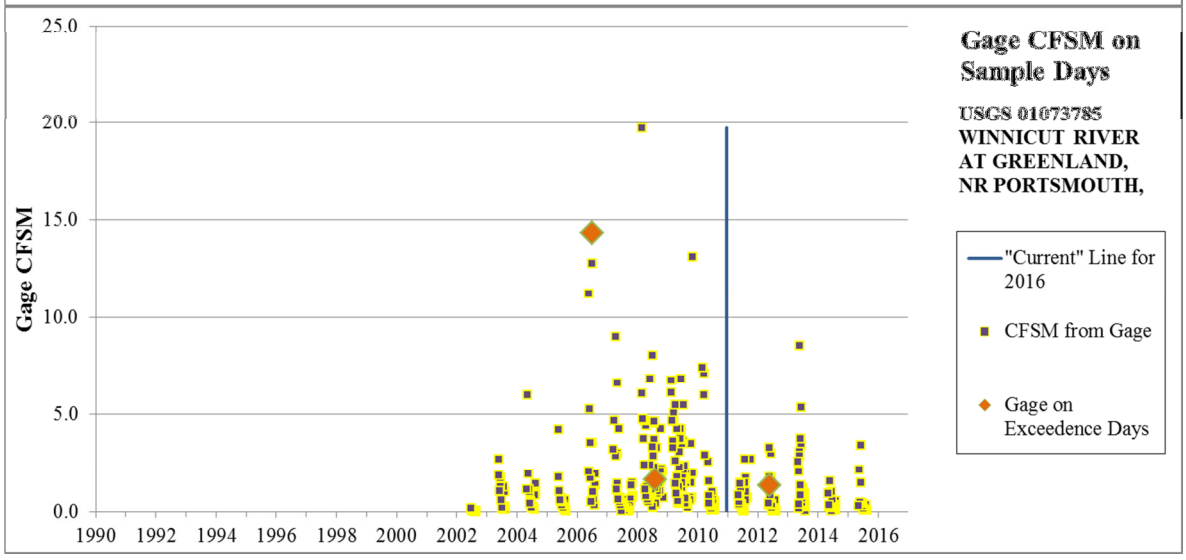
ATLANTIC OCEAN - JENNESS BEACH (NHOCN000000000-02-07)

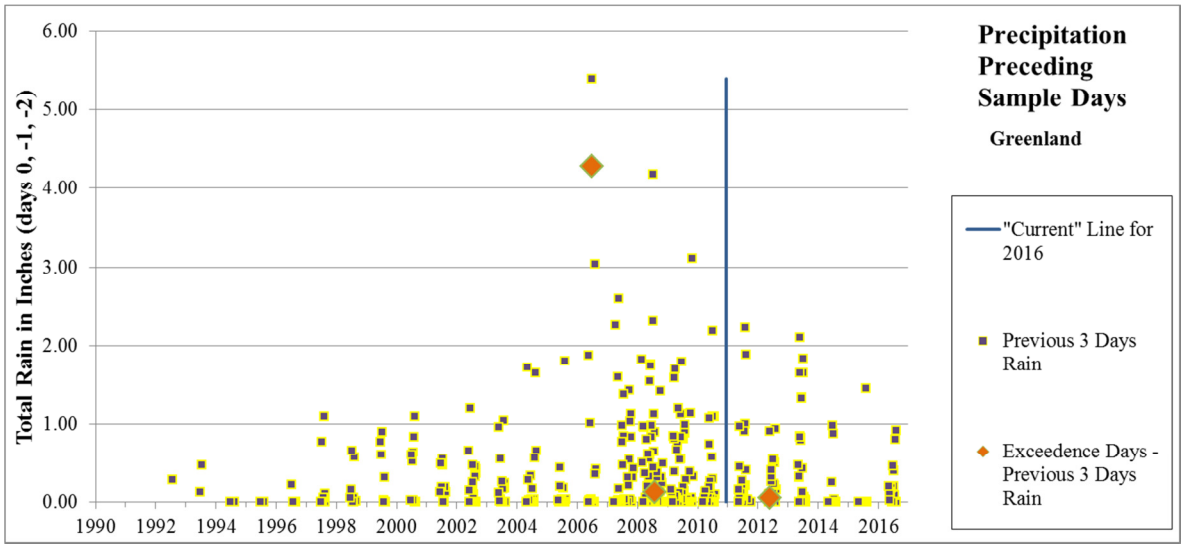
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
ATLANTIC OCEAN - JENNESS BEACH	NHOCN000000000-02-07	*Enterococcus*	Rye	4A-M	2-M

2016: There are no geometric mean exceedences for this assessment unit and *Enterococcus* bacteria levels from grab samples are below criteria in recent years. In the last five years, three grab samples exceed MAGEX (all on June 11, 2012), but these did not result in an exceedence of the geometric mean. These results do not coincide with increased precipitation or flow events. Only three of 360 (0.8%) of the grab samples exceeded criteria during the critical period.


GEOMETRIC MEANS
ATLANTIC OCEAN - JENNESS BEACH (NHOCN000000000-02-07)
Counts / 100 mL
Geomean MAGEX
Geomean Std
"Current" Line for 2016
ENTEROCOCCUS-GEO-CP
ENTEROCOCCUS-GEO-NCP


GRAB SAMPLES
ATLANTIC OCEAN - JENNESS BEACH (NHOCN000000000-02-07)
Counts / 100 mL
Grab MAGEX
Grab Std
"Current" Line for 2016
ENTEROCOCCUS-GRAB-CP
ENTEROCOCCUS-GRAB-NCP


Gage CFSM on Sample Days
USGS 01073785 WINNICUT RIVER AT GREENLAND, NR PORTSMOUTH,
Gage CFSM
"Current" Line for 2016
CFSM from Gage
Gage on Exceedence Days



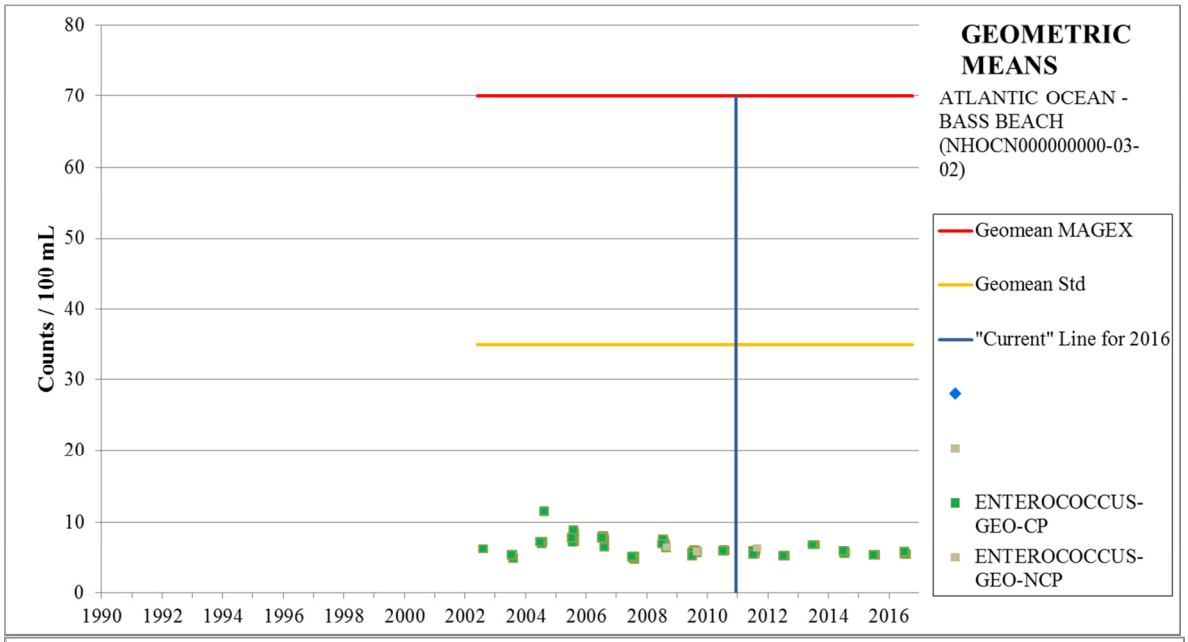
Notes:

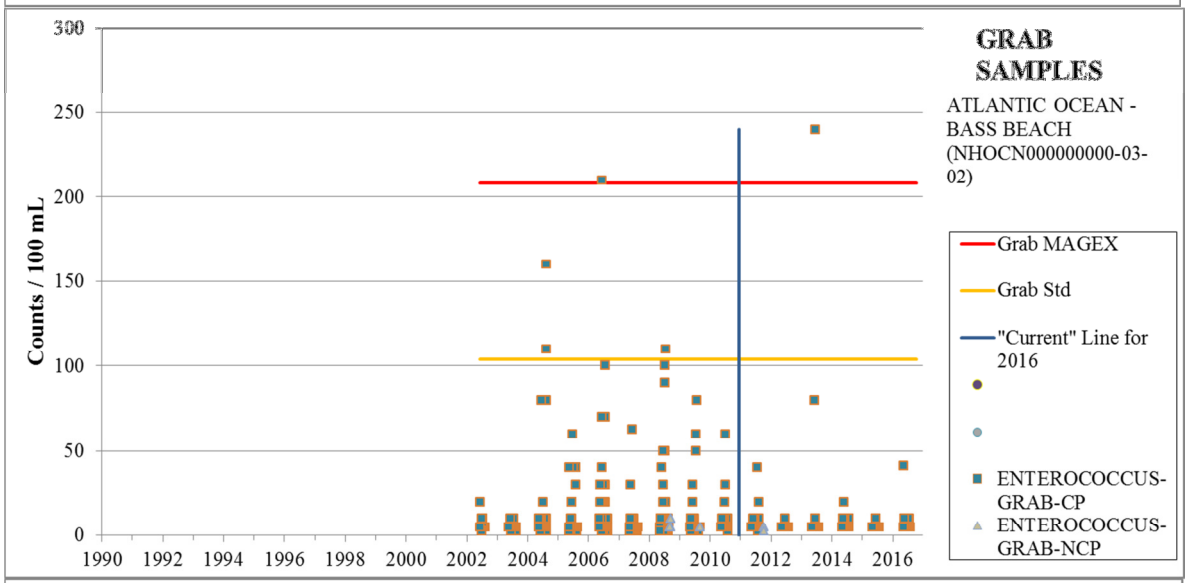
ENTEROCOCCUS-GEO-CP = Enterococcus geometric mean calculated from samples collected during the summer critical period.
ENTEROCOCCUS-GEO-NCP = Enterococcus geometric mean calculated from samples collected outside the summer critical period.
ENTEROCOCCUS-GRAB-CP = Enterococcus grab samples collected during the summer critical period.
ENTEROCOCCUS-GRAB-NCP = Enterococcus grab samples collected outside the summer critical period.
"Current" Line for 2014 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current". Available older data is provided for context. See the 2014 CALM for additional details.

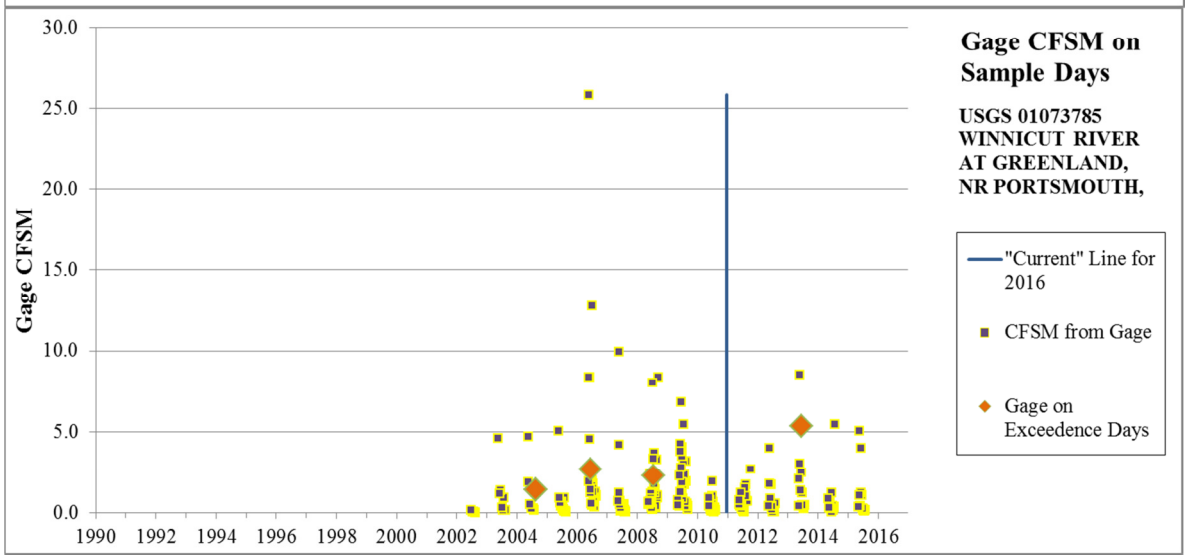
ATLANTIC OCEAN - BASS BEACH (NHOCN000000000-03-02)

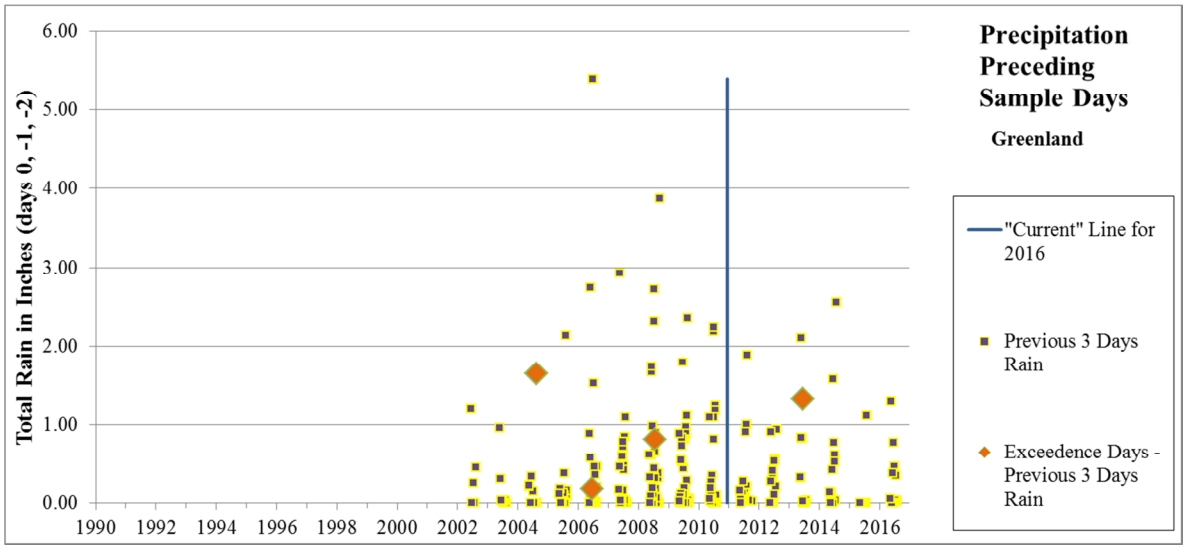
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
ATLANTIC OCEAN - BASS BEACH	NHOCN000000000-03-02	*Enterococcus*	North Hampton	4A-M	2-M

2016: There are no geometric mean exceedences for this assessment unit and *Enterococcus* bacteria levels from grab samples are below criteria in recent years. In the last five years, one grab sample exceeds the MAGEX from 2013 when gage and precipitation were slightly elevated. Only two of 222 (1%) of the grab samples exceeded criteria during the critical period.


GEOMETRIC MEANS
ATLANTIC OCEAN - BASS BEACH (NHOCN000000000-03-02)
Counts / 100 mL
Geomean MAGEX
Geomean Std
"Current" Line for 2016
ENTEROCOCCUS-GEO-CP
ENTEROCOCCUS-GEO-NCP


GRAB SAMPLES
ATLANTIC OCEAN - BASS BEACH (NHOCN000000000-03-02)
Counts / 100 mL
Grab MAGEX
Grab Std
"Current" Line for 2016
ENTEROCOCCUS-GRAB-CP
ENTEROCOCCUS-GRAB-NCP


Gage CFSM on Sample Days
USGS 01073785 WINNICUT RIVER AT GREENLAND, NR PORTSMOUTH,
Gage CFSM
"Current" Line for 2016
CFSM from Gage
Gage on Exceedence Days

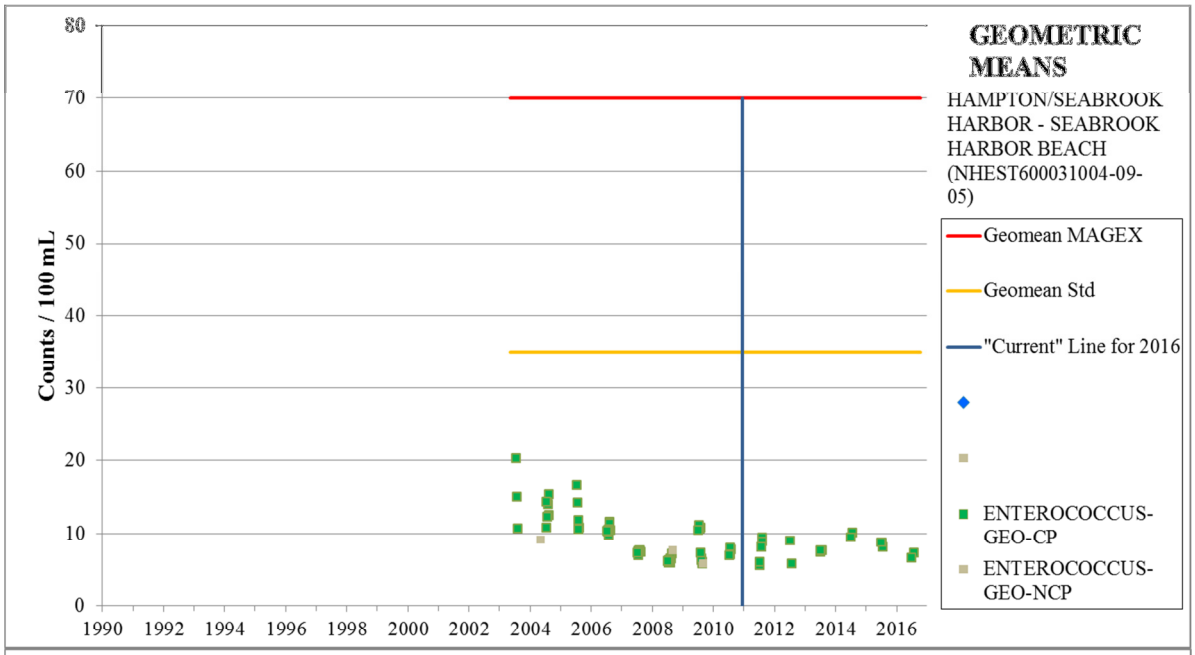


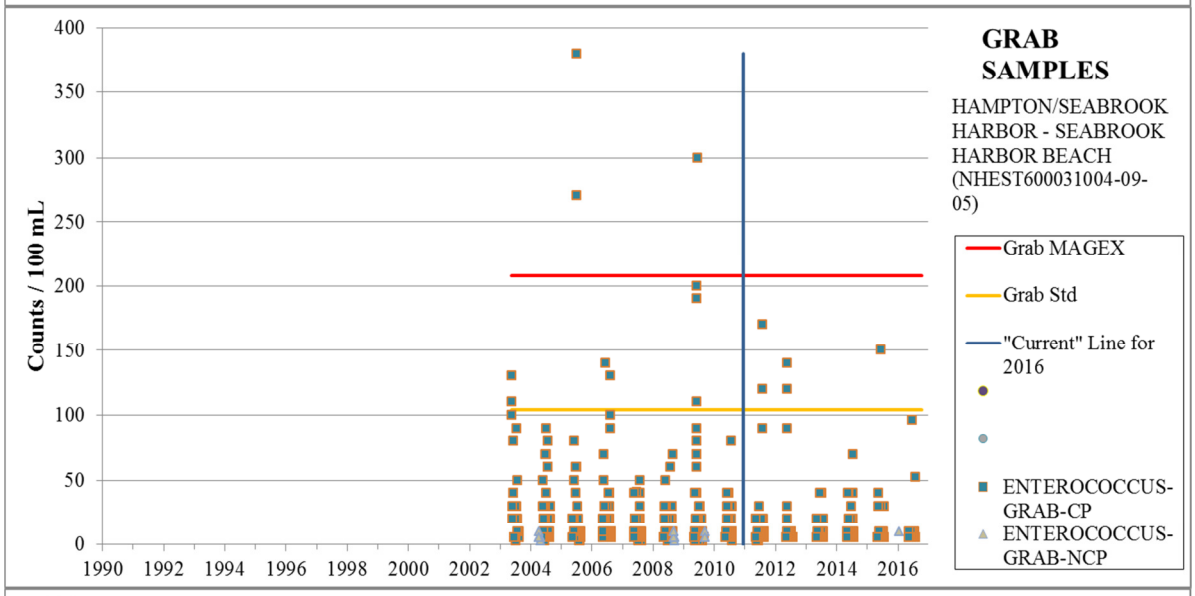
Notes:
ENTEROCOCCUS-GEO-CP = Enterococcus geometric mean calculated from samples collected during the summer critical period.
ENTEROCOCCUS-GEO-NCP = Enterococcus geometric mean calculated from samples collected outside the summer critical period.
ENTEROCOCCUS-GRAB-CP = Enterococcus grab samples collected during the summer critical period.
ENTEROCOCCUS-GRAB-NCP = Enterococcus grab samples collected outside the summer critical period.
"Current" Line for 2014 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current". Available older data is provided for context. See the 2014 CALM for additional details.

