

Putting tools for data visualization at assessors fingertips

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Data Management Tools Session
The National Water Quality Data
Management Training Workshop
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Context: How much data?

2016 Cycle

- 8,816 - AUIDs (full 24k NHD)
- Raw Data
 - 3,600,000 - Grab Samples (1.6 M 'Current')
 - 305,000 - Parameter/Days of Datalogger records (147 K 'current')
- 91,938 - AU/DU/Parameter Combinations
- After the Automated Oracle Processes Run
 - 525 - Potential Impairment Changes to Review

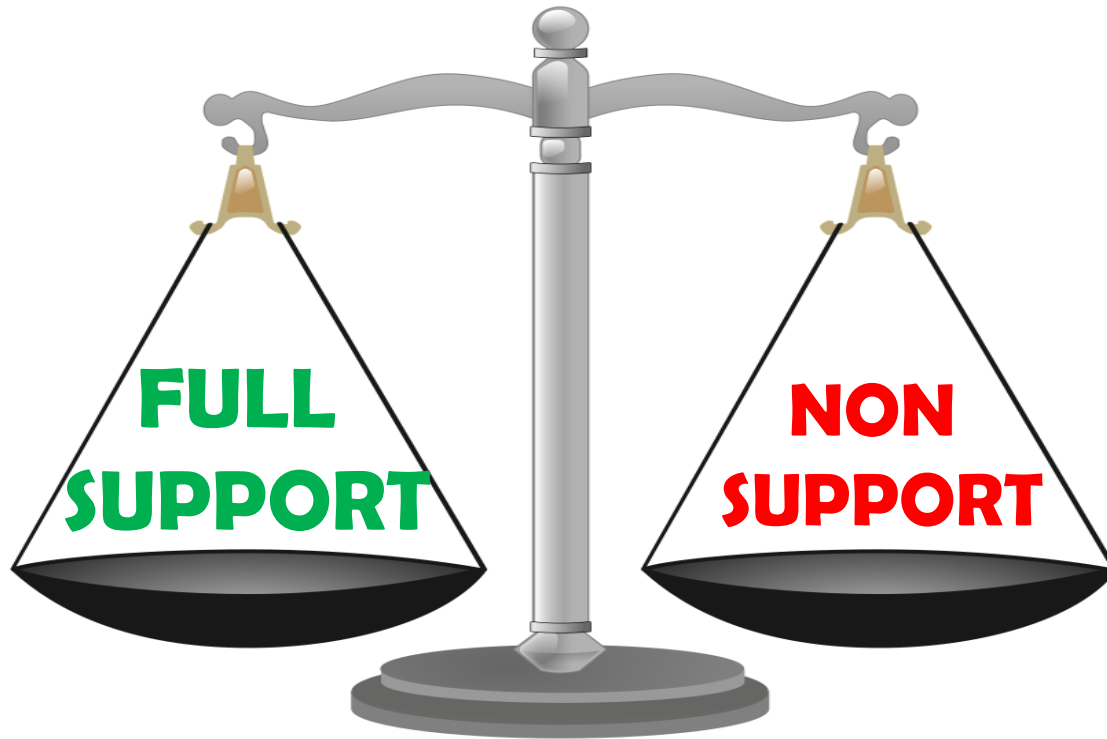
Problem

- Not all data is created equal.



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- We still need to make a decision.



Problem

- Not all data is created equal.
- We still need to make a decision.
- Once decided, we need to defend our case.



Graphics Talk

Really! I did not touch that bird feeder!



Dissolved Oxygen Example

Long Pond,
Pelham, N.H.

The screenshot displays a web application interface for "NHDES 2016 305(b)/303(d) Data Access". The interface includes a top navigation bar with the Esri logo, the application title, and a "View short tutorial" link. Below the navigation bar is a toolbar with icons for information, layers, home, and search. A search bar labeled "Esri World Geocoder" is positioned above the map. The map itself shows an aerial view of Long Pond, Pelham, N.H., with several purple circular markers indicating data points. A pink line is visible on the map, likely representing a stream or boundary. The left sidebar contains a "Layer List" section with the following layers:



- Operational Layers
- 2014 Assessment Unit IDs (polys) _Query Result ...
- 2016 Assessment Unit IDs (pnts) ...
- Stations used in 305(b)/303(d) [Cycles 2006-2016] ...
- 2016 Assessment Unit IDs (lines) ...
- 2016 Assessment Unit IDs (polys) ...
- 12 Digit Hydrologic Units ...
- EPA 2017 MS4 General Permit Areas ...