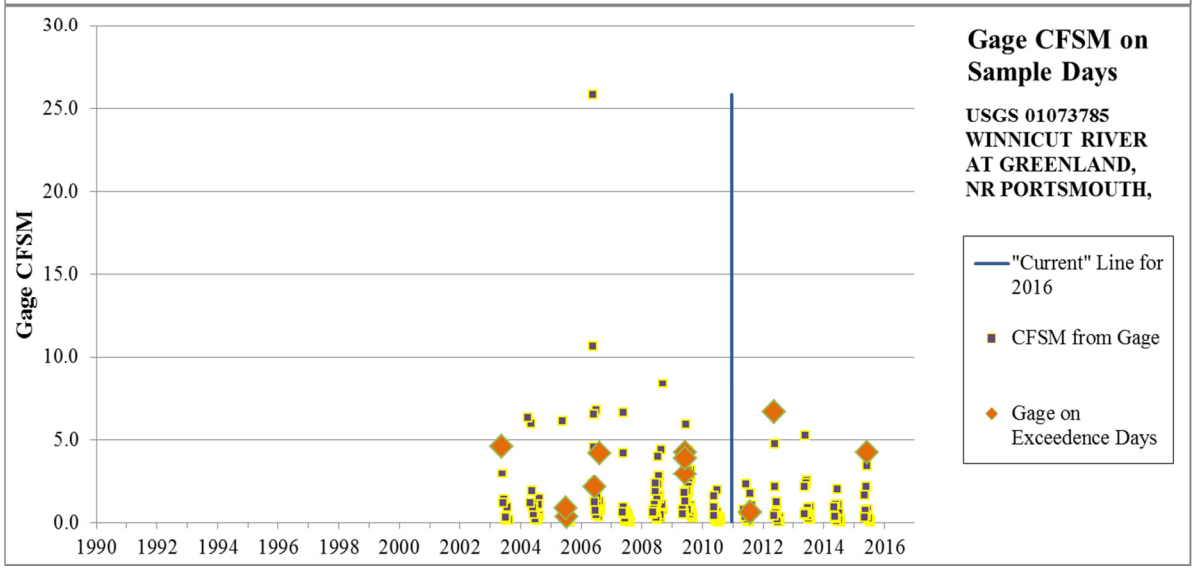
HAMPTON/SEABROOK HARBOR - SEABROOK HARBOR BEACH (NHEST600031004-09-05)

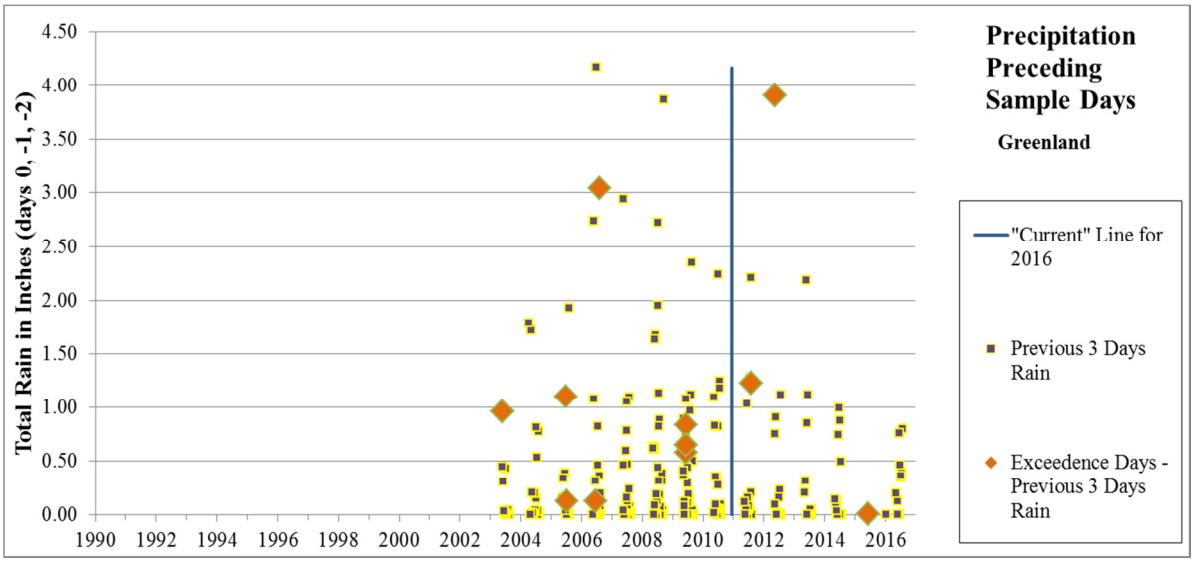
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
HAMPTON/SEABROOK HARBOR - SEABROOK HARBOR BEACH	NHEST600031004-09-05	*Enterococcus*	Seabrook	4A-M	2-M

2016: There are no geometric mean exceedences of *Enterococcus* bacteria for this assessment unit. In the last five years, five grab samples exceed the MAGEX from 2011, 2012 and 2015. Increased bacteria levels coincide with increased precipitation events in 2011 and 2012. Only eight of 228 (3.5%) of the grab samples exceeded criteria during the critical period.


GEOMETRIC MEANS
HAMPTON/SEABROOK HARBOR - SEABROOK HARBOR BEACH (NHEST600031004-09-05)
Counts / 100 mL
Geomean MAGEX
Geomean Std
"Current" Line for 2016
ENTEROCOCCUS-GEO-CP
ENTEROCOCCUS-GEO-NCP


GRAB SAMPLES
HAMPTON/SEABROOK HARBOR - SEABROOK HARBOR BEACH (NHEST600031004-09-05)
Counts / 100 mL
Grab MAGEX
Grab Std
"Current" Line for 2016
ENTEROCOCCUS-GRAB-CP
ENTEROCOCCUS-GRAB-NCP


Gage CFSM on Sample Days
USGS 01073785 WINNICUT RIVER AT GREENLAND, NR PORTSMOUTH,
Gage CFSM
"Current" Line for 2016
CFSM from Gage
Gage on Exceedence Days



Notes:

ENTEROCOCCUS-GEO-CP = Enterococcus geometric mean calculated from samples collected during the summer critical period.
ENTEROCOCCUS-GEO-NCP = Enterococcus geometric mean calculated from samples collected outside the summer critical period.
ENTEROCOCCUS-GRAB-CP = Enterococcus grab samples collected during the summer critical period.
ENTEROCOCCUS-GRAB-NCP = Enterococcus grab samples collected outside the summer critical period.
"Current" Line for 2014 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current". Available older data is provided for context. See the 2014 CALM for additional details.

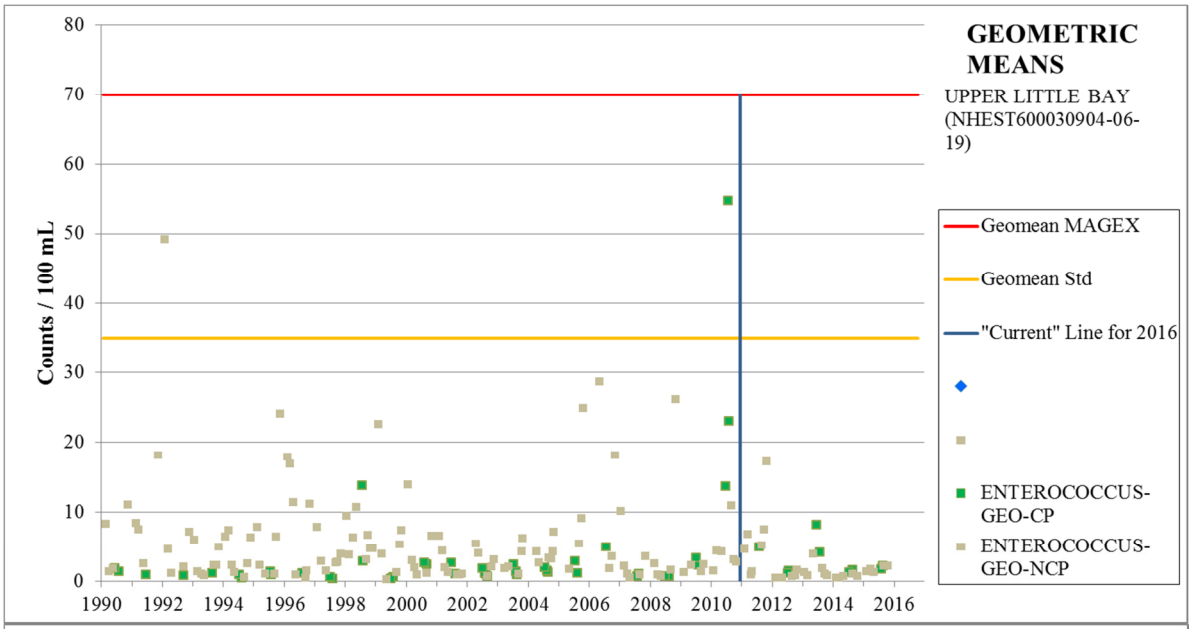
Bacteria – Non-Beaches (Primary Contact recreation [i.e. Swimming])

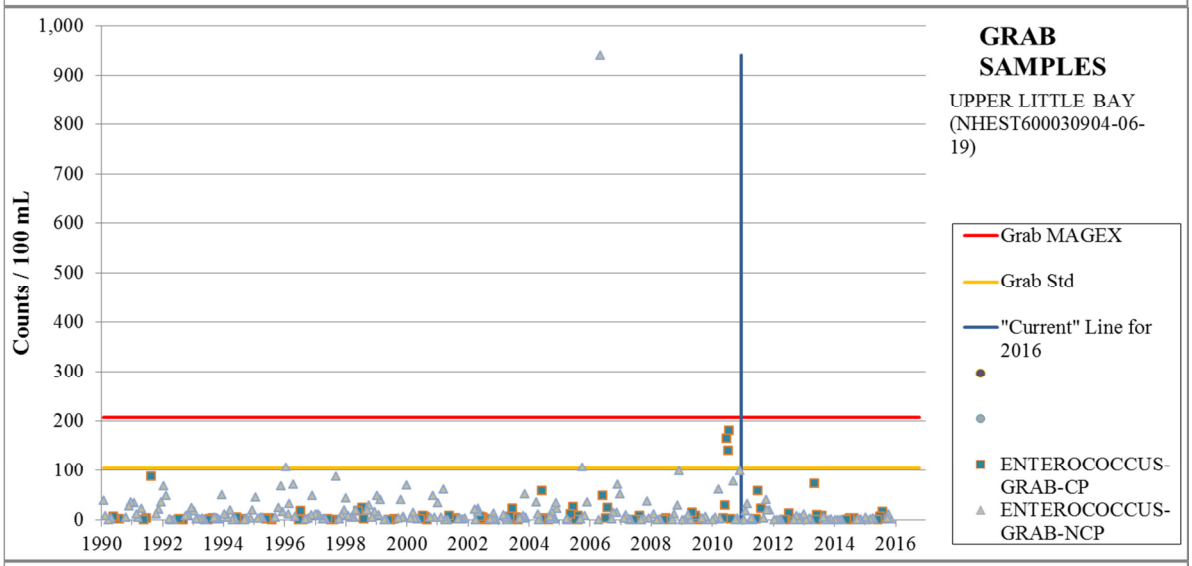
UPPER LITTLE BAY (NHEST600030904-06-19)

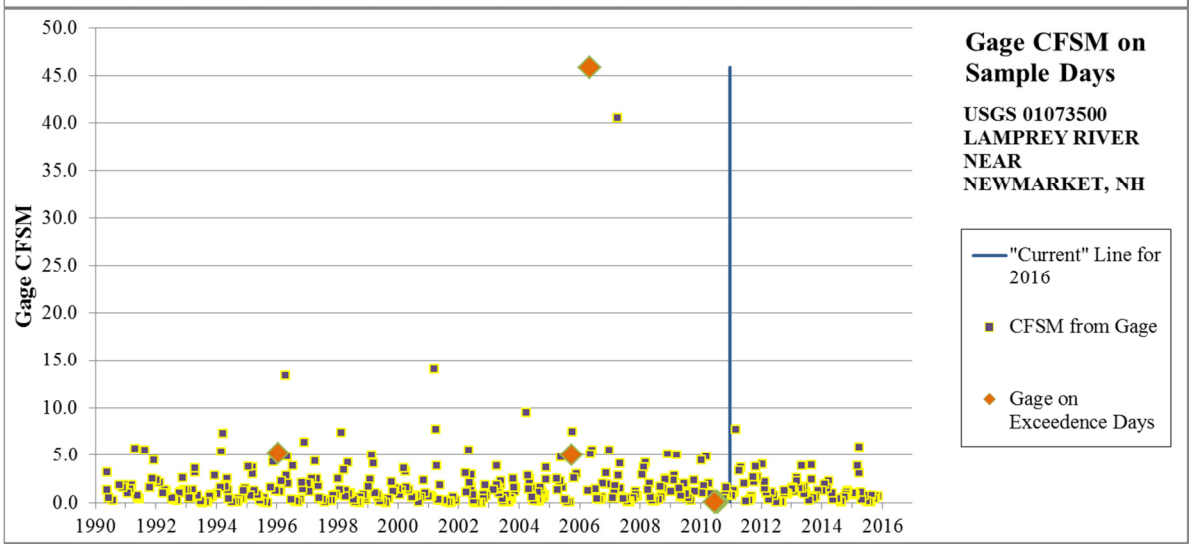
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
UPPER LITTLE BAY	NHEST600030904-06-19	*Enterococcus*	Newington	4A-P	2-G

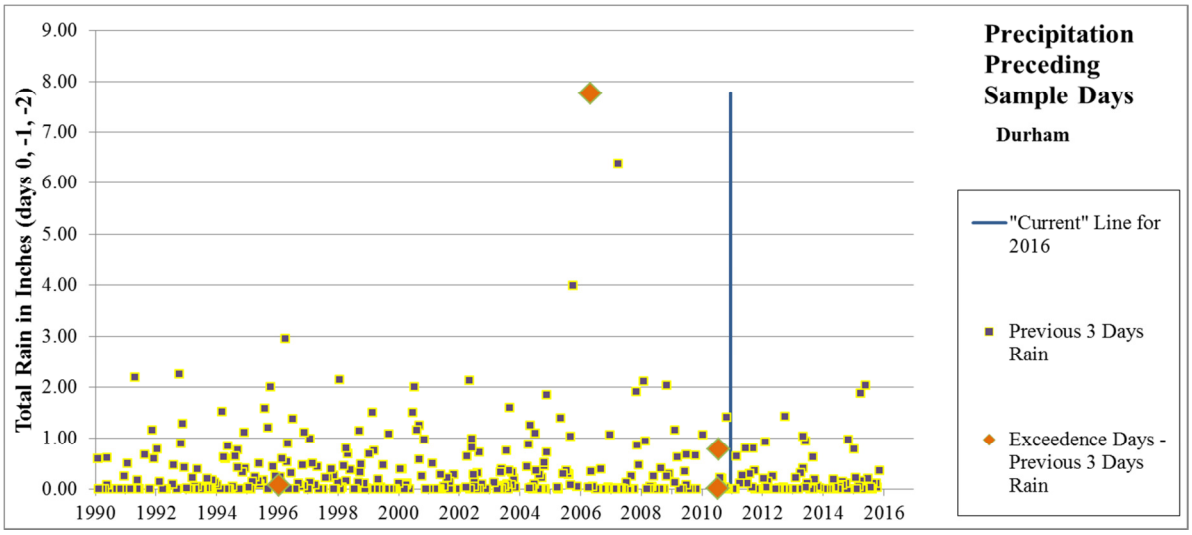
Comment is for Primary and Secondary Contact recreation.

Since 2011, nine geometric means have been calculated in the Critical Period and none were above criteria. Since 2011, 20 single samples collected in the Critical Period and none above single sample maximum criteria (SSMC) or MAGEX. Since 2011, 29 geometric means have been calculated in the Non-Critical Period and none were above criteria. Since 2011, 40 single samples were collected in the Non-Critical Period and none above SSMC or MAGEX. Sampling considered current in the 2016 cycle completed at same site as previous cycles (GRBAP). Prior listing based on limited data above criteria. Data for current cycle collected across range of flow and precipitation conditions (stream flow gage 01073500; Durham weather station). Based on current data included in 2016 cycle assessment unit has been assessed as fully supporting (Category 2).


GEOMETRIC MEANS
UPPER LITTLE BAY (NHEST600030904-06-19)
Counts / 100 mL
Geomean MAGEX
Geomean Std
"Current" Line for 2016
ENTEROCOCCUS-GEO-CP
ENTEROCOCCUS-GEO-NCP


GRAB SAMPLES
UPPER LITTLE BAY (NHEST600030904-06-19)
Counts / 100 mL
Grab MAGEX
Grab Std
"Current" Line for 2016
ENTEROCOCCUS-GRAB-CP
ENTEROCOCCUS-GRAB-NCP


Gage CFSM on Sample Days
USGS 01073500 LAMPREY RIVER NEAR NEWMARKET, NH
Gage CFSM
"Current" Line for 2016
CFSM from Gage
Gage on Exceedence Days

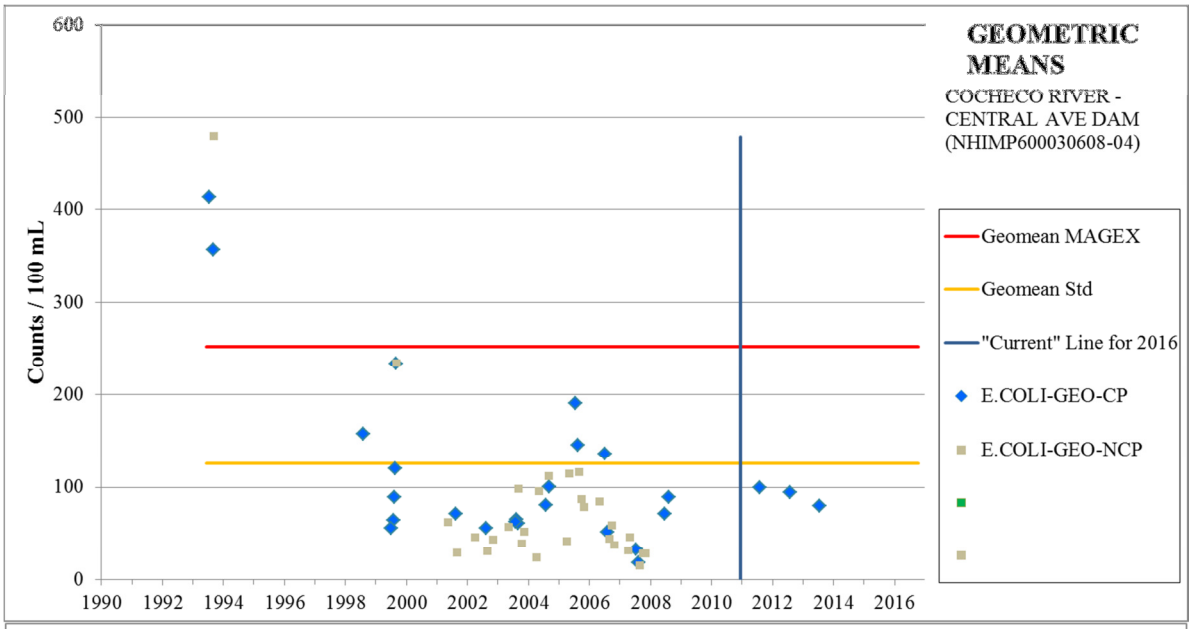


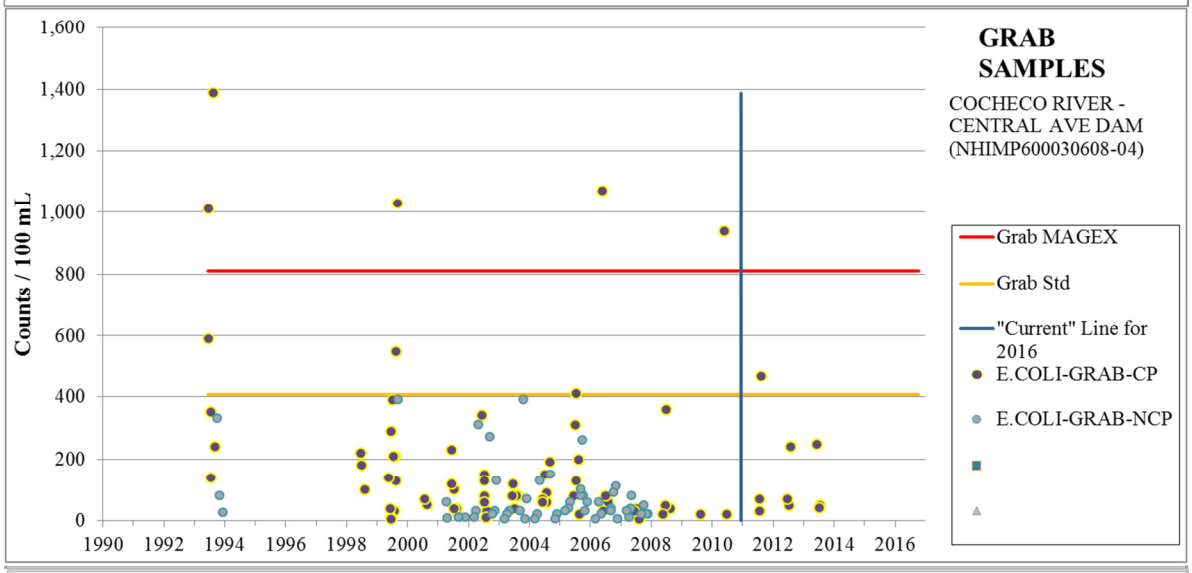
Notes:
ENTEROCOCCUS-GEO-CP = Enterococcus geometric mean calculated from samples collected during the summer critical period.
ENTEROCOCCUS-GEO-NCP = Enterococcus geometric mean calculated from samples collected outside the summer critical period.
ENTEROCOCCUS-GRAB-CP = Enterococcus grab samples collected during the summer critical period.
ENTEROCOCCUS-GRAB-NCP = Enterococcus grab samples collected outside the summer critical period.
"Current" Line for 2014 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current". Available older data is provided for context. See the 2014 CALM for additional details.