The bottom of the map shows a coordinate display: -71.373 42.702. The bottom right corner features the text "POWERED BY esri" and "Shampshire Department of Env...".

Tools



1) Pick your Assessment Unit ID

Waterbodyid	NHLAK700061205-02-01
Search 	
..... (All) 	
..... NHEST600030406-01	
..... NHEST600030608-01	
..... NHEST600030709-01-01	
..... NHEST600030709-01-02	
..... NHEST600030806-01-02	
..... NHEST600030902-01-03	
..... NHEST600030903-01-01	
..... NHEST600030903-01-03	
..... NHEST600030903-01-04	
..... NHEST600030903-01-05	



Pick a flow gage

- 56 gages
- POR 1990- Present
- Master file is updatable with a single click

USGS 010965852 BEAVER BROOK AT NORTH PELH.

USGS 01092000 MERRIMACK R NR GOFFS FALLS, BELOW MANCH

USGS 01093852 SOUHEGAN RIVER (SITE WLR-1) NEAR MILFORD, N

USGS 01094000 SOUHEGAN RIVER AT MERRIMACK, NH

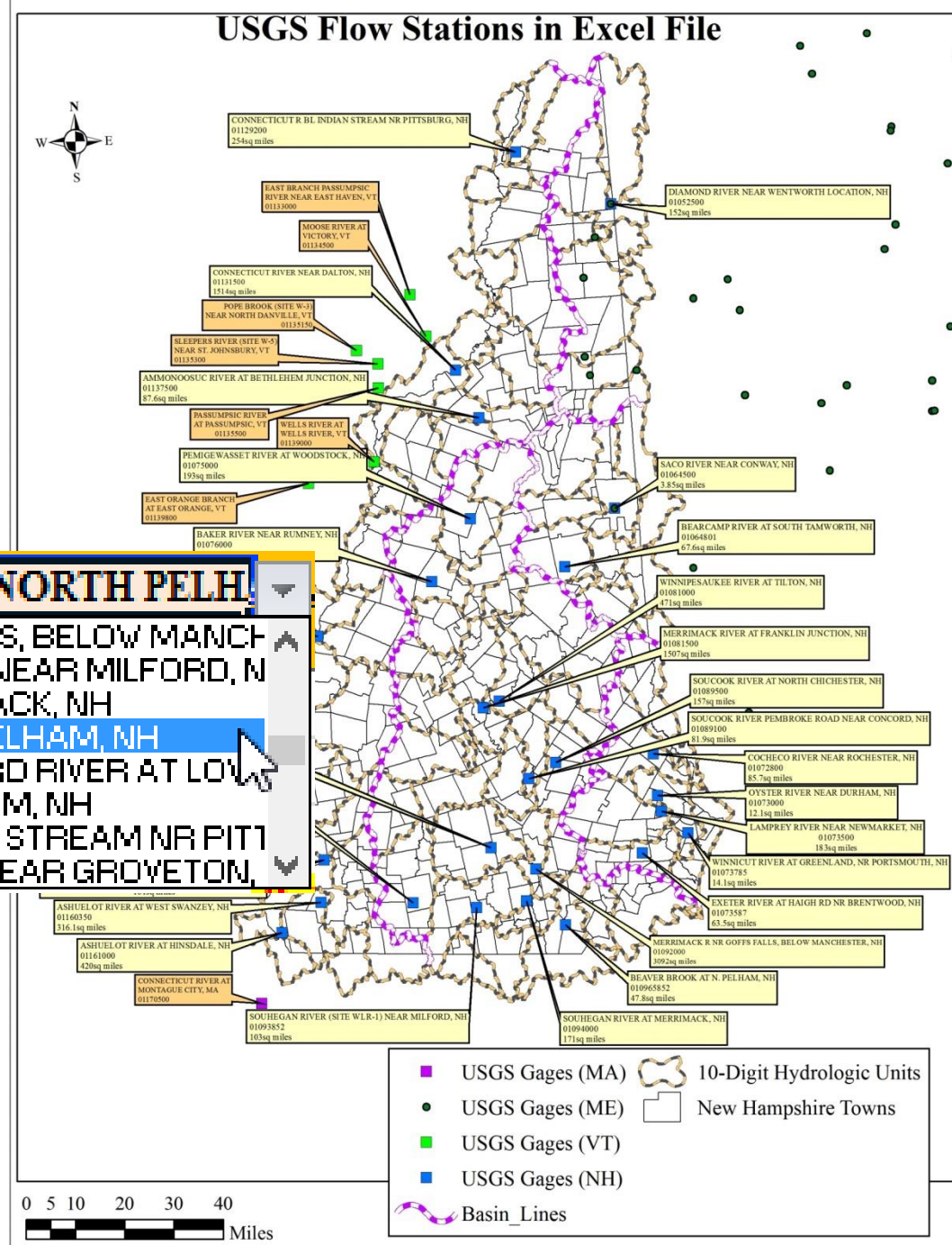
USGS 010965852 BEAVER BROOK AT NORTH PELHAM, NH