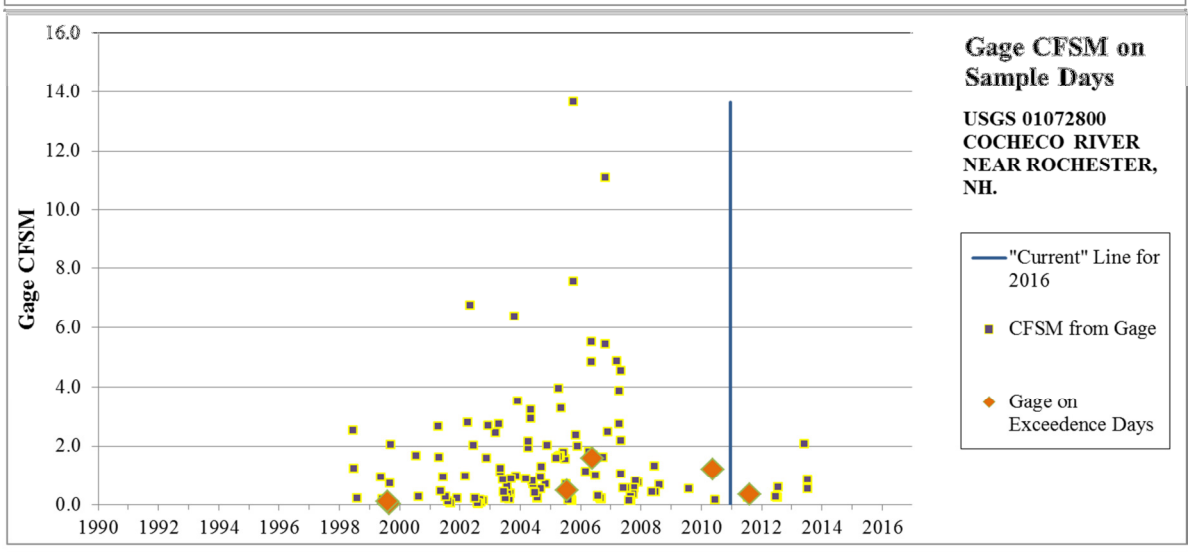
COCHECO RIVER - CENTRAL AVE DAM (NHIMP600030608-04)

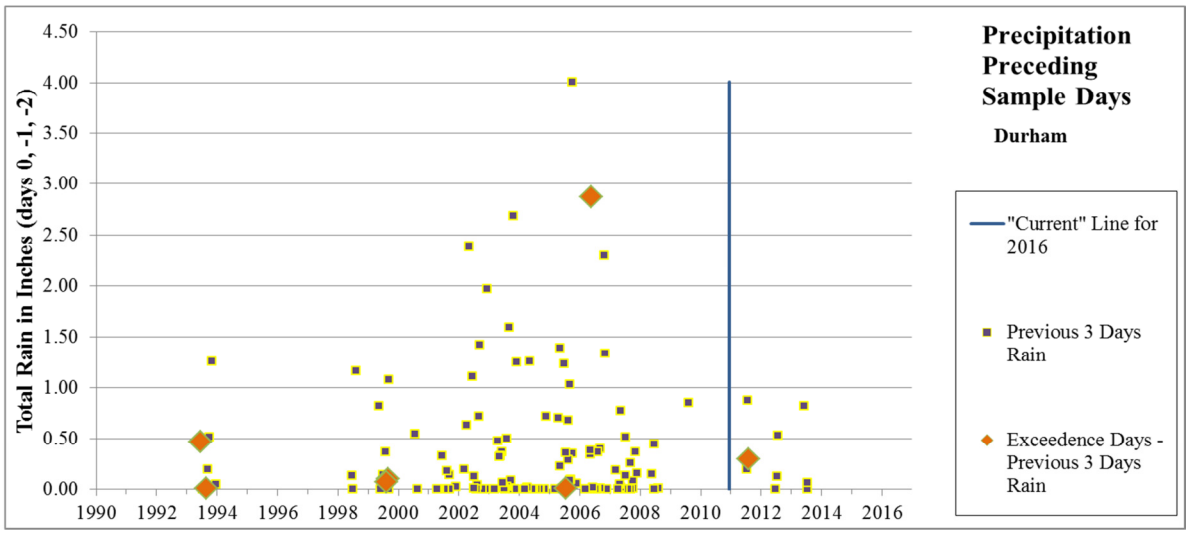
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
COCHECO RIVER - CENTRAL AVE DAM	NHIMP600030608-04	*Escherichia coli*	Dover	4A-P	2-M

Three geometric means within current cycle all are below applicable water quality criteria. Nine individual samples collected from 2011 – 2016, one exceedence of single sample criteria (8/22/2011, 470 cts. / 100 ml). Streamflow at gage 01072800 on day of single sample exceedence was 0.36 cfsm and rainfall for previous three days at Durham (USC00272174) was 0.30 inches. Samples included in 2016 cycle came from same station as previous cycles (07-CCH) and were collected under stream flow conditions of 0 – 2 cfsm (stream gage 01072800) and 3-day rainfall totals of 0 – 1 inches (Durham weather station). Prior exceedences typically came from samples collected mostly under low flow and minimal rainfall.


GEOMETRIC MEANS
COCHECO RIVER - CENTRAL AVE DAM (NHIMP600030608-04)
Counts / 100 mL
600
500
400
300
200
100
0
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016
Geomean MAGEX
Geomean Std
"Current" Line for 2016
E.COLI-GEO-CP
E.COLI-GEO-NCP


GRAB SAMPLES
COCHECO RIVER - CENTRAL AVE DAM (NHIMP600030608-04)
Counts / 100 mL
1,600
1,400
1,200
1,000
800
600
400
200
0
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016
Grab MAGEX
Grab Std
"Current" Line for 2016
E.COLI-GRAB-CP
E.COLI-GRAB-NCP


Gage CFSM on Sample Days
USGS 01072800 COCHECO RIVER NEAR ROCHESTER, NH.
Gage CFSM
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016
"Current" Line for 2016
CFSM from Gage
Gage on Exceedence Days

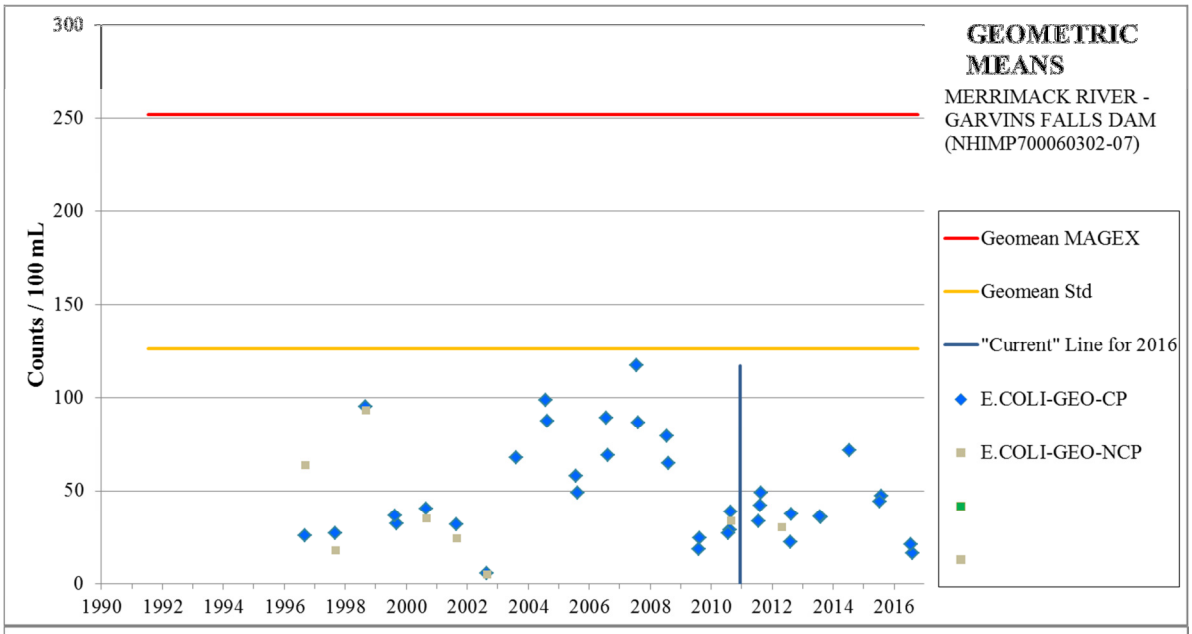


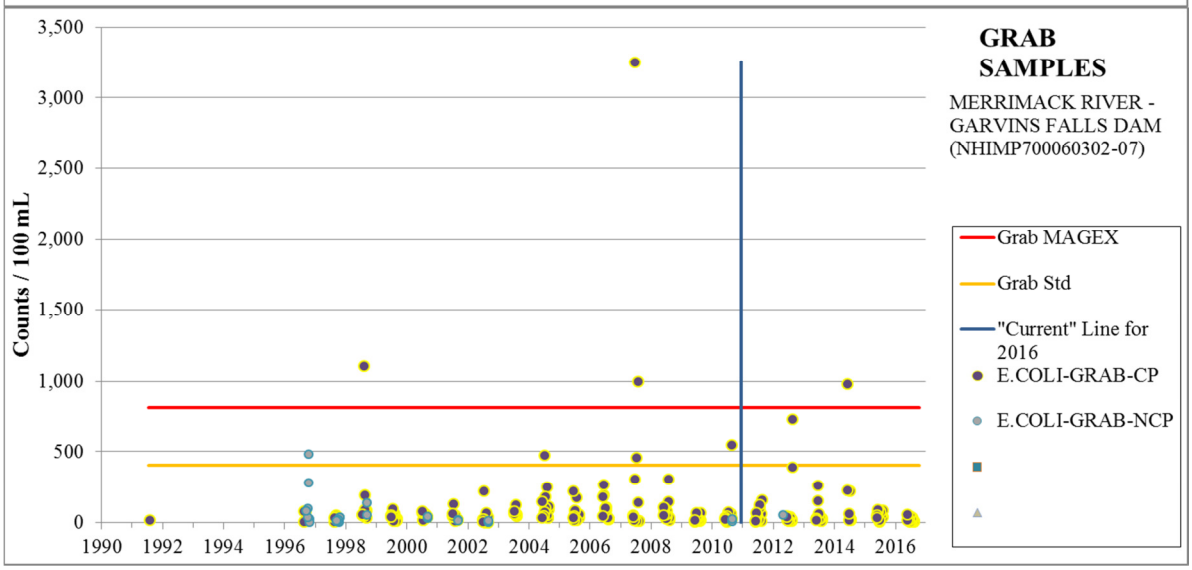
Notes:
E. COLI-GEO-CP = *Escherchia coli* geometric mean calculated from samples collected during the summer critical period.
E. COLI -GEO-NCP = *Escherchia coli* geometric mean calculated from samples collected outside the summer critical period.
E. COLI -GRAB-CP = *Escherchia coli* grab samples collected during the summer critical period.
E. COLI -GRAB-NCP = *Escherchia coli* grab samples collected outside the summer critical period.
"Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current". Available older data is provided for context. See the 2016 CALM for additional details.

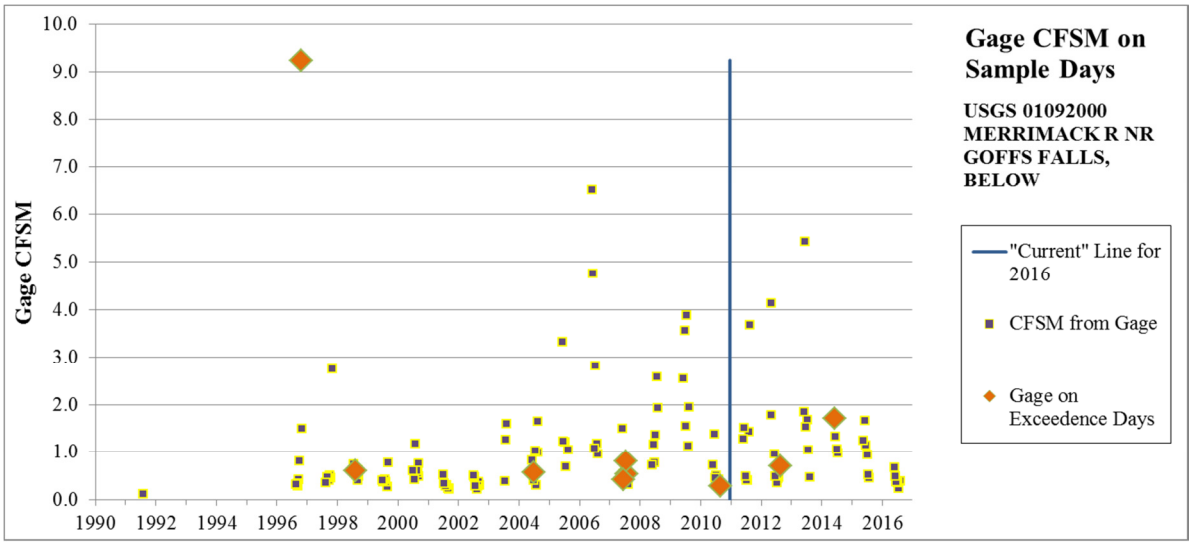
MERRIMACK RIVER - GARVINS FALLS DAM (NHIMP700060302-07)

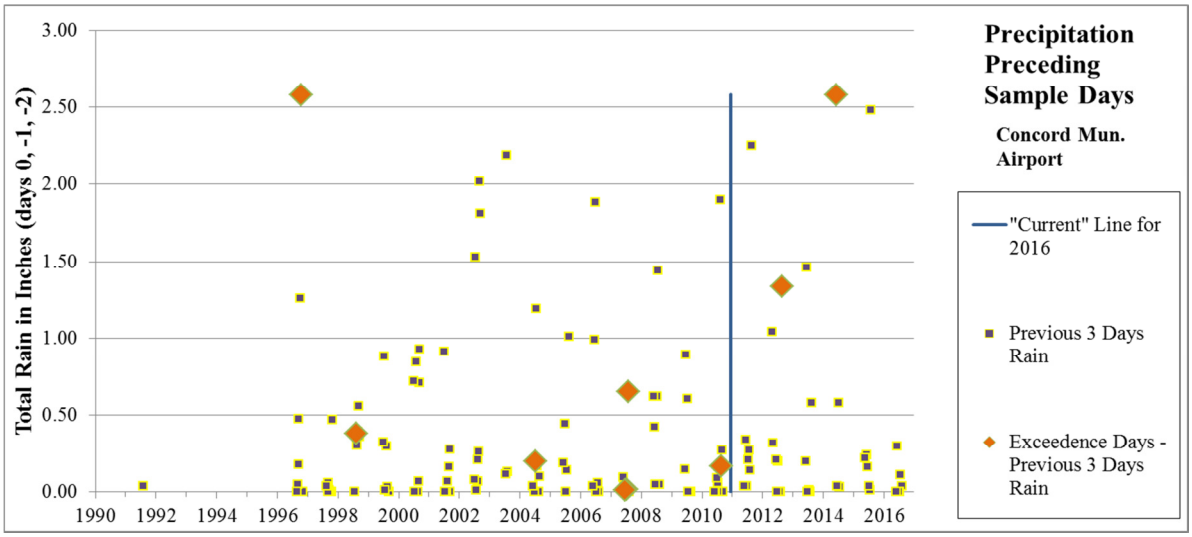
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
MERRIMACK RIVER - GARVINS FALLS DAM	NHIMP700060302-07	*Escherichia coli*	Concord	4A-M	2-M

No geometric mean exceedences in the current period for the 2016 cycle or previous cycles; 69 samples collected (UMMP-09 & UMMP-10) since 2011, 2 above single sample criteria (1 above MAGEX); samples collected under range of flows (0.23 – 5.43 cfsm; gage 01092000) and precipitation (0 – 2.58 inches in 3 days; Concord Airport). Single sample exceedences on 9/5/2012 and 6/26/14 occurred following 1.34 and 2.58 inches of rain in 3-days, respectively. However, ten samples collected following similar rainfall events between 1 – 2.58 inches of rain in past 3-days did not exceed single sample criteria. Therefore, the preponderance of evidence indicates that a majority of samples are within water quality criteria with only sporadic exceedences (2 of 69 samples, 3%). Regular sampling will continue to occur at site for foreseeable future.


GEOMETRIC MEANS
MERRIMACK RIVER - GARVINS FALLS DAM (NHIMP700060302-07)
Counts / 100 mL
300
250
200
150
100
50
0
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016
Geomean MAGEX
Geomean Std
"Current" Line for 2016
E.COLI-GEO-CP
E.COLI-GEO-NCP


GRAB SAMPLES
MERRIMACK RIVER - GARVINS FALLS DAM (NHIMP700060302-07)
Counts / 100 mL
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016
Grab MAGEX
Grab Std
"Current" Line for 2016
E.COLI-GRAB-CP
E.COLI-GRAB-NCP





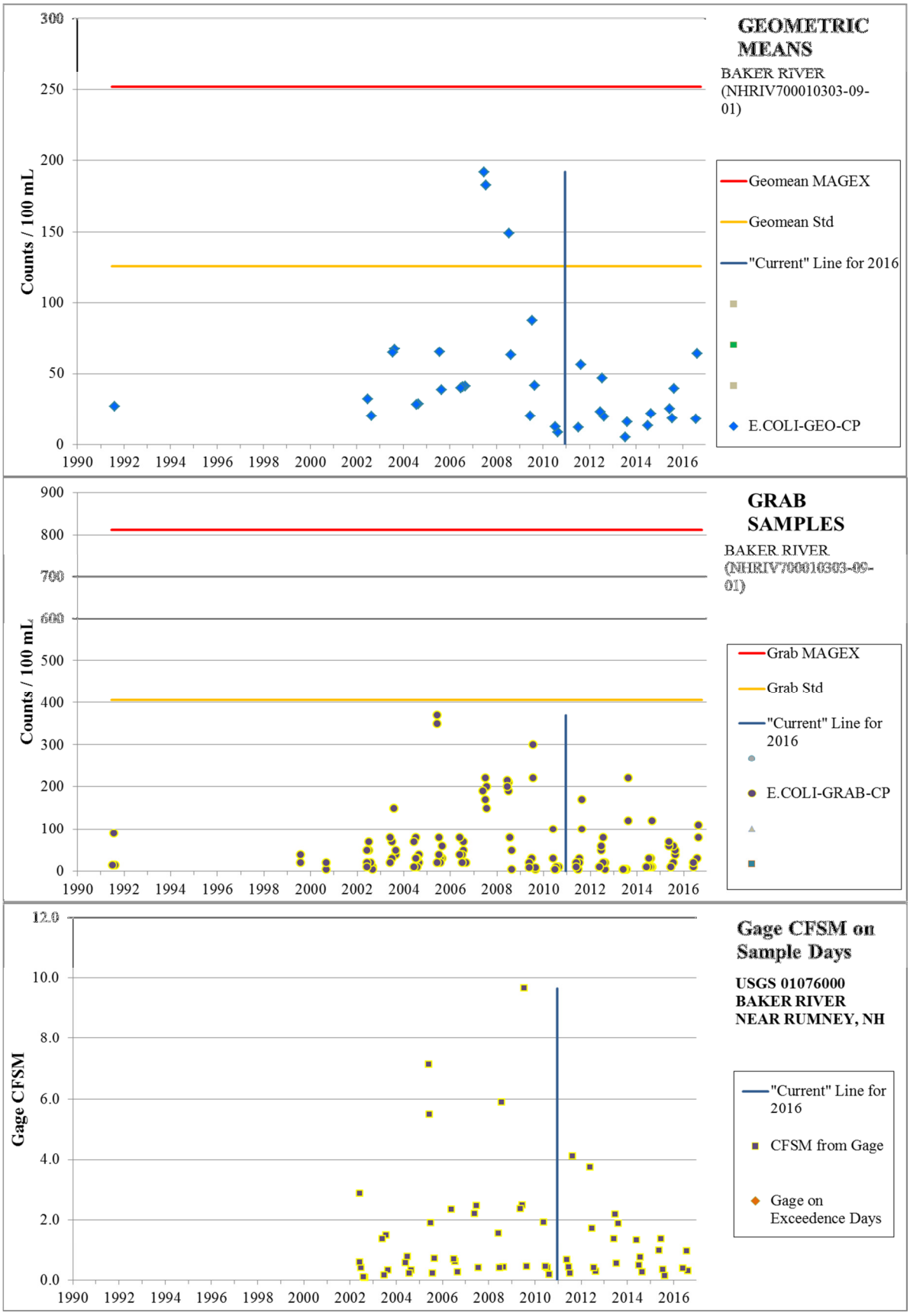
Notes:
E. COLI-GEO-CP = *Escherchia coli* geometric mean calculated from samples collected during the summer critical period.
E. COLI -GEO-NCP = *Escherchia coli* geometric mean calculated from samples collected outside the summer critical period.
E. COLI -GRAB-CP = *Escherchia coli* grab samples collected during the summer critical period.
E. COLI -GRAB-NCP = *Escherchia coli* grab samples collected outside the summer critical period.
"Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current". Available older data is provided for context. See the 2016 CALM for additional details.

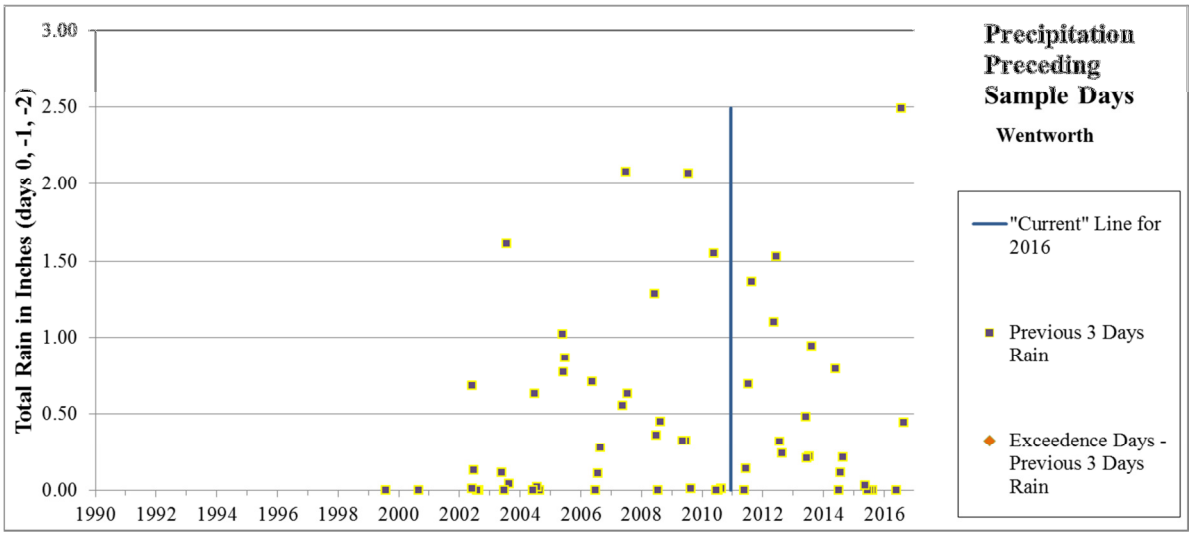
BAKER RIVER (NHRIV700010303-09-01)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
Baker River	NHRIV700010303-09-01	*Escherichia coli*	Wentworth	4A-M	2-G

Three geometric mean standard exceedences in 2007 and 2008 (192.3, 183.0, 149.1 cts/100mL) occurred at stations 07-BKR and 07A-BKR. These stations are typically collected on the same day and show similar results between them. The high grab samples that resulted in a high geometric mean occurred after varied amounts of rainfall in the past three days of the samples being collected (0.36-2.08 inches) and varied flow conditions (0.40- 2.45 cfsm). Multiple grab samples from both stations in current assessment period with varied precipitation and flow conditions resulting in no geometric mean exceedences. Baker River (NHRIV700010303-09-01) assessment category changed from 4A-M to

2-G based on data collected in the current assessment period.



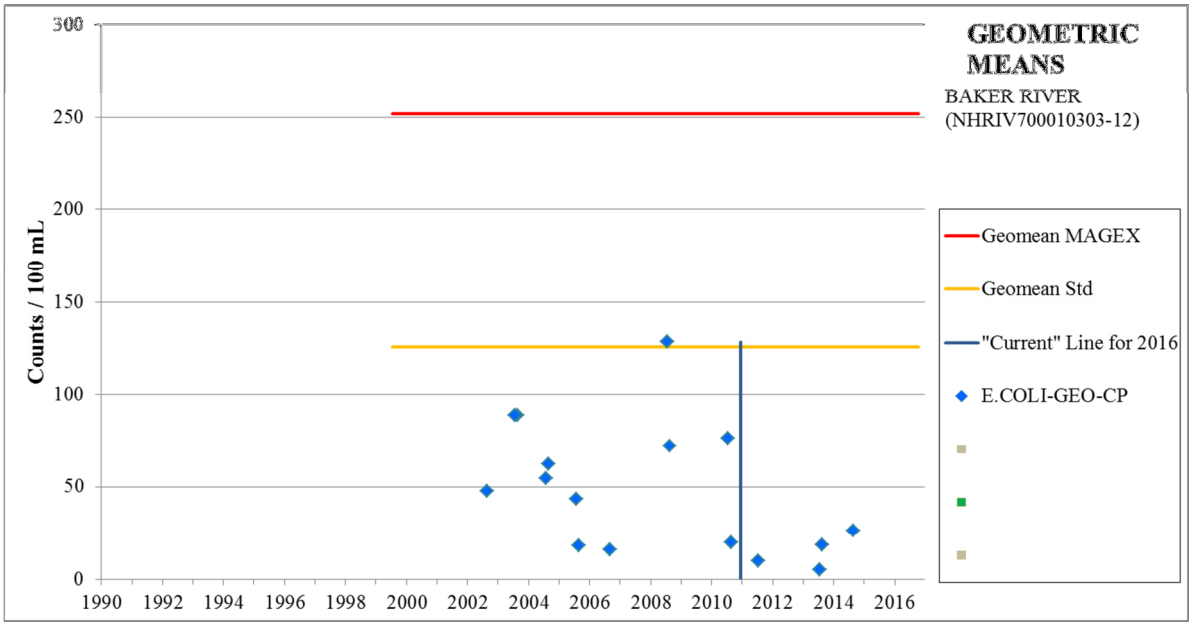


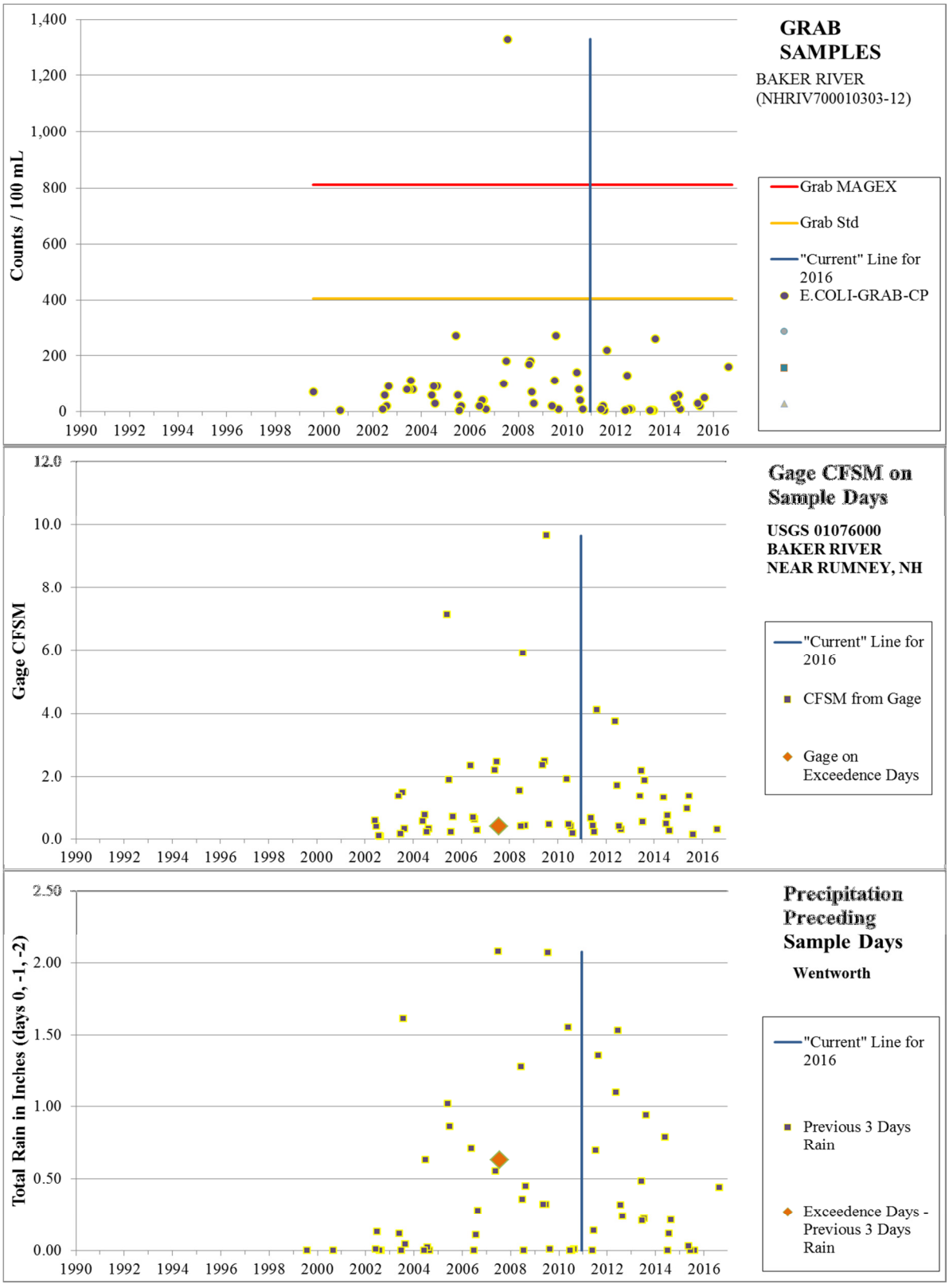
Notes:
E. COLI-GEO-CP = *Escherchia coli* geometric mean calculated from samples collected during the summer critical period.
E. COLI -GRAB-CP = *Escherchia coli* grab samples collected during the summer critical period.
"Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current". Available older data is provided for context. See the 2016 CALM for additional details.

BAKER RIVER (NHRIV700010303-12)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
Baker River	NHRIV700010303-12	*Escherichia coli*	Wentworth	4A-P	2-G

One historical geometric mean (129 cts/100mL) that had a corresponding high grab sample (1330 cts/100mL) at 06A-BKR that triggered the impairment. The high grab sample was collected after flow conditions of 0.40 cfsm on the Baker River in Rumney and 0.63 inches of rain collected at the Wentworth rain gage. Since the impairment determination, many grab samples were collected and four geometric means calculated in similar flow and rainfall condition with no exceedences all from station 06A-BKR. Baker River (NHRIV700010303-12) assessment category changed from 4A-P to 2-G based on data collected in the current assessment period.



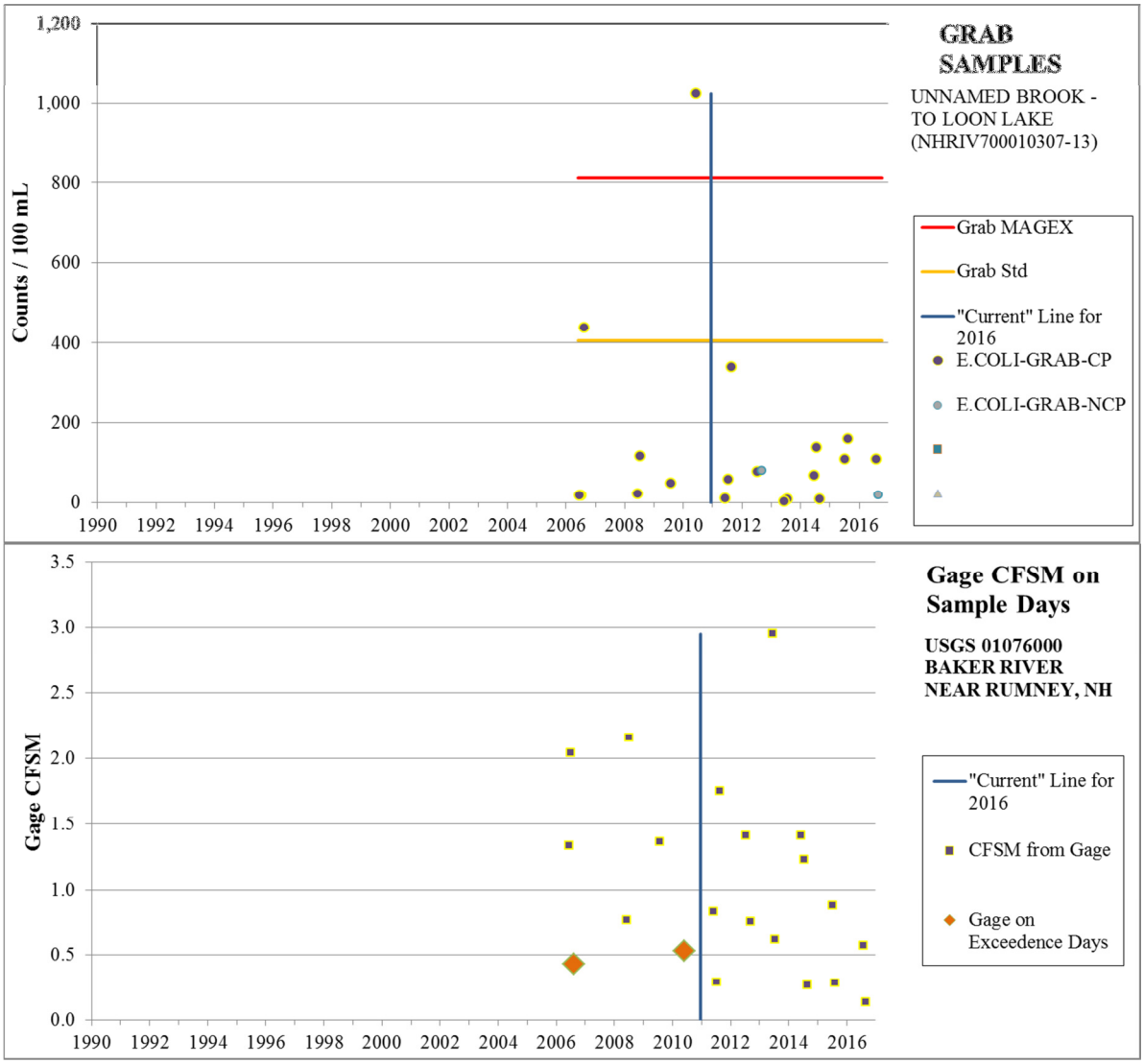


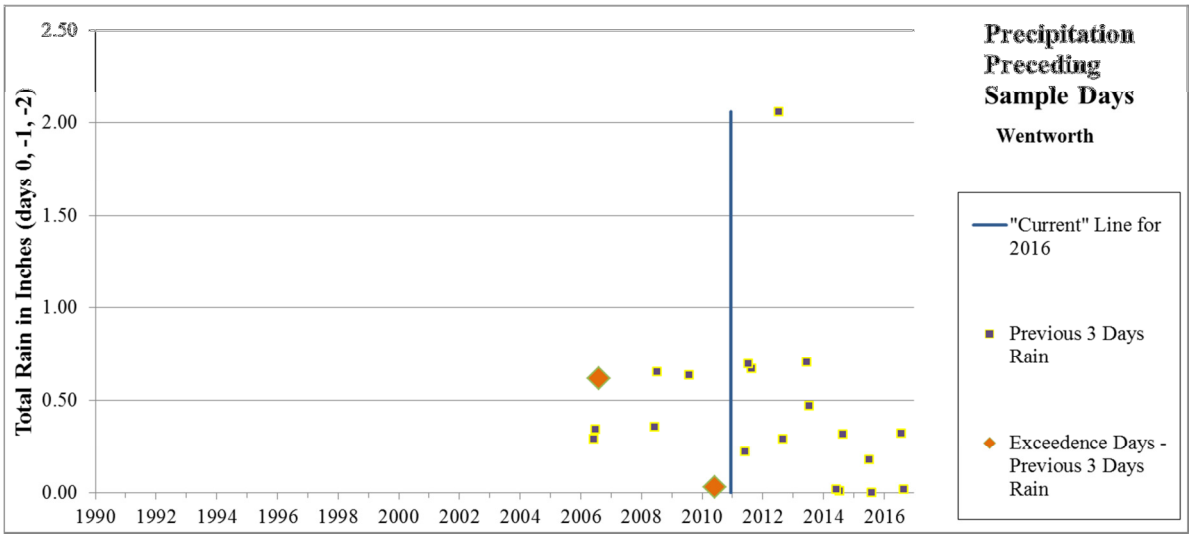
Notes:
E. COLI-GEO-CP = *Escherchia coli* geometric mean calculated from samples collected during the summer critical period.
E. COLI -GRAB-CP = *Escherchia coli* grab samples collected during the summer critical period.
"Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current". Available older data is provided for context. See the 2016 CALM for additional details.

UNNAMED BROOK - TO LOON LAKE (NHRIV700010307-13)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
UNNAMED BROOK - TO LOON LAKE	NHRIV700010307-13	*Escherichia coli*	Plymouth	4A-P	2-M

Fourteen grab samples were collected in the current period for the 2016 assessment and all are below the standard. Samples have been collected at either station LOOPLYI1or LOOPLYI1L. The samples have been collected in similar conditions such as those previous high grab samples that triggered the impairment. Unnamed Brook to Loon Lake (NHRIV700010307-13) changed from assessment category 4A-P to 2-M.





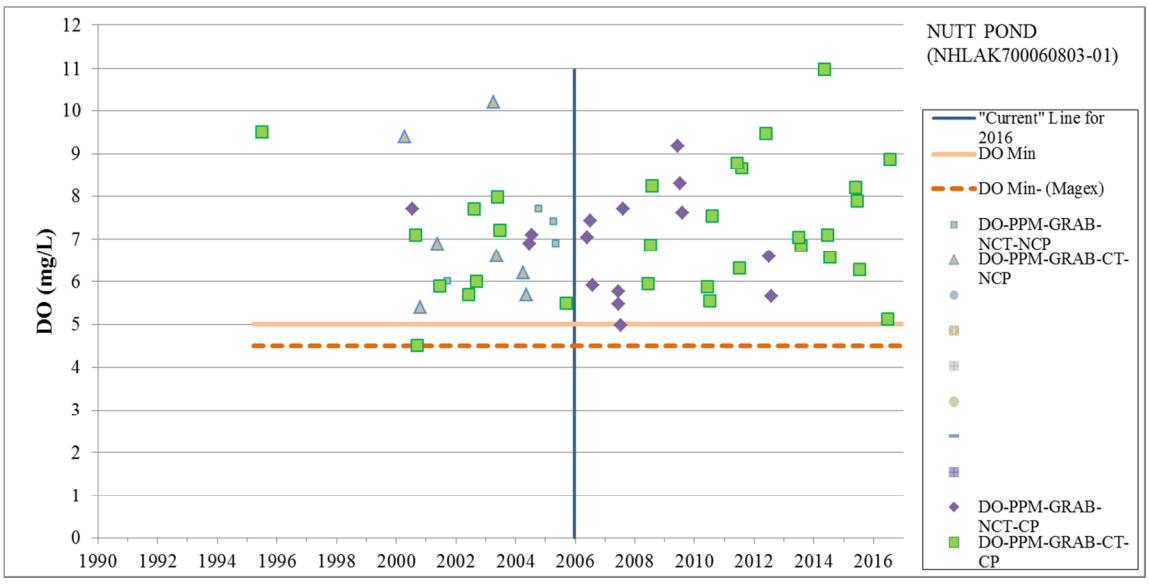
Notes:
E. COLI -GRAB-CP = *Escherchia coli* grab samples collected during the summer critical period.
E. COLI -GRAB-NCP = *Escherchia coli* grab samples collected outside the summer critical period.
"Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current". Available older data is provided for context. See the 2016 CALM for additional details.

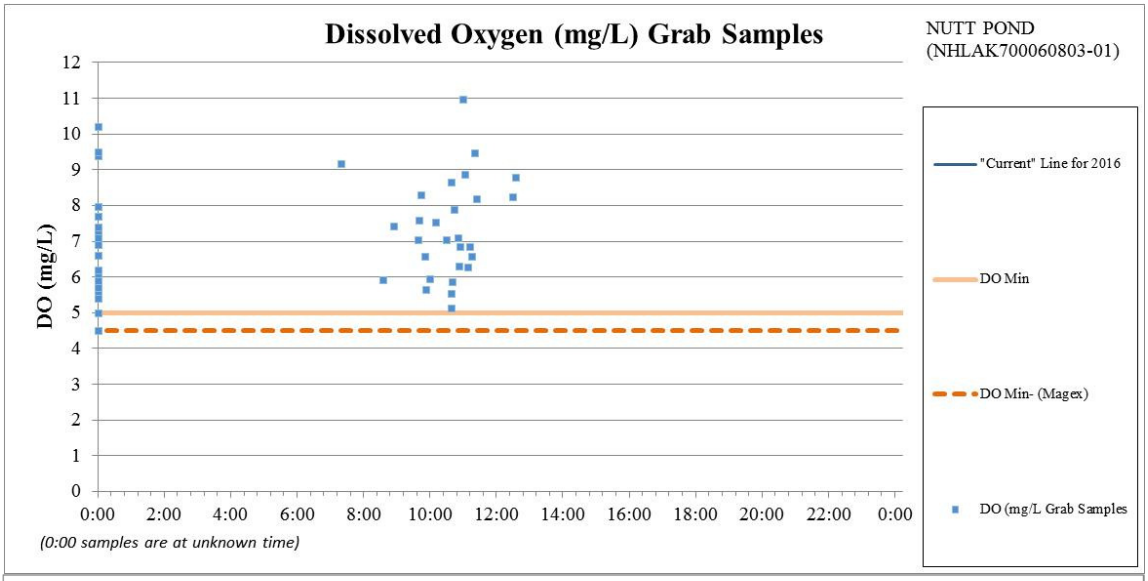
Dissolved Oxygen (Aquatic Life Use Support)

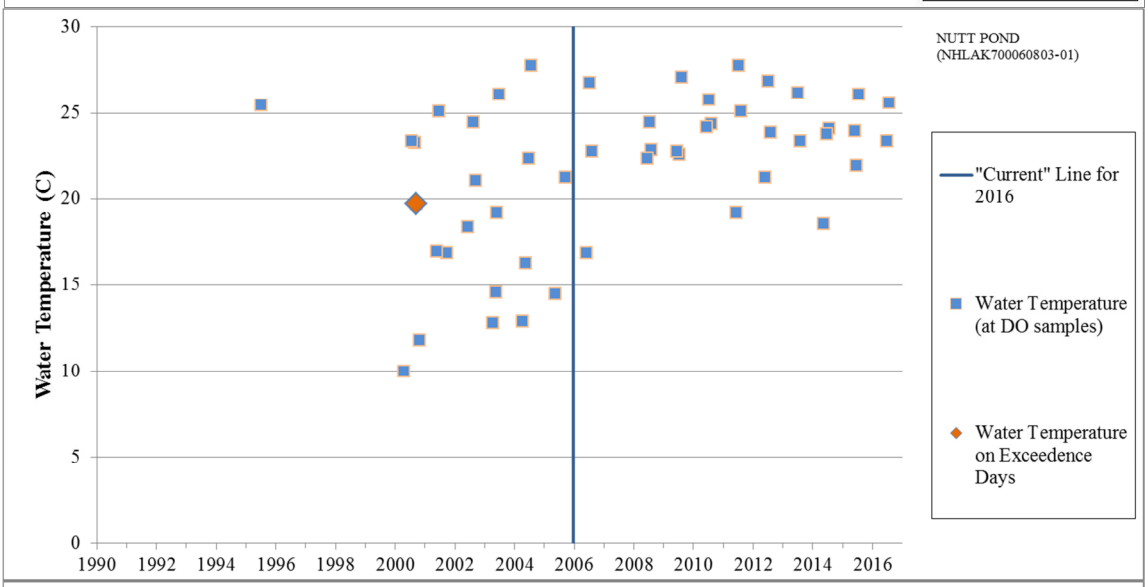
NUTTS POND (NHLAK700060803-01)