USGS 01100000 MERRIMACK RIVER BL CONCORD RIVER AT LOW

USGS 01100505 SPICKET RIVER AT NORTH SALEM, NH

USGS 01129200 CONNECTICUT R BELOW INDIAN STREAM NR PIT

USGS 01130000 UPPER AMMONOOSUC RIVER NEAR GROVETON,

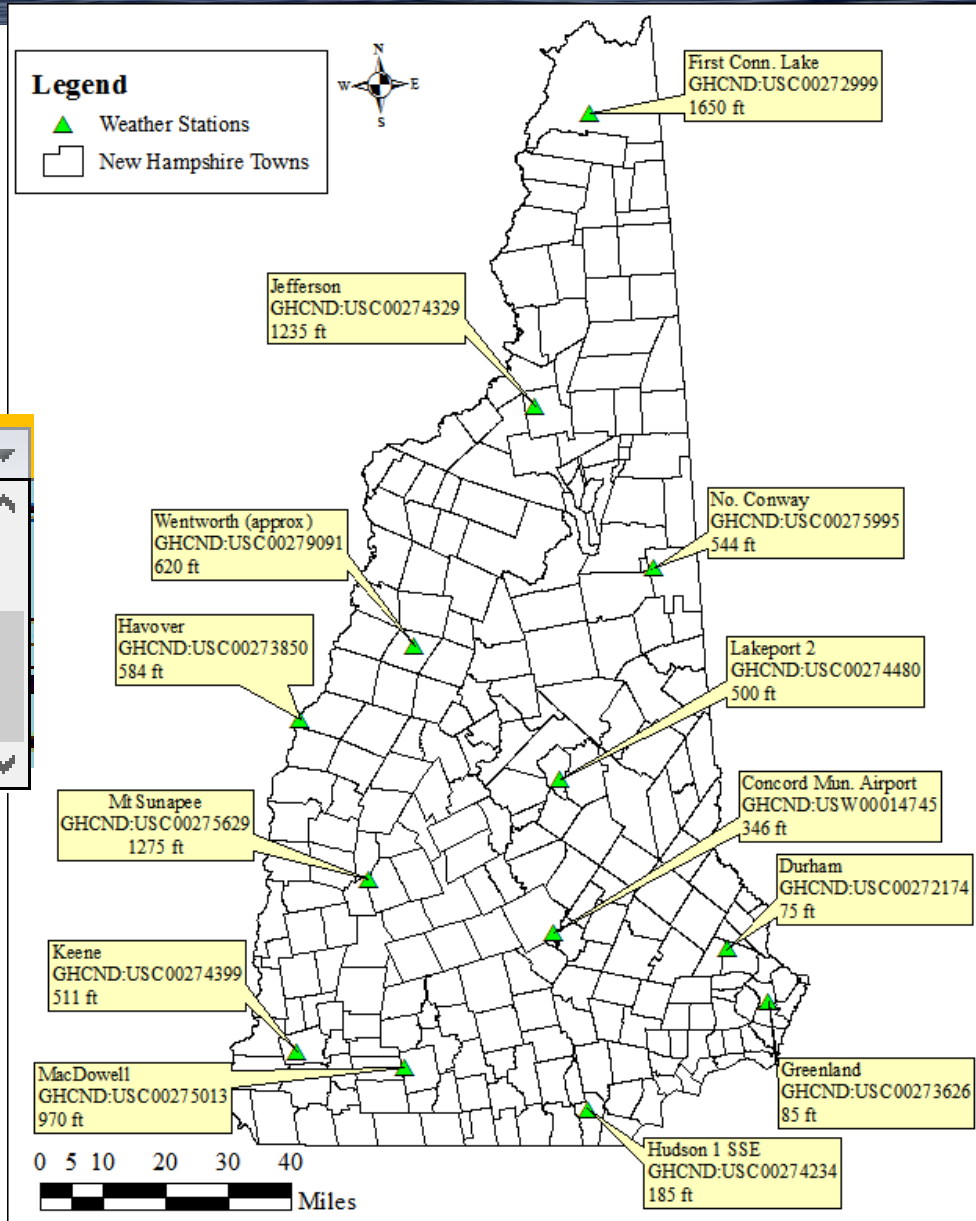


Pick a Weather Station

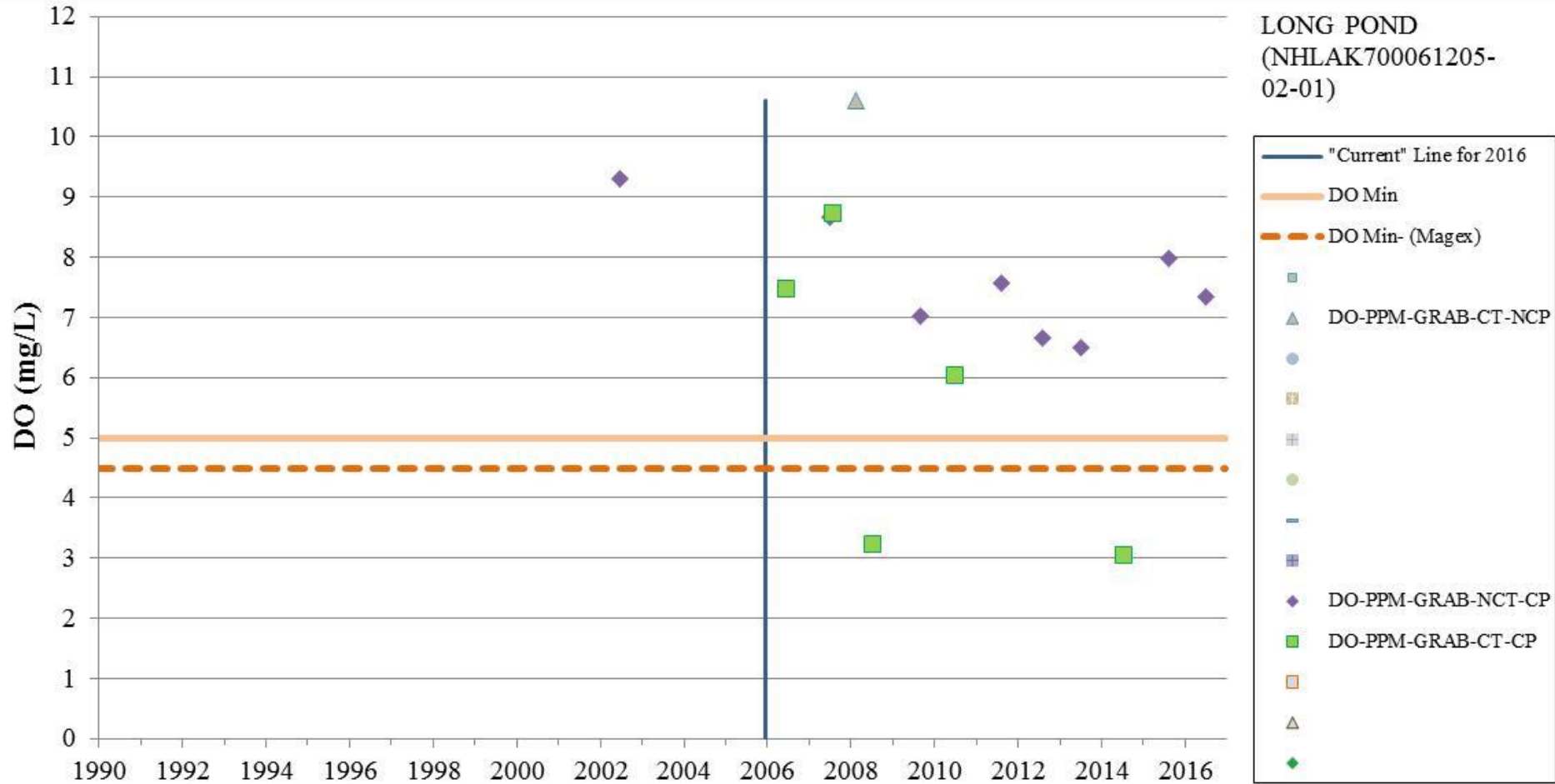
- 13 Stations
- POR 1990- Present
- Updated Biannually