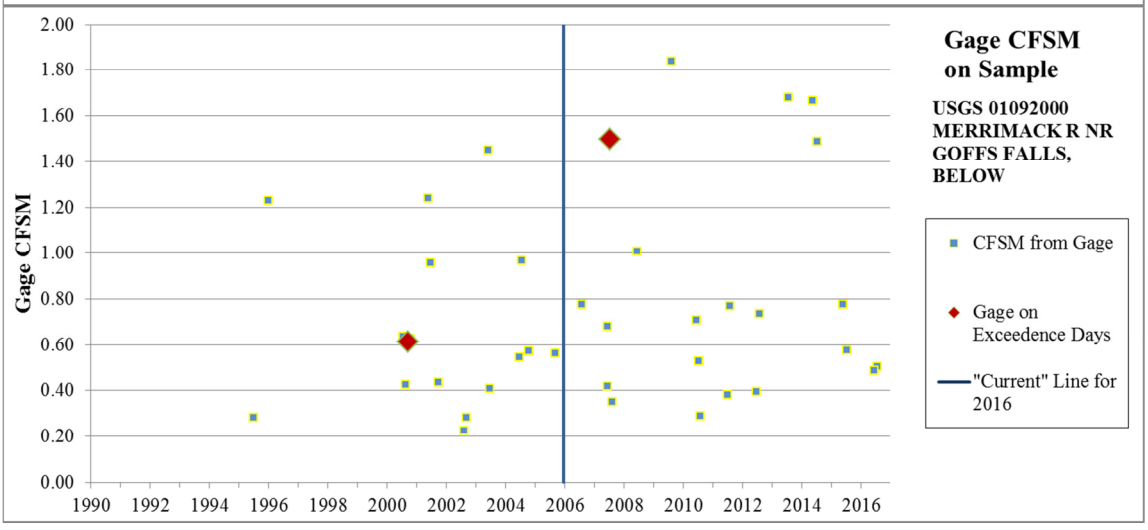
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
NUTTS POND	NHLAK700060803-01	Dissolved Oxygen (mg/L)	MANCHESTER	4A-M	2-M

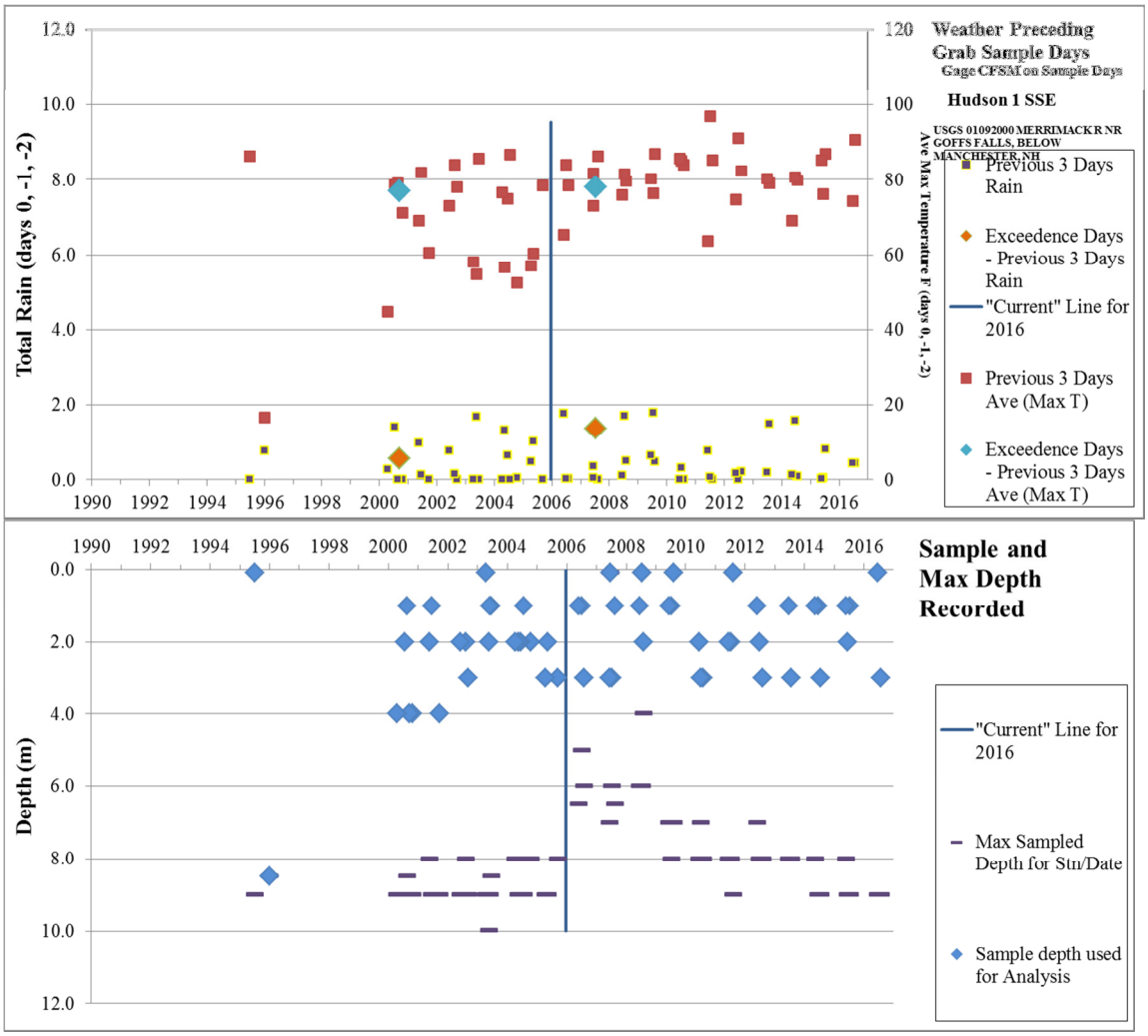
2016: Class B waterbody. Epilimnetic DO ppm values meet standards, with n=2 exceedences of the 5 ppm minimum, though both samples are within the range of meter error. The MAGEX from September of 2000 has aged out, and that trend has not persisted with DO ppm in the waterbody. Based on the data collected between 2006 and 2016, the majority of the samples are attaining standards, and the 10% exceedence rule is not met. Nutts Pond is delisted and assessed as 2-M based on the data from this assessment round.




Dissolved Oxygen (mg/L) Grab Samples
NUTT POND
(NHLAK700060803-01)
DO (mg/L)
"Current" Line for 2016
DO Min
DO Min- (Magex)
DO (mg/L Grab Samples
(0:00 samples are at unknown time)


NUTT POND
(NHLAK700060803-01)
Water Temperature (C)
"Current" Line for 2016
Water Temperature (at DO samples)
Water Temperature on Exceedence Days

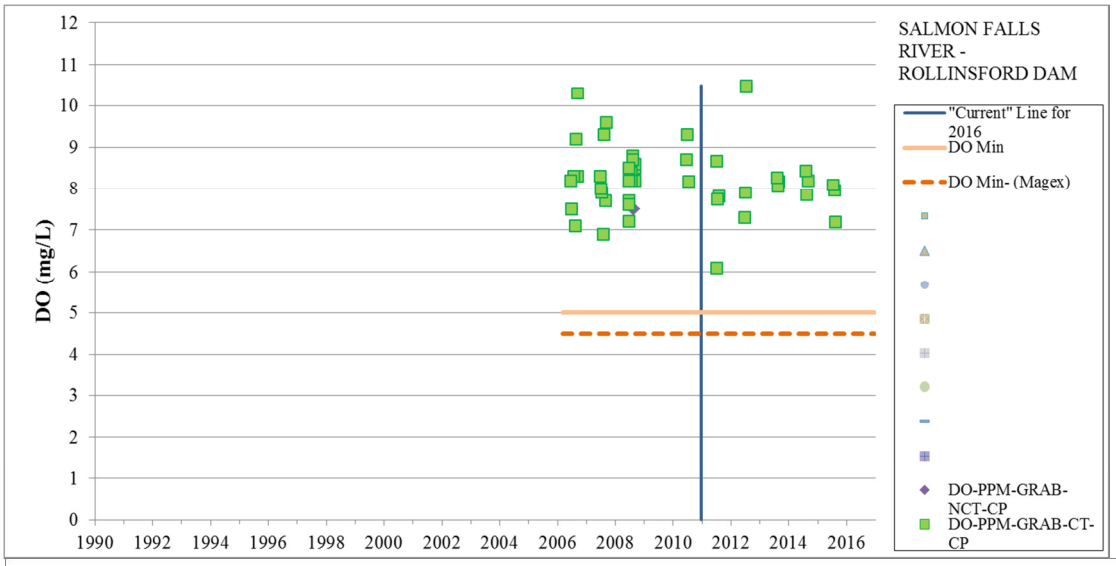

Gage CFSM on Sample
USGS 01092000 MERRIMACK R NR GOFFS FALLS, BELOW
Gage CFSM
CFSM from Gage
Gage on Exceedence Days
"Current" Line for 2016

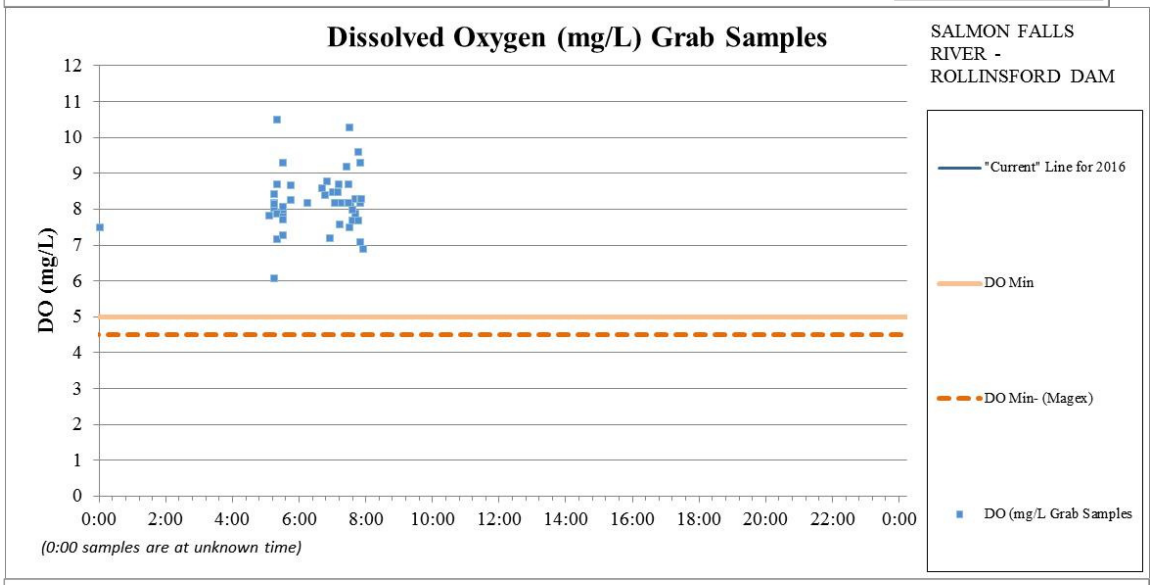


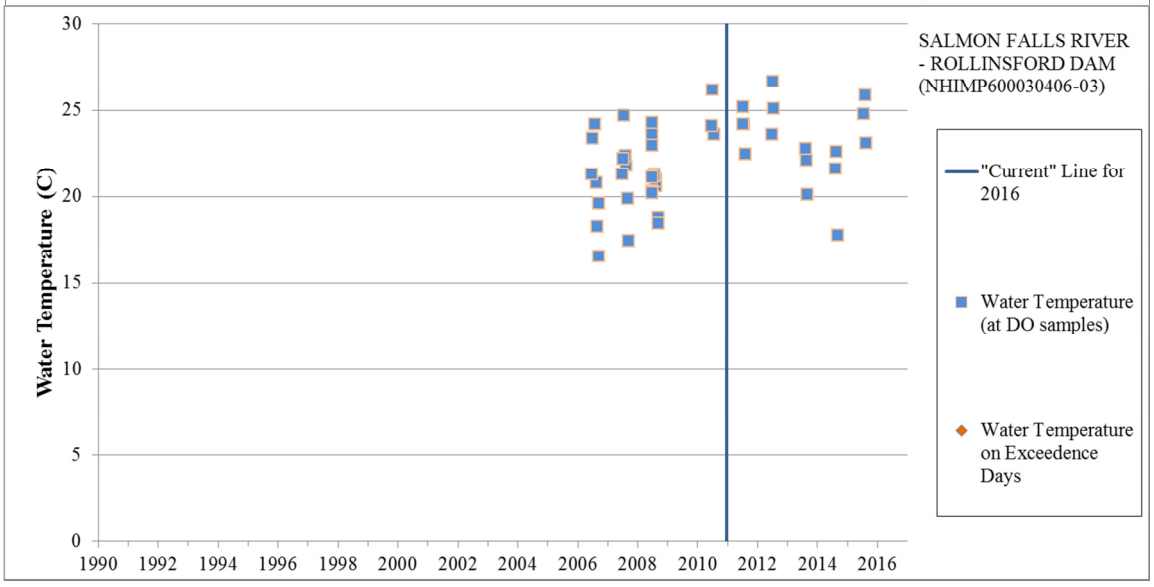
SALMON FALLS RIVER-ROLLINSFORD DAM (NHIMP600030406-03)

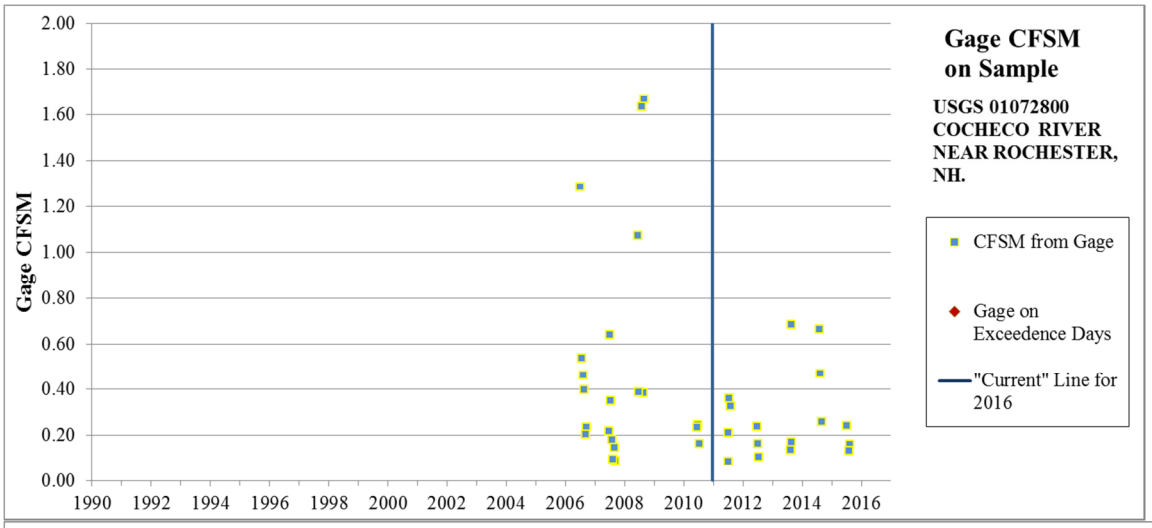
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
SALMON FALLS RIVER-ROLLINSFORD DAM	NHIMP600030406-03	Dissolved Oxygen (mg/L)	ROLLINSFORD	4A-M	2-G

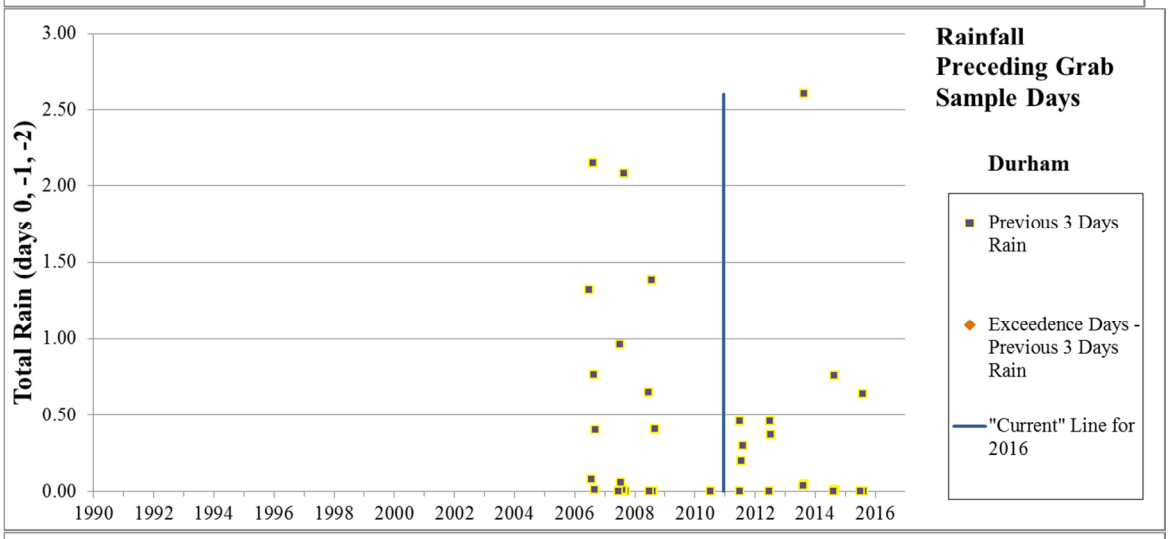
2016: Class B waterbody. 57 acre impoundment. Data appear to be consistently good, supporting delist.

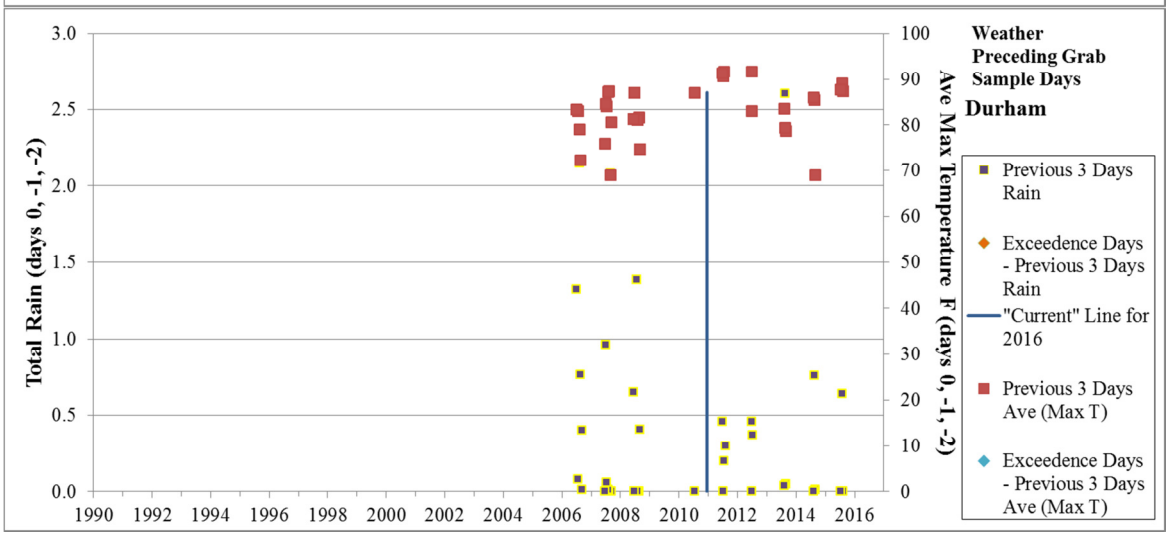

SALMON FALLS RIVER - ROLLINSFORD DAM
"Current" Line for 2016
DO Min
DO Min- (Magex)
DO-PPM-GRAB-NCT-CP
DO-PPM-GRAB-CT-CP
DO (mg/L)

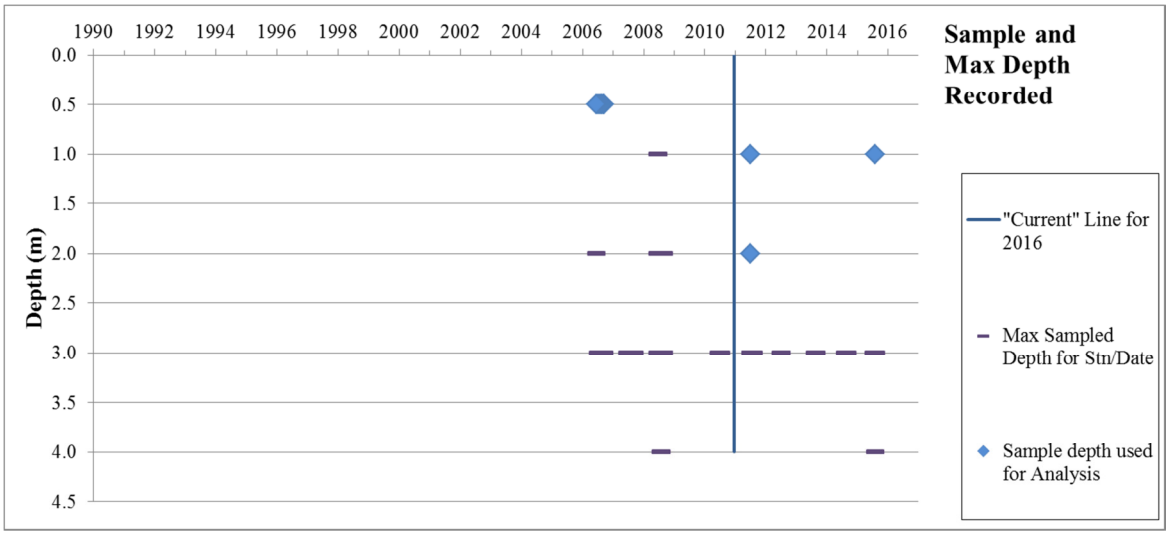

Dissolved Oxygen (mg/L) Grab Samples
SALMON FALLS RIVER - ROLLINSFORD DAM
"Current" Line for 2016
DO Min
DO Min- (Magex)
DO (mg/L Grab Samples
DO (mg/L)
(0:00 samples are at unknown time)