Hudson 1 SSE

- Mt Sunapee (base)
- Hanover
- Hudson 1 SSE**
- Wentworth
- Jefferson
- Keene
- Lakeport 2
- No. Conway



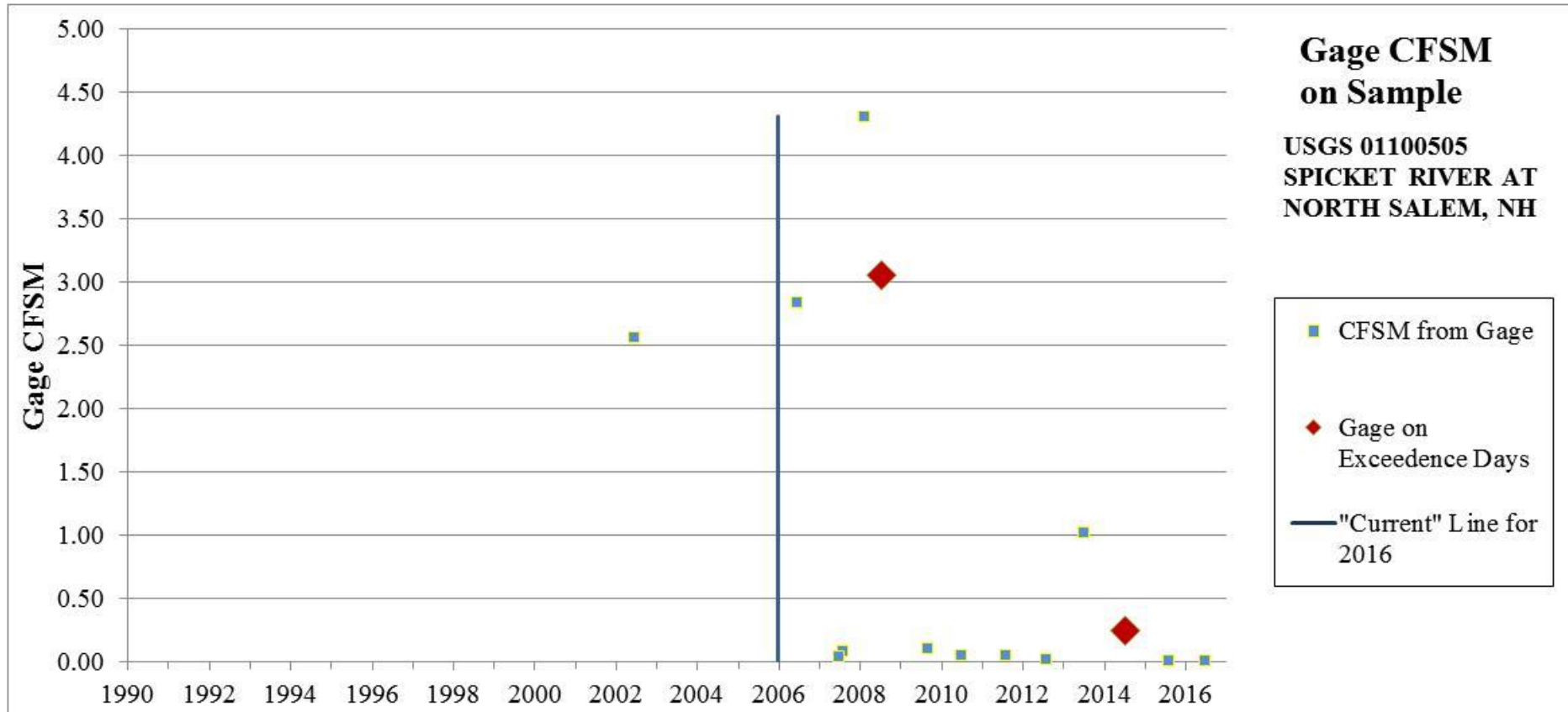
What was the lowest epilimnetic DO?