SALMON FALLS RIVER - ROLLINSFORD DAM (NHIMP600030406-03)
"Current" Line for 2016
Water Temperature (at DO samples)
Water Temperature on Exceedence Days
Water Temperature (C)


Gage CFSM on Sample
USGS 01072800 COCHECO RIVER NEAR ROCHESTER, NH.
Gage CFSM
CFSM from Gage
Gage on Exceedence Days
"Current" Line for 2016


Rainfall Preceding Grab Sample Days
Durham
Total Rain (days 0, -1, -2)
Previous 3 Days Rain
Exceedence Days - Previous 3 Days Rain
"Current" Line for 2016


Weather Preceding Grab Sample Days
Durham
Total Rain (days 0, -1, -2)
Ave Max Temperature F (days 0, -1, -2)
Previous 3 Days Rain
Exceedence Days - Previous 3 Days Rain
"Current" Line for 2016
Previous 3 Days Ave (Max T)
Exceedence Days - Previous 3 Days Ave (Max T)

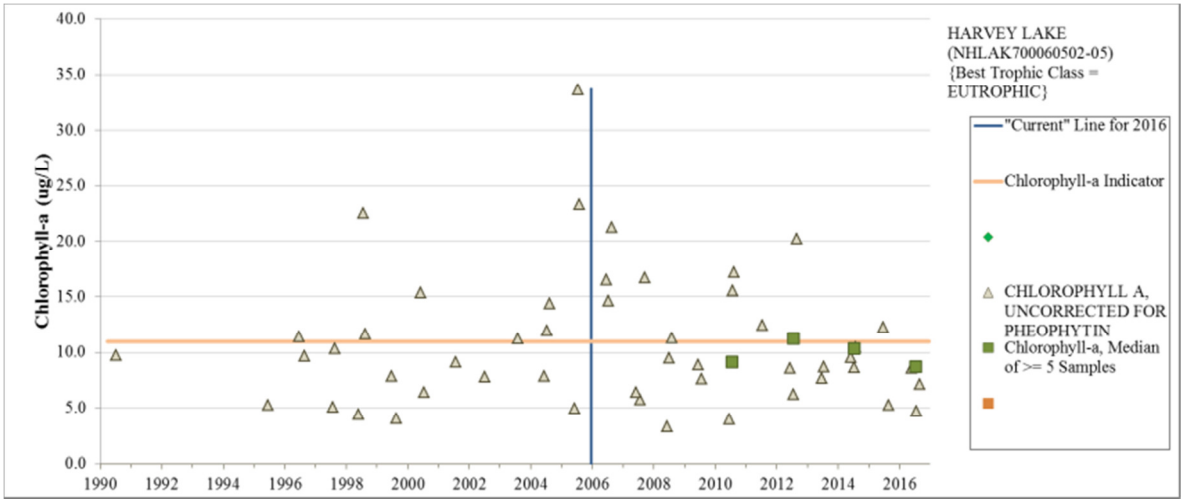


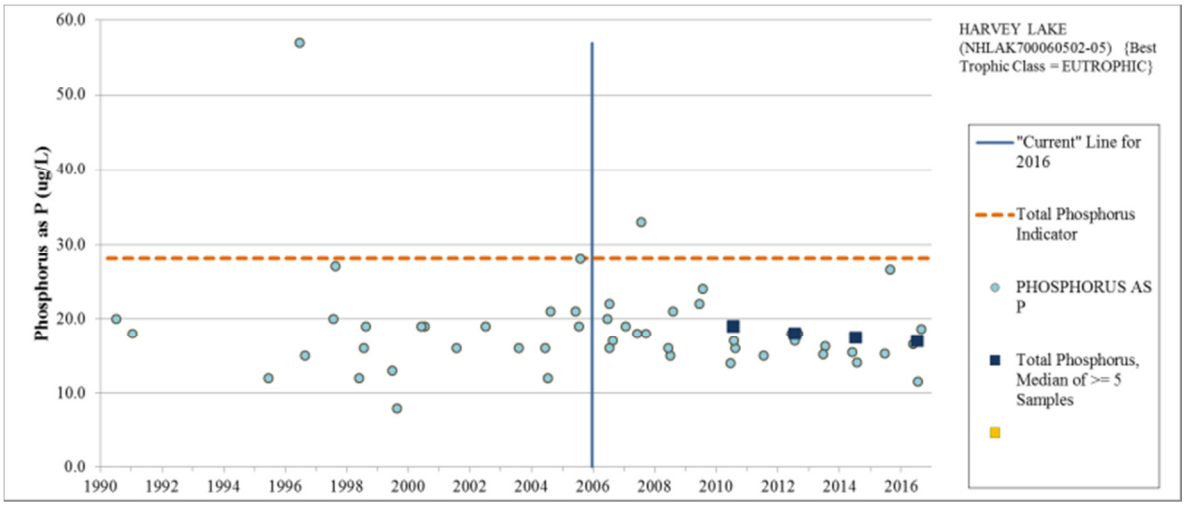
Chlorophyll-a/Total Phosphorus (Aquatic Life Use Support)

HARVEY LAKE (NHLAK700060502-05)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
HARVEY LAKE	NHLAK700060502-05	Chlorophyll-a	Northwood	4A-M	2-M
		Total Phosphorus		4A-M	2-M

The median chlorophyll-a value has consistently been below threshold for Eutrophic lakes three of the last four assessment cycles. The 2012 cycle, which impaired chlorophyll-a, did so based upon a median chlorophyll-a value of 11.26 ug/L where the threshold is 11.0 ug/L. The 2012 impairment may have been a bit premature. The pond is regularly monitored through the Volunteer Lake Assessment Program (VLAP) and VLAP data indicate stable chlorophyll levels generally below threshold since 2008. A total phosphorus TMDL was completed and approved for Harvey Lake in 2012. Total phosphorus medians have remained below the threshold for all assessment cycles and the impairment for total phosphorus was driven by the stressor/response matrix.




HARVEY LAKE
(NHLAK700060502-05) {Best Trophic Class = EUTROPHIC}
"Current" Line for 2016
Total Phosphorus Indicator
PHOSPHORUS AS P
Total Phosphorus, Median of >= 5 Samples
Phosphorus as P (ug/L)
60.0
50.0
40.0
30.0
20.0
10.0
0.0
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016

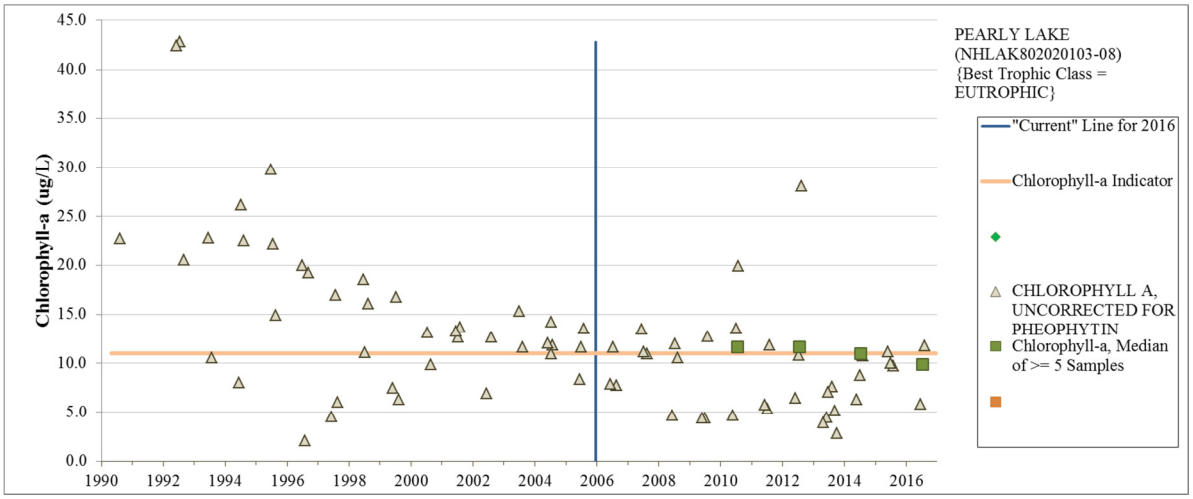
PEARLY POND (NHLAK802020103-08)

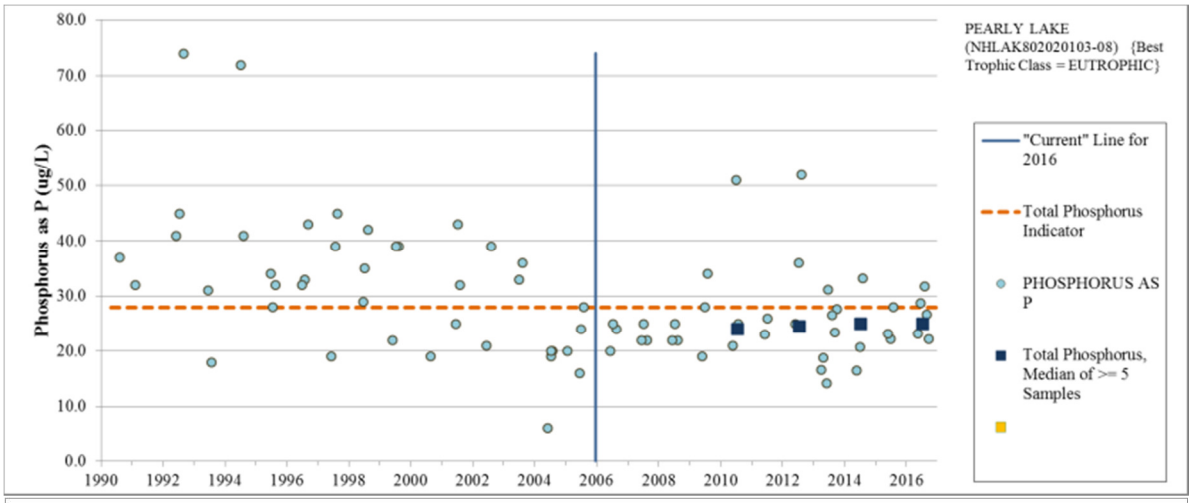
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
PEARLY POND	NHLAK802020103-08	Chlorophyll-a	Rindge	4A-M	2-M
		Total Phosphorus		4A-M	2-M

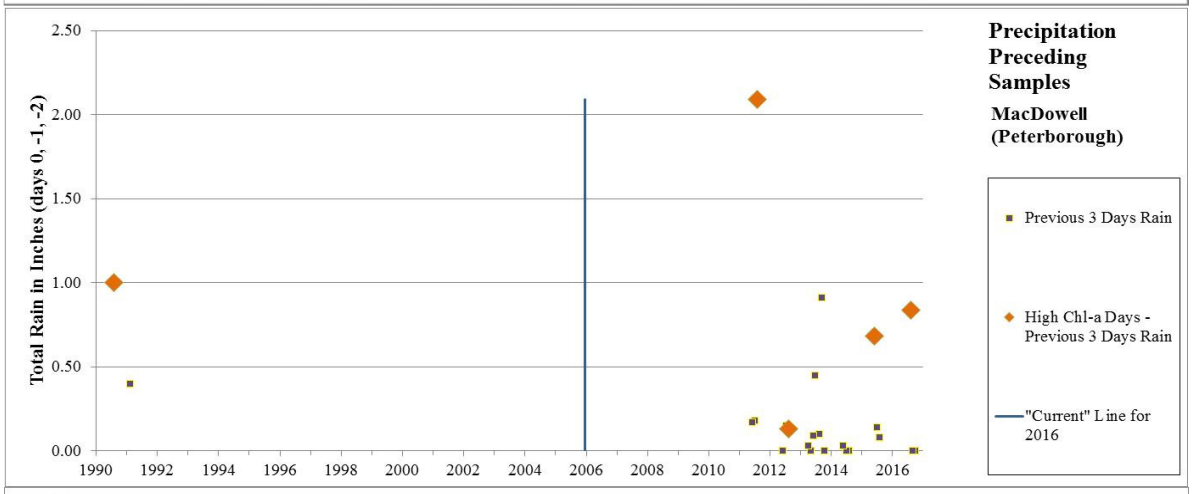
Chlorophyll-a median has remained below the threshold for Eutrophic lakes in the 2014 and now 2016 assessment cycles. VLAP data indicate significant decreases in chlorophyll-a and total phosphorus since monitoring began. TMDL completed in 2014. The lake association and Franklin Pierce University have conducted enhanced monitoring since the TMDL completion and applied for and received a 2016 319 grant for implementation activities to reduce phosphorus loading including: stormwater controls, waterfowl control, wastewater, and septic inputs. With management activities on-going it is expected that the chlorophyll-a and phosphorus levels will continue to decline or at least remain below the threshold. The high chlorophyll value measured in August of 2012 was during a dry period with no flow into or out of the pond. Samples have been collected in similar conditions since 2012 and algal growth has remained lower.

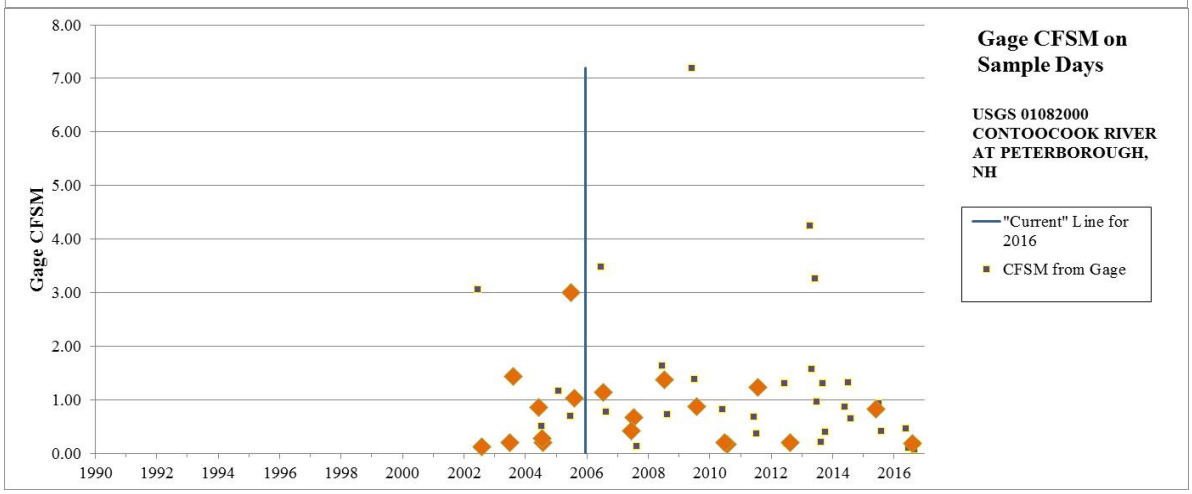
From the Pearly Pond TMDL: Successful implementation of this TMDL will not be based on meeting the in-lake target TP concentration of 14 ug/l or the reduction target of 44% (105 kg/yr). Rather, compliance will be based on continued lake monitoring and assessment of monitoring results using the methods described for assessing water quality standards attainment in the most recent version of the Consolidated Assessment Listing Methodology (CALM) for the response variables (DO, cyanobacteria, and chl a), with the exception that the mean and peak chl a thresholds will be 5 and 17 ug/L respectively.

From 1967 to 2008 (41 years), the Franklin Pierce University (FPU) wastewater treatment plant (WWTP) discharged to a wetland in the Mountain Road tributary sub watershed of Pearly Lake. The National Pollutant Discharge Elimination System (NPDES) permit number for this discharge was NH0101044. In 2009, the University eliminated this surface water discharge when it completed construction and began operation of a rapid infiltration basin (RIB) system to treat it's wastewater via groundwater infiltration.









BABOOSIC LAKE (NHLAK700060905-01-01)

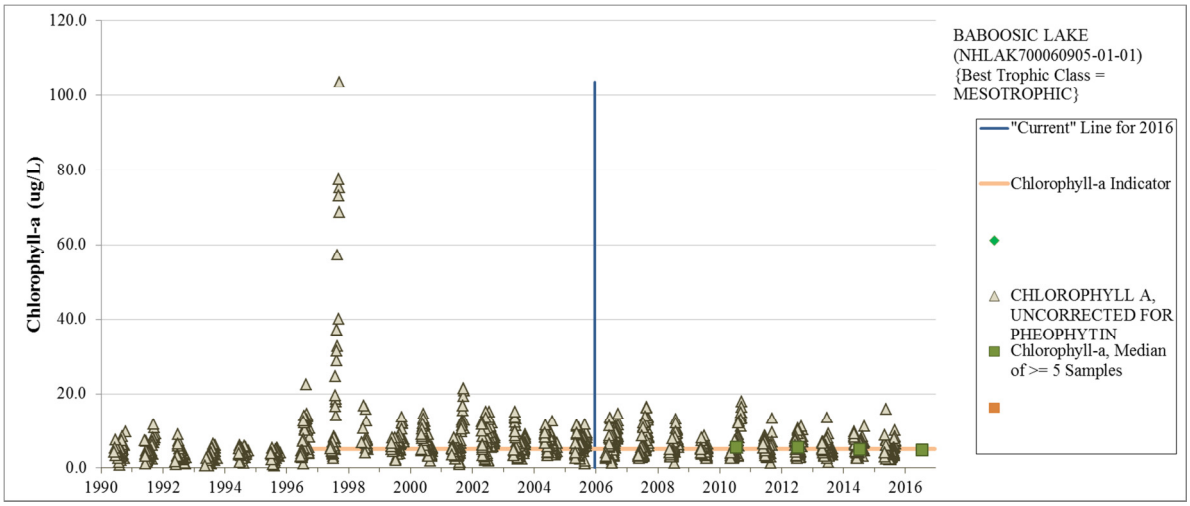
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
BABOOSIC LAKE	NHLAK700060905-01-01	Chlorophyll-a	Amherst	4A-M	2-M
		Total Phosphorus		4A-M	3-PNS

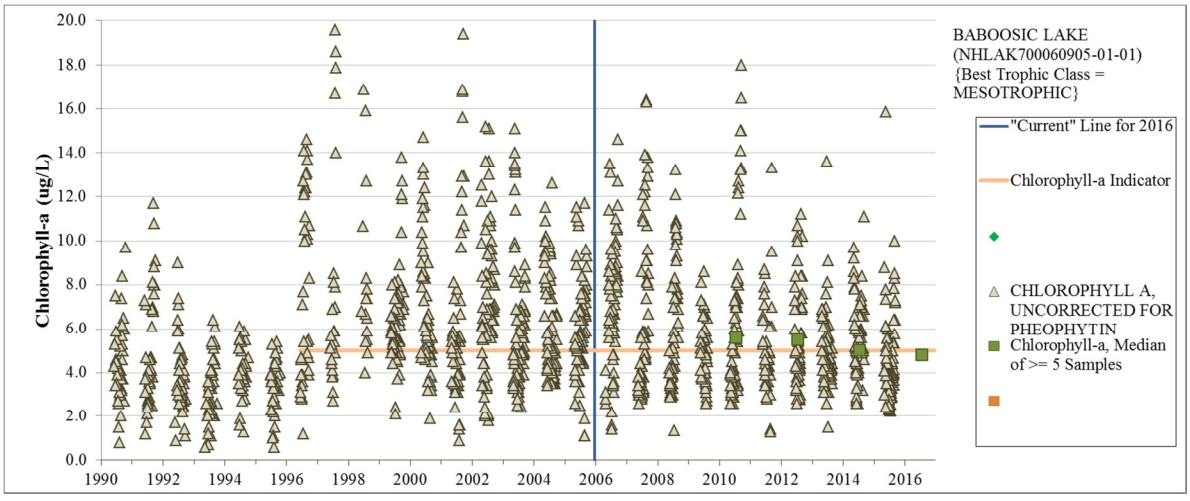
The chlorophyll-a median value was approximately equal to the threshold in 2014 assessment cycle and has decreased below the median as calculated for the 2016 assessment cycle. The lake participates in the UNH Lay Lakes Monitoring Program (LLMP) and the data indicate decreased chlorophyll-a during the period 2006-2015 and

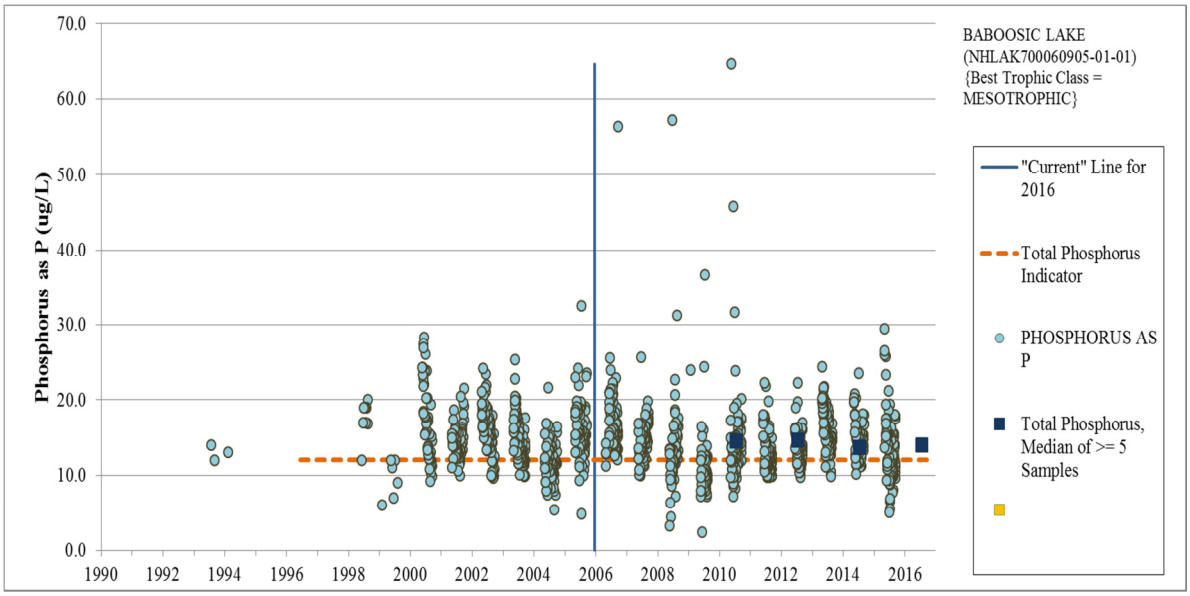
decreasing total phosphorus levels since 2000.