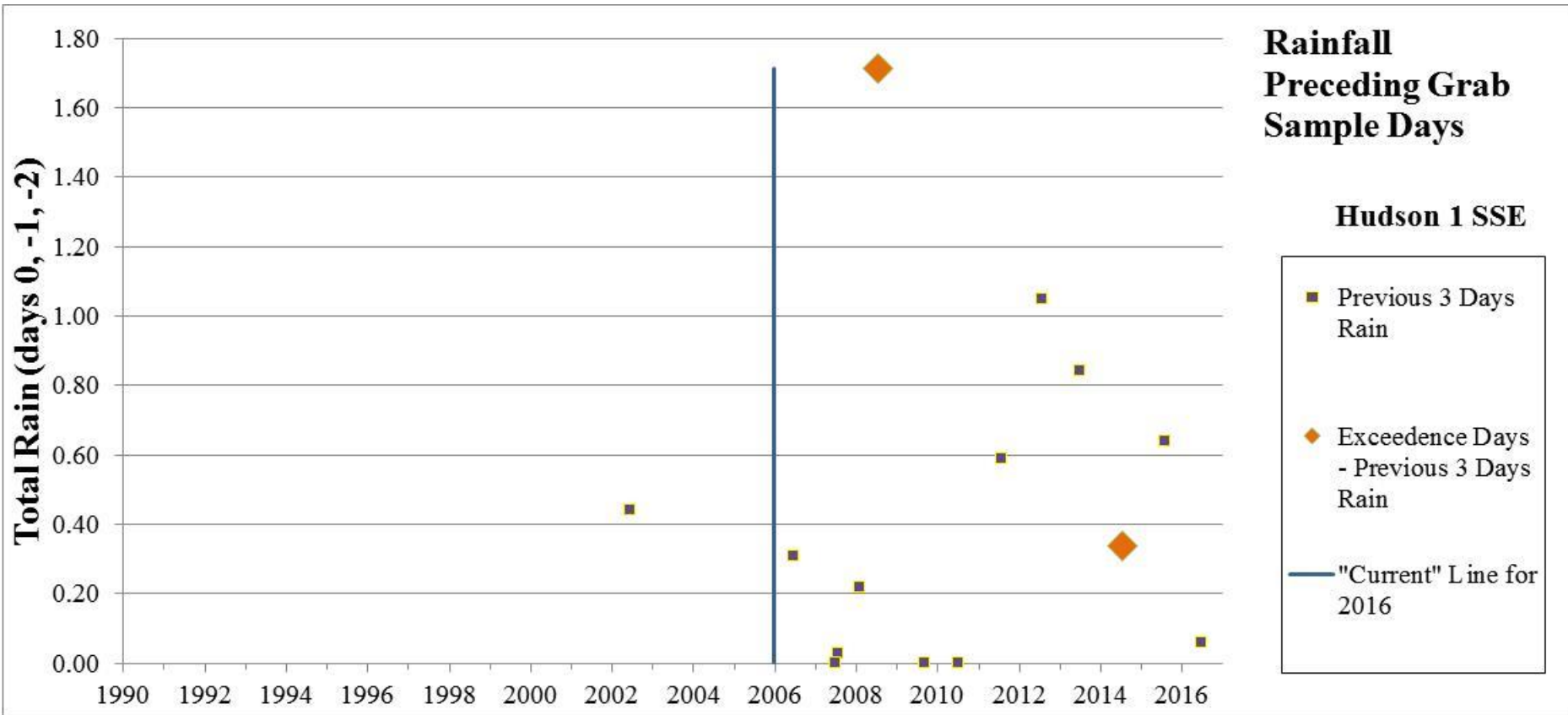
What were the water temperatures?