In 2002, the Town of Amherst, local residents, and NHDES began working to develop plans for improving septic systems near Baboosic Lake's Washer Cove. Many homes were known to have failed septic systems, systems that were routinely inundated, or systems that were otherwise severely deficient in meeting modern design standards. Four project phases used resources from the State, EPA, the Town, and system-users to address this situation by designing and constructing a new community septic system. The system was fully completed in 2009. It serves 18 residences which had the highest priority problems. The effluent disposal area is located on Town land at higher elevation and greater distance from the Lake. The homes each have sealed septic tanks which pump effluent up to the modern effluent disposal area for proper treatment.

The Baboosic Lake Association (BLA) in cooperation with NHDES began developing a watershed restoration plan to address other areas of concern in 2006. The completed plan, and subsequent plan updates are being used to prioritize corrective actions to reduce sediment and nutrient loading to the lake. The primary stormwater issues in the watershed are due to runoff and erosion from aging infrastructure or unpaved camp-type roads with little or no stormwater control. The BLA has been working with NHDES, private landowners, and the Towns of Amherst and Merrimack to install a series of stormwater runoff improvements and best management practices (BMPs) such as raingardens and infiltration trenches. Two phases of BMP implementation projects have been completed to date, and a third phase is currently under way.






70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Phosphorus as P (ug/L)
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
BABOOSIC LAKE
(NHLAK700060905-01-01)
{Best Trophic Class =
MESOTROPHIC}
"Current" Line for 2016
Total Phosphorus Indicator
PHOSPHORUS AS P
Total Phosphorus, Median of >= 5 Samples

Chlorophyll-a (Primary Contact recreation [i.e. Swimming])

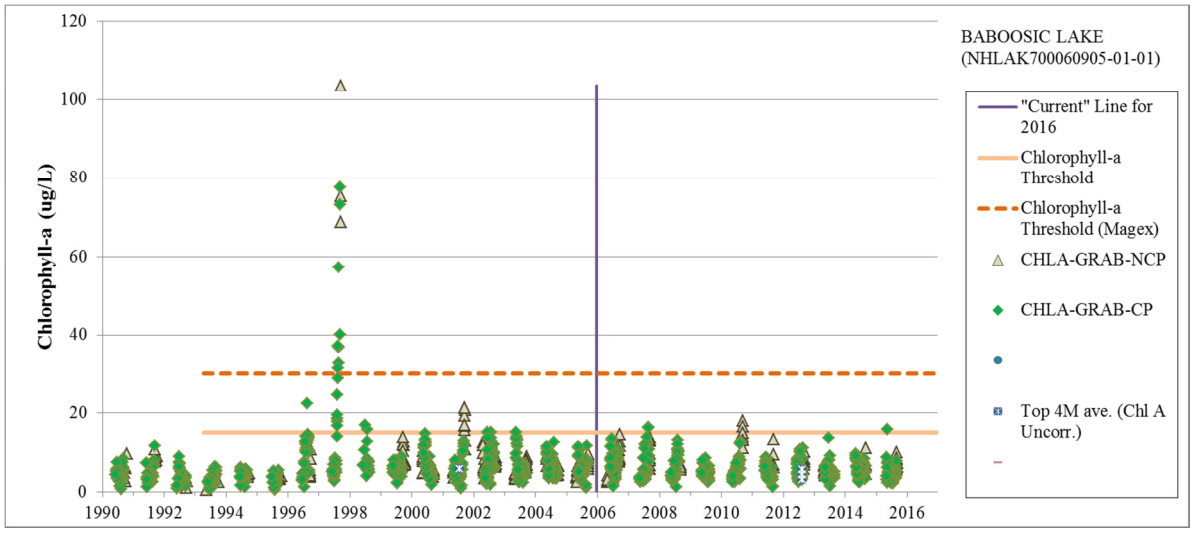
BABOOSIC LAKE (NHLAK700060905-01-01)

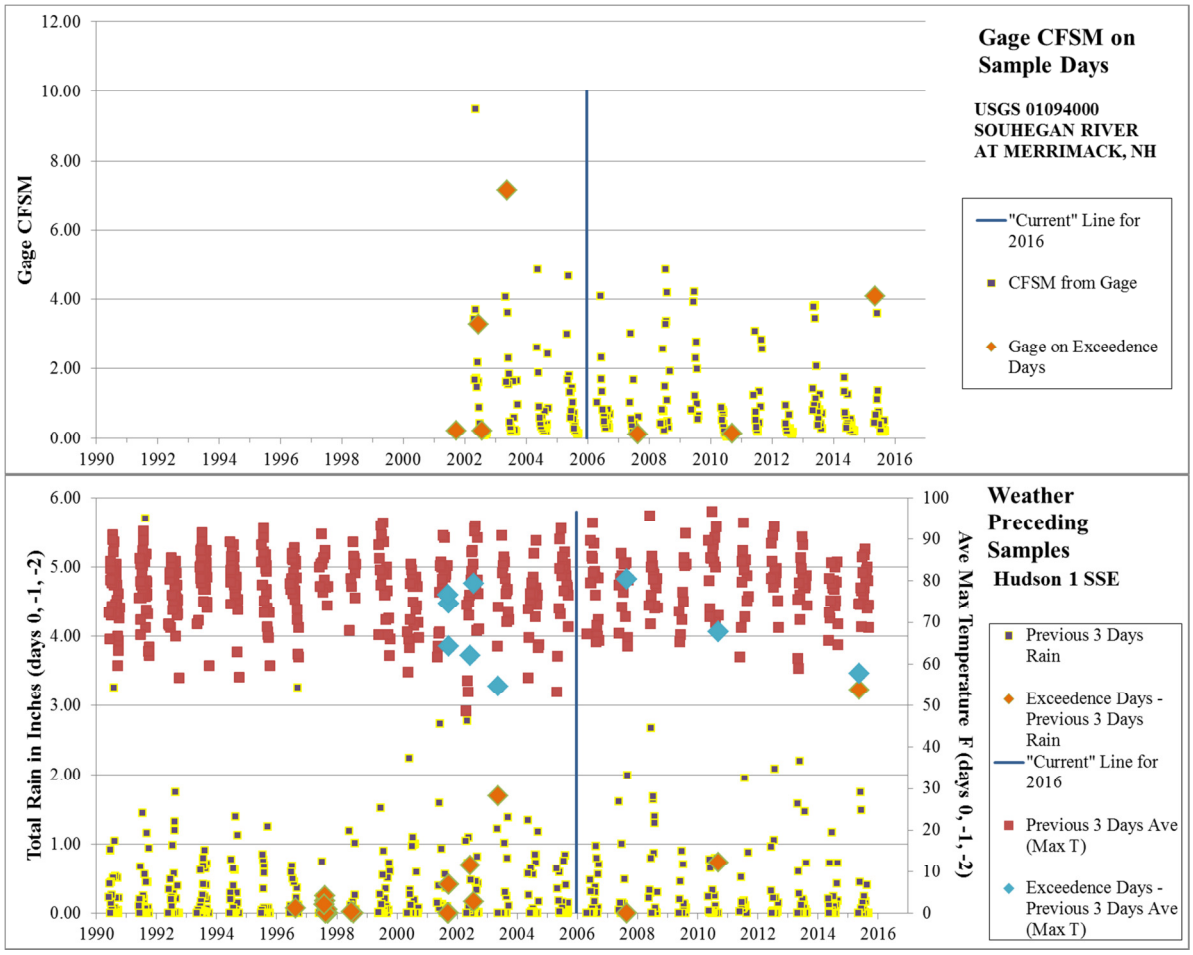
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
BABOOSIC LAKE	NHLAK700060905-01-01	Chlorophyll (PCR)	AMHERST	4A-M	2-M

2016: During the current periods for the 2016 cycle there were five out of 619 samples that exceeded the WQS. Two of the exceedences were in the critical period and three were in the non-critical period. The exceedences happened during both dry and wet weather. Given that less than 1% of samples collected in 10 years preceding this assessment, Baboosic Lake has been assessed and fully supporting.

In 2002, the Town of Amherst, local residents and NHDES began working to develop plans for improving septic systems near Baboosic Lake's Washer Cove. Many homes were known to have failed septic systems, systems that were routinely inundated, or systems that were otherwise severely deficient in meeting modern design standards. Four project phases used resources from the State, EPA, the Town, and system-users to address this situation by designing and constructing a new community septic system. The system was fully completed in 2009. It serves 18 residences that had the highest priority problems. The effluent disposal area is located on Town land at higher elevation and greater distance from the Lake. The homes each have sealed septic tanks which pump effluent up to the modern effluent disposal area for proper treatment.

The Baboosic Lake Association (BLA) in cooperation with NHDES began developing a watershed restoration plan to address other areas of concern in 2006. The completed plan, and subsequent plan updates are being used to prioritize corrective actions to reduce sediment and nutrient loading to the lake. The primary stormwater issues in the watershed are due to runoff and erosion from aging infrastructure or unpaved camp-type roads with little or no stormwater control. The BLA has been working with NHDES, private landowners, and the Towns of Amherst and Merrimack to install a series of stormwater runoff improvements and best management practices (BMPs) such as raingardens and infiltration trenches. Two phases of BMP implementation projects have been completed to date, and a third phase is currently under way.



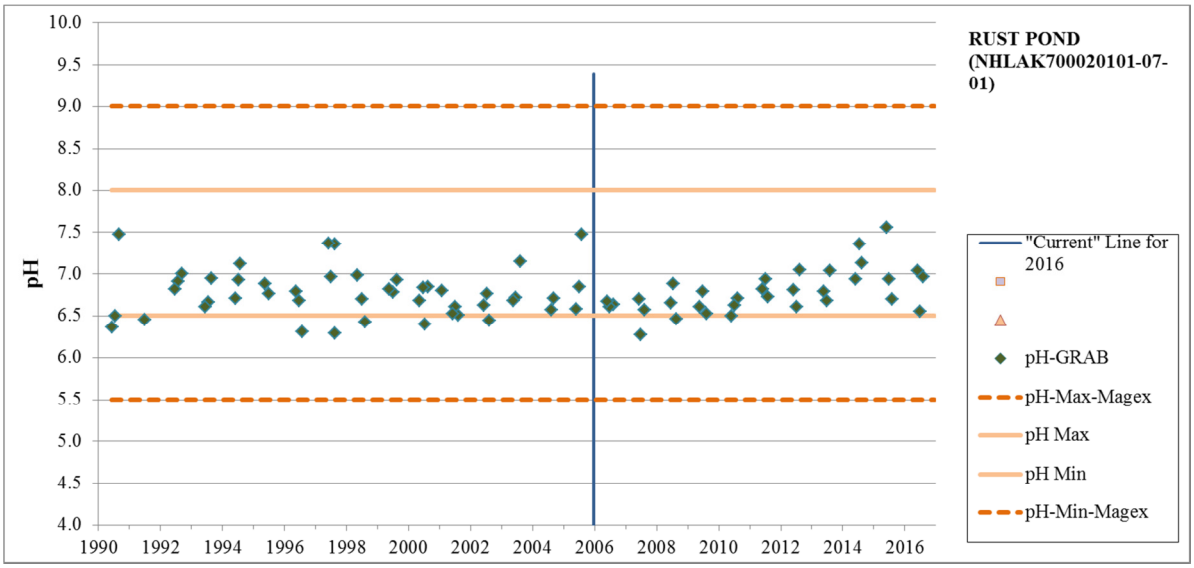


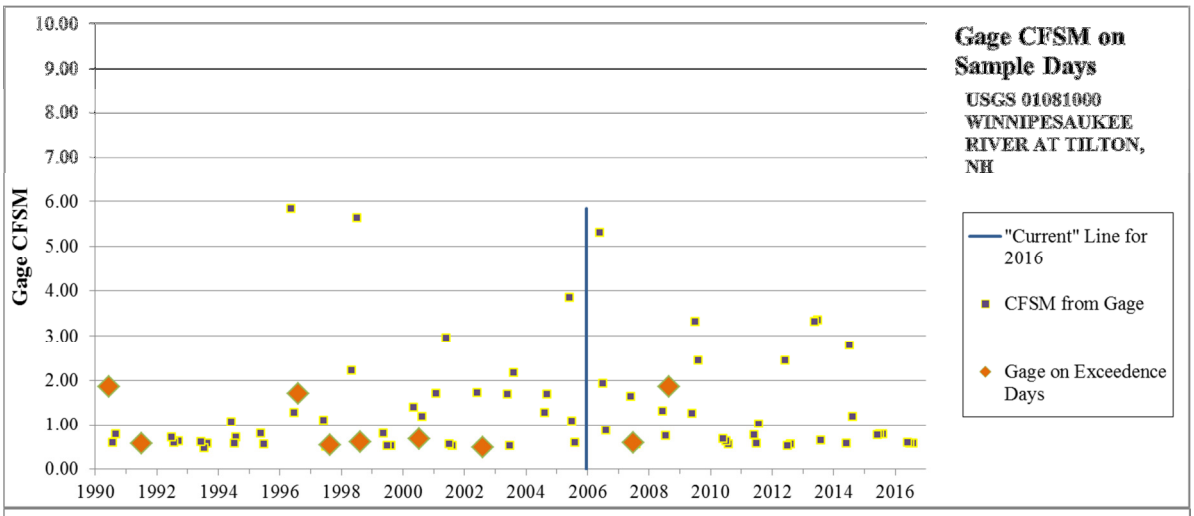
pH (Aquatic Life Use Support)

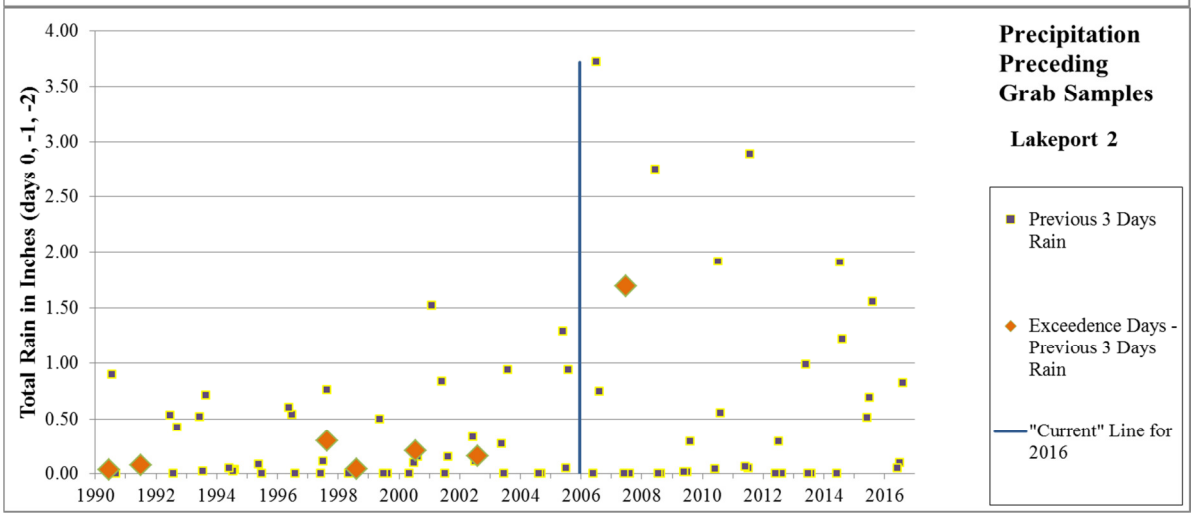
RUST POND (NHLAK700020101-07-01)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
RUST POND	NHLAK700020101-07-01	pH	Wolfeboro	4A-M	2-M

2016: Grab samples from RUSWOLD indicate impairment for the 2016 cycle. Two of 33 (6%) <10% of samples were below pH 6.5 (pH values of 6.4 - 6.27). 31 of 33 (96%) of samples taken were within the acceptable pH range (6.5 to 8.0). Samples that exceeded criteria were taken in different months from different years and one was after a 1.69" rain event.





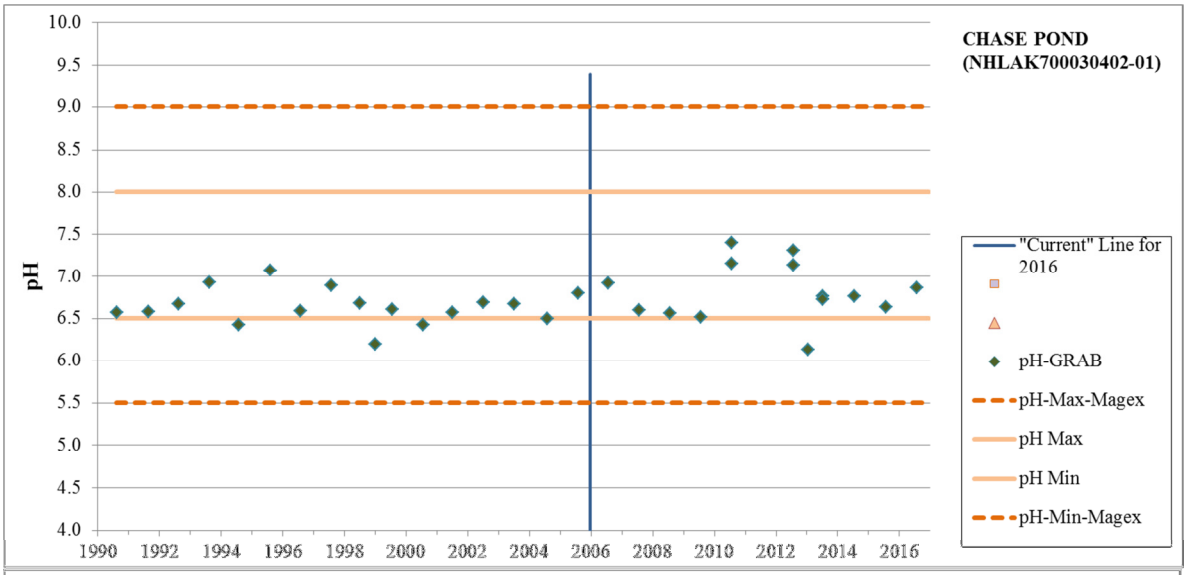


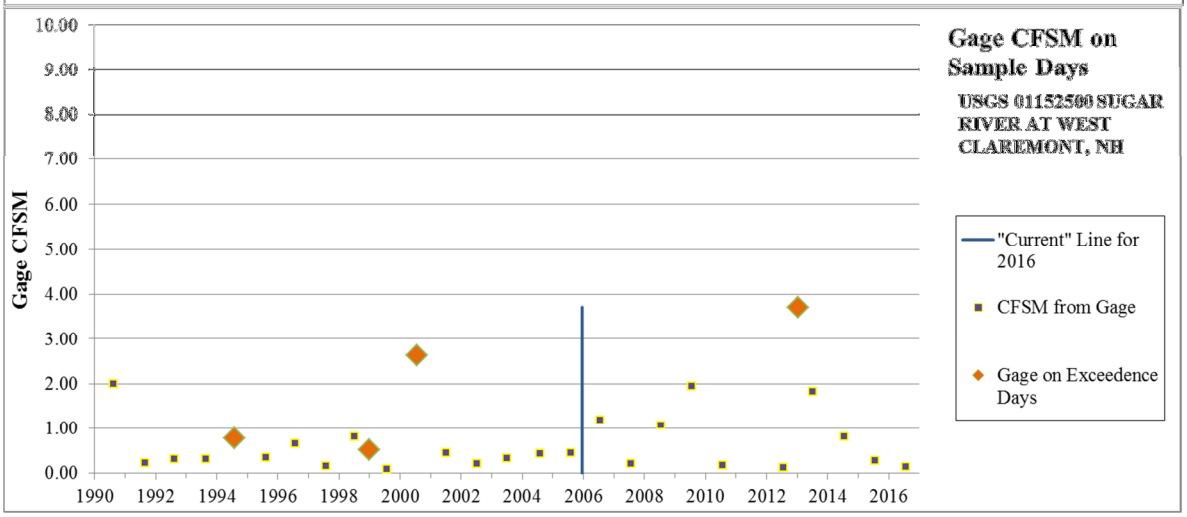
Notes:
pH-GRAB = pH value from a grab sample.
"Magex" refers to the magnitude of exceedence indicator described in the Consolidated Assessment and Listing Methodology.
"Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current". Available older data is provided for context. See the 2016 CALM for additional details.

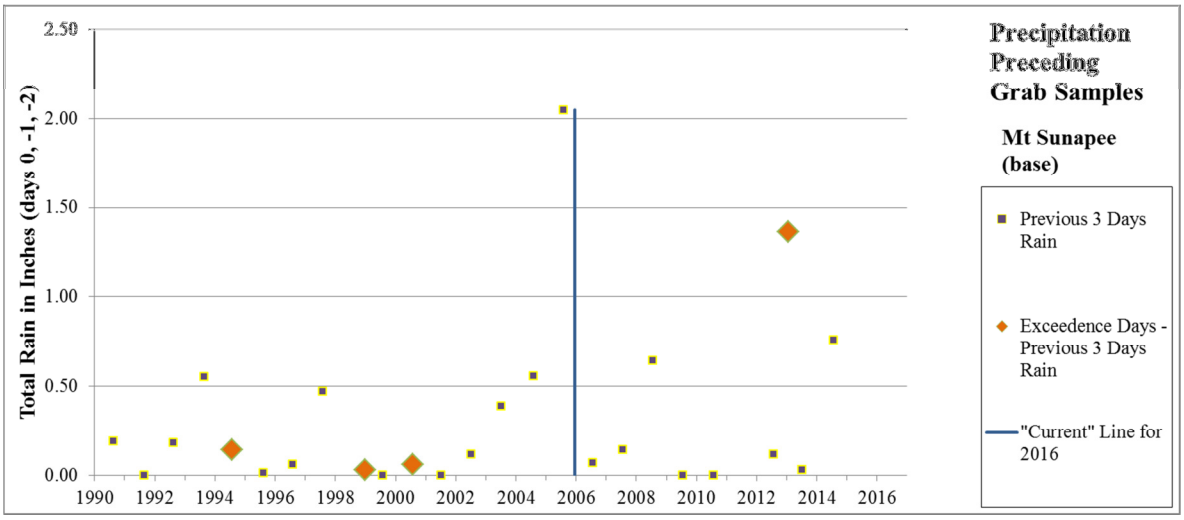
CHASE POND (NHLAK700030402-01)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
CHASE POND	NHLAK700030402-01	pH	Wilmot	4A-M	2-M

2016: 1 of 14 = (7% or <10%) of grab samples were below pH 6.5 (pH value of 6.13). Exceedence sample was taken in a winter month with 1.37" of rain in a 3-day period.





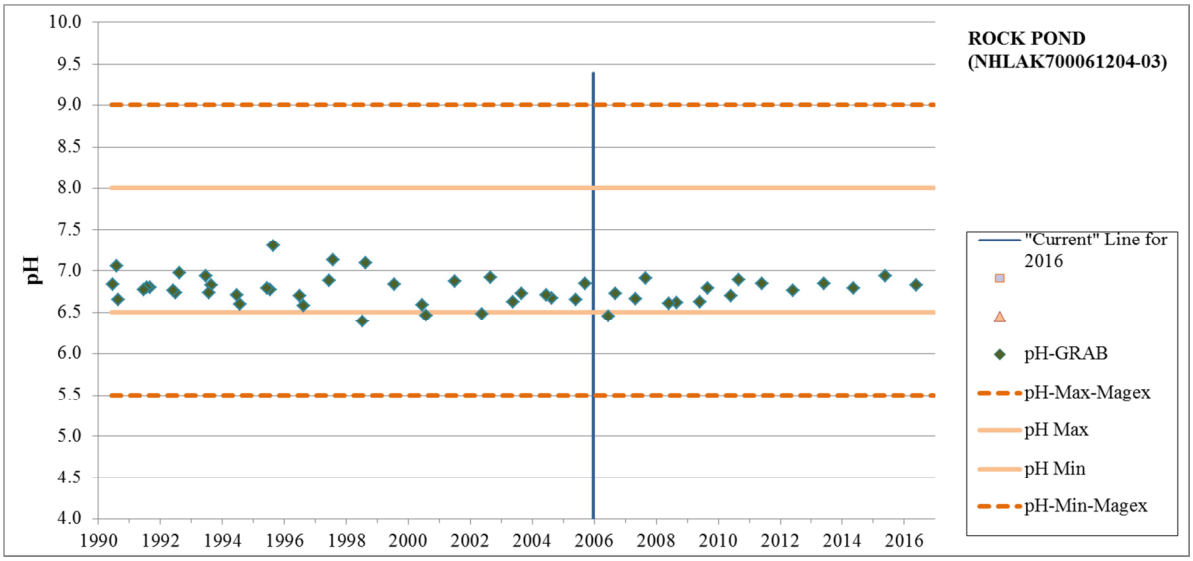


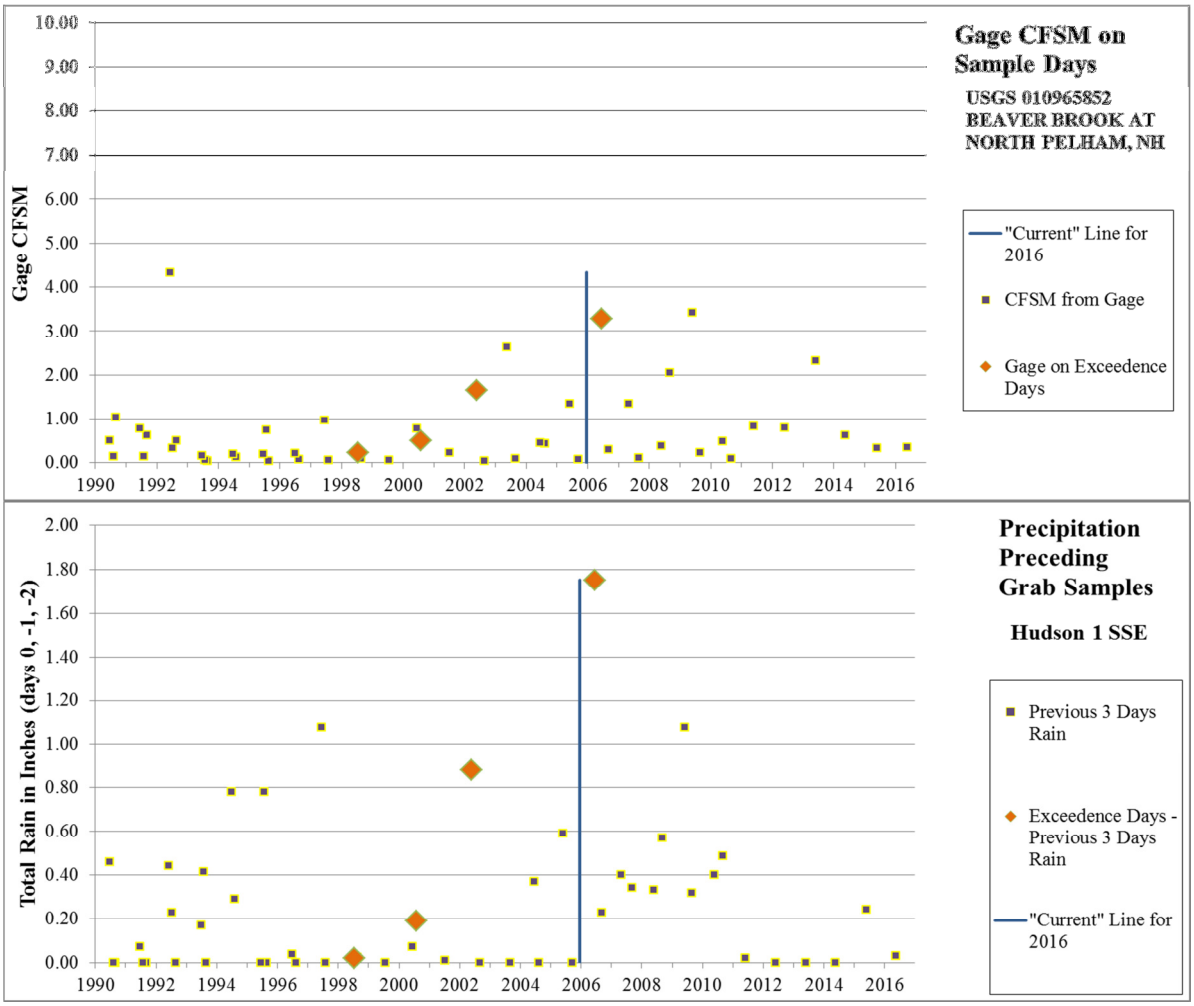
Notes:
pH-GRAB = pH value from a grab sample.
"Magex" refers to the magnitude of exceedence indicator described in the Consolidated Assessment and Listing Methodology.
"Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current". Available older data is provided for context. See the 2016 CALM for additional details.

ROCK POND (NHLAK700061204-03)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
ROCK POND	NHLAK700061204-03	pH	Windham	4A-M	2-M

2016: One of 16 (6%) of samples were below pH 6.5, (value was 6.45). The one exceedence sample was taken in June after a 1.75" rain event over a 3-day period.





Notes:
pH-GRAB = pH value from a grab sample.
"Magex" refers to the magnitude of exceedence indicator described in the Consolidated Assessment and Listing Methodology.
"Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current". Available older data is provided for context. See the 2016 CALM for additional details.

Invasive Aquatic Algae (Aquatic Life Use Support)

NINE WATERBODIES

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
Multiple (see below)	Multiple (see below)	Invasive Aquatic Algae	Multiple (see below)	4C-M	3-PNS

2016: Exotic algae are non-native, fast growing aquatic plants, which can quickly dominate and choke out native flora and fauna in the surface water. Didymosphenia geminata (also known as "Didymo" or "rock snot") is an example of one possible exotic algae. Such infestations would be in violation of Env-Wq 1703.19, which states that surface waters shall support and maintain a balanced, integrated and adaptive community of organisms having a species composition, diversity and functional organization comparable to that of similar natural habitats of a region. New research indicates that Didymo is in fact likely a native species that under certain conditions may result in what we consider a bloom. In the 2008 assessment cycle,

the following waterbodies were considered impaired, but not needing a TMDL since a load cannot be assigned. For the purposes of assessment, this waterbody has been identified as having bloom which may result in not meeting the biological integrity criteria due to the exotic macroalgae - didymo.

2016 Name	Primary Town	WATERBODY ID
HALLS STREAM	PITTSBURG	NHRIV801010303-02
CONNECTICUT RIVER	STEWARTSTOWN	NHRIV801010305-02
MOHAWK RIVER - UNNAMED BROOK - WEST BRANCH MOHAWK RIVER - ROARING BROOK	COLEBROOK	NHRIV801010401-04-02
SIMMS STREAM - UNNAMED BROOK - WEST BRANCH SIMMS STREAM	COLUMBIA	NHRIV801010403-02
CONNECTICUT RIVER	COLUMBIA	NHRIV801010404-02
CONNECTICUT RIVER	COLUMBIA	NHRIV801010405-03
CONNECTICUT RIVER	STRATFORD	NHRIV801010603-05
CONNECTICUT RIVER	NORTHUMBERLAND	NHRIV801010902-02
CONNECTICUT RIVER	CHARLESTOWN	NHRIV801060702-12

Non-Native Aquatic Plants (Aquatic Life Use Support)

Exotic macrophytes are non-native, fast-growing aquatic plants, which can quickly dominate and choke out native aquatic plant growth in the surface water. Examples of exotic macrophytes include variable milfoil (Myriophyllum heterophyllum), Eurasian milfoil (Myriophyllum spicatum), fanwort (Cabomba caroliniana) and water chestnut (Trapa natans). Such infestations are in violation of Env-Wq 1703.19, which states that surface waters shall support and maintain a balanced, integrated and adaptive community of organisms having a species composition, diversity and functional organization comparable to that of similar natural habitats of a region.

Assessment Category 4C represents cases where a waterbody is impaired or threatened for one or more designated uses but does not require the development of a TMDL because the impairment is not caused by a pollutant.

PEMIGEWASSET LAKE (NHLAK700010801-01)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
PEMIGEWASSET LAKE	NHLAK700010801-01	Non-Native Aquatic Plants		4C-M	2-M

2016: Pemigewasset Lake (NHLAK700010801-01) was documented as impaired in 2006 for non-native aquatic plants for the aquatic life designated use. Infestation by Variable milfoil is currently at a low density/coverage As of April 2014 control actions include; Herbicide treatment and diver hand removal. Surveys in 2015 and 2016 by NHDES biologists yielded no finds of variable milfoil. Assumed eradicated and will receive ongoing surveillance.

Fecal Coliform (Shellfishing Use Support)

WITCH CREEK (NHEST600031002-01-01)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
WITCH CREEK	NHEST600031002-01-01	FECAL COLIFORM	RYE	4A-P	3-PNS

The NHDES Shellfish Program is responsible for implementing the National Shellfish Sanitation Program (NSSP) and for determining NSSP classifications. As described in the CALM, the Shellfishing designated used is assessed based on the classifications assigned by the NHDES Shellfish Program. In the 2014 assessment

cycle this assessment unit (i.e. shellfishing zone) was classified as “RESTRICTED, CLOSED,” or in 305(b)/303(d) terms, Impaired and needing a TMDL (5-P). On January 1, 2015, the classification of this assessment unit (i.e. shellfishing zone) was re-classified to “PROHIBITED, SAFETY ZONE,” or in 305(b)/303(d) terms, Insufficient information (3-PNS). In this case, the shellfish area is closed for administrative reasons such as lack of a current sanitary survey or a safety management zone around wastewater treatment plants or marinas.

UPPER SAGAMORE CREEK (NHEST600031001-03)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
UPPER SAGAMORE CREEK	NHEST600031001-03	FECAL COLIFORM	PORTSMOUTH	4A-P	3-PNS

The NHDES Shellfish Program is responsible for implementing the National Shellfish Sanitation Program (NSSP) and for determining NSSP classifications. As described in the CALM, the Shellfishing designated used is assessed based on the classifications assigned by the NHDES Shellfish Program. In the 2014 assessment cycle this assessment unit (i.e. shellfishing zone) was classified as “PROHIBITED, CLOSED,” or in 305(b)/303(d) terms, Impaired and needing a TMDL (5-P). On January 1, 2015, the classification of this assessment unit (i.e. shellfishing zone) was re-classified to “PROHIBITED, SAFETY ZONE,” or in 305(b)/303(d) terms, Insufficient information (3-PNS). In this case, the shellfish area is closed for administrative reasons such as lack of a current sanitary survey or a safety management zone around wastewater treatment plants or marinas.

WWTFs currently in "significant non-compliance" – Ammonia

Ammonia can have a wide range of impacts to aquatic life, plants, and humans. The chronic and acute criteria for ammonia in freshwater resides in Env-Wq 1703.25 and Env-Wq 1703.26 through 31 for salt waters with a range of salinities.

Assessment Category 4B is reserved for cases where a waterbody is impaired or threatened for one or more designated uses but does not require the development of a TMDL because other pollution control requirements are reasonably expected to result in attainment of the water quality standard in the near future.

One form of Category 4B is triggered when a wastewater treatment facility (WWTF) is currently in “significant non-compliance” of its NPDES permit (as defined by EPA), or is on the “exceptions list” (i.e. facilities that are in significant non-compliance for two or more quarters), for one or more of its permitted water quality based pollutant effluent limits. Water quality based effluent limits are limits based on modeling or dilution calculations to meet water quality standards.

CONTOOCOOK RIVER - UNNAMED BROOK (NHRIV700030101-16)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
CONTOOCOOK RIVER - UNNAMED BROOK	NHRIV700030101-16	Ammonia (Total)	JAFFREY	4B-T	3-PAS

The Contoocook River - Unnamed Brook (NHRIV700030101-16) was listed as impaired in 2014 based on NPDES permit violations at the Jaffrey WWTF. The Jaffrey WWTF was in violation of its NPDES permit for effluent ammonia nitrogen as nitrogen monthly average concentration limit violations in June, August, and September 2012. The facility was in "significant non-compliance" with its NPDES permit for exceeding its ammonia nitrogen as nitrogen monthly average concentration limits in excess of 40 percent for at least two months during two consecutive quarter review periods. Jaffrey was in violation of its NPDES permit for effluent ammonia nitrogen as nitrogen weekly average concentration limit violations in October 2012 and January 2013. The facility was in "significant non-compliance" with its NPDES

permit for exceeding its ammonia nitrogen as nitrogen weekly average concentration limits in excess of 40 percent for at least two months during two consecutive quarter review periods. Jaffrey attributed its ammonia nitrogen as N violations to high BOD influent loadings from EMD Millipore, a Significant Industrial User (SIU) in Jaffrey.

The 4B impairment of the Contoocook River - Unnamed Brook (NHRIV700030101-16) for Aquatic Life Use due to excess Ammonia (Total) has been removed. The Jaffrey WWTF is no longer in significant non-compliance, and the Contoocook River has been placed in Category 3 (Insufficient Information).

WWTFs currently in "significant non-compliance" - Biochemical Oxygen Demand (BOD)

Dissolved oxygen is critical to the balanced, integrative, and adaptive community of organisms as described in Env-Wq 1703.19. As such, the water quality standard provide criteria for Class A waters, Class B waters, waters with cold water fish species, and in both thermally stratified and unstratified lakes, impoundments, and reservoirs in Env-Wq 1703.07 (a), (b), (c), and (d). Wastewater treatment facility (WWTF) discharge permits from EPA include a biochemical oxygen demand (BOD) such that during the periods of highest stress on the aquatic organism, when the temperature is high and the natural reaeration is low, the WWTF does not drive the dissolved oxygen in the system to unhealthy low levels.

Assessment Category 4B is reserved for cases where a waterbody is impaired or threatened for one or more designated uses but does not require the development of a TMDL because other pollution control requirements are reasonably expected to result in attainment of the water quality standard in the near future.

One form of Category 4B is triggered when a wastewater treatment facility (WWTF) is currently in "significant non-compliance" of its NPDES permit (as defined by EPA), or is on the "exceptions list" (i.e. facilities that are in significant non-compliance for two or more quarters), for one or more of its permitted water quality based pollutant effluent limits. Water quality based effluent limits are limits based on modeling or dilution calculations to meet water quality standards.

LOWER PISCATAQUA RIVER - SOUTH (NHEST600031001-02-02)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
LOWER PISCATAQUA RIVER - SOUTH	NHEST600031001-02-02	BOD, Biochemical oxygen demand	PORTSMOUTH	4B-T	3-PAS

The Lower Piscataqua River - South (NHEST600031001-02-02) was listed as impaired in 2014 based on NPDES permit violations at the Portsmouth WWTF. The Portsmouth WWTF was in violation of its NPDES permit in April, July, August, and October 2012, and August thru December 2013 for effluent BOD monthly average concentration limit violations. The facility was in "significant non-compliance" for exceeding its interim BOD monthly average concentration limits per EPA Consent Decree 09-cv-283-PB. EPA and Portsmouth entered into a Consent Decree (09-cv-283-PB) in September 2009 for Portsmouth to achieve secondary treatment at its Pierce Island Wastewater Treatment Facility.

The 4B impairment of the Lower Piscataqua River - South (NHEST600031001-02-02) for Aquatic Life Use due to excess BOD, Biochemical oxygen Demand has been removed. The Portsmouth WWTF is no longer in significant non-compliance, and the Lower Piscataqua River - South has been placed in Category 3 (Insufficient Information).

WWTFs currently in "significant non-compliance" – Copper

Copper can have a wide range of impacts to aquatic life, plants, and humans. The chronic and acute criteria for copper in freshwater and salt water reside in Env-Wq 1703.21 through 24.

Assessment Category 4B is reserved for cases where a waterbody is impaired or threatened for one or more designated uses but does not require the development of a TMDL because other pollution control requirements are reasonably expected to result in attainment of the water quality standard in the near future.

One form of Category 4B is triggered when a wastewater treatment facility (WWTF) is currently in "significant non-compliance" of its NPDES permit (as defined by EPA), or is on the "exceptions list" (i.e. facilities that are in significant non-compliance for two or more quarters), for one or more of its permitted water quality based pollutant effluent limits. Water quality based effluent limits are limits based on modeling or dilution calculations to meet water quality standards.

CONTOOCOOK RIVER - UNNAMED BROOK (NHRIV700030101-16)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
CONTOOCOOK RIVER - UNNAMED BROOK	NHRIV700030101-16	Copper	JAFFREY	4B-T	3-PAS

The Contoocook River - Unnamed Brook (NHRIV700030101-16) was listed as impaired in 2014 based on NPDES permit violations at the Jaffery WWTF. The Jaffrey WWTF was in violation of its NPDES permit for effluent copper monthly average concentration limit violations in July and November 2013. The facility was in "significant non-compliance" with its NPDES permit for exceeding its copper monthly average concentration limits in excess of 40 percent for at least two months during two consecutive quarter review periods. Jaffrey attributed its July 2013 copper violation to an unknown influent copper spike and its November 2013 copper violation to copper bound in its higher than normal effluent TSS concentration.

The 4B impairment of the Contoocook River - Unnamed Brook (NHRIV700030101-16) for Aquatic Life Use due to excess copper has been removed. The Jaffrey WWTF is no longer in significant non-compliance, and the Contoocook River has been placed in Category 3 (Insufficient Information).

AMMONOOSUC RIVER (NHRIV801030403-16)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
AMMONOOSUC RIVER	NHRIV801030403-16	Copper	LITTLETON	4B-T	3-PAS

The Ammonoosuc River (NHRIV801030403-16) was listed as impaired in 2014 based on NPDES permit violations at the Littleton WWTF. the Littleton WWTF was in violation of its NPDES permit in October and November 2012, and August, September, November and December 2013 for effluent copper monthly average concentration limit violations. The facility was in "significant non-compliance" with its NPDES permit for exceeding its copper monthly average concentration limits four months during two consecutive quarter review periods and for exceeding its copper monthly average concentration limits in excess of 40 percent for at least two months during two consecutive quarter review periods. Littleton attributed its violations to discharges from septic haulers to its septage receiving station. Littleton identified septage loads from certain companies with high copper concentrations, and now prohibits their discharges.

The 4B impairment of the Ammonoosuc River (NHRIV801030403-16) for Aquatic Life Use due to excess copper has been removed. The Littleton WWTF is no longer in significant non-compliance, and the Ammonoosuc River has been placed in Category 3 (Insufficient Information).