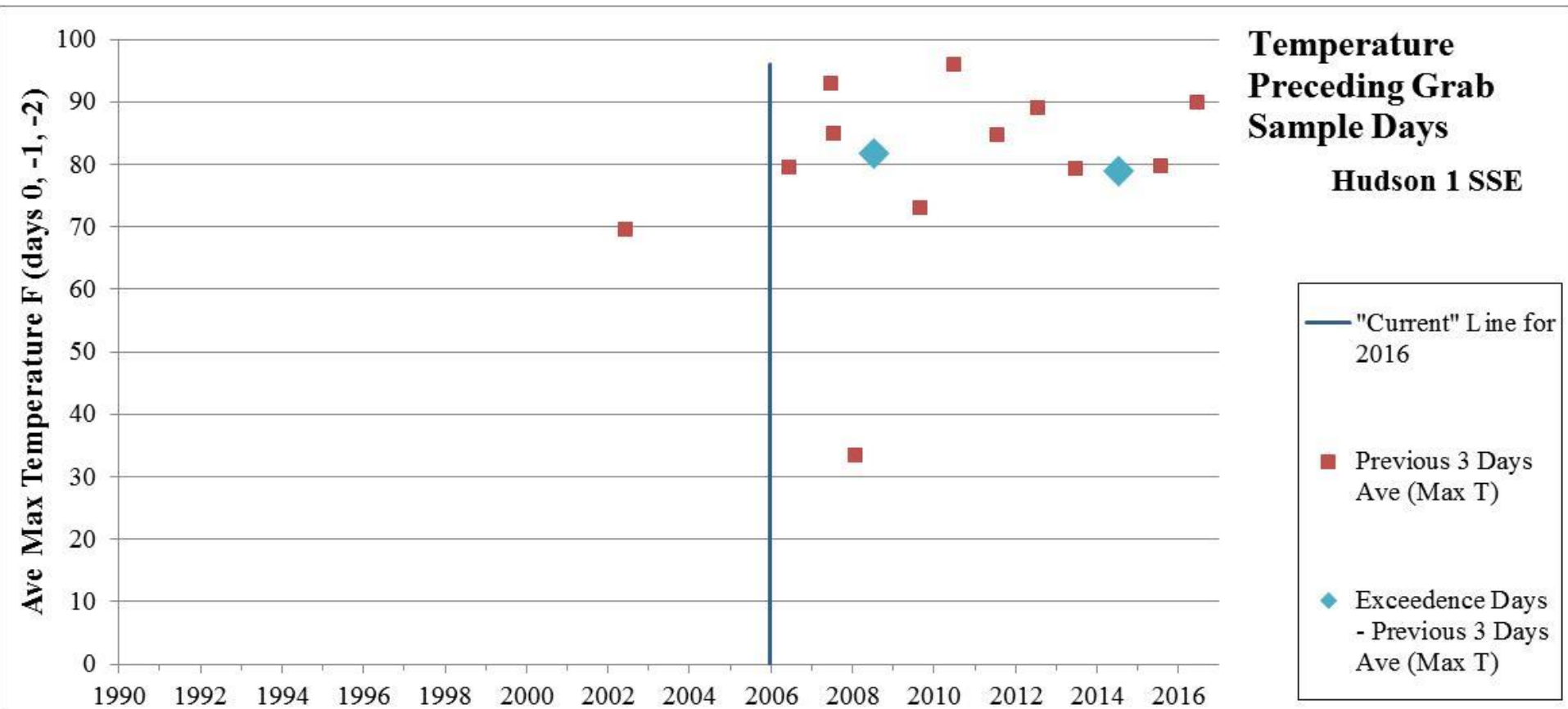
What were the inflow condition?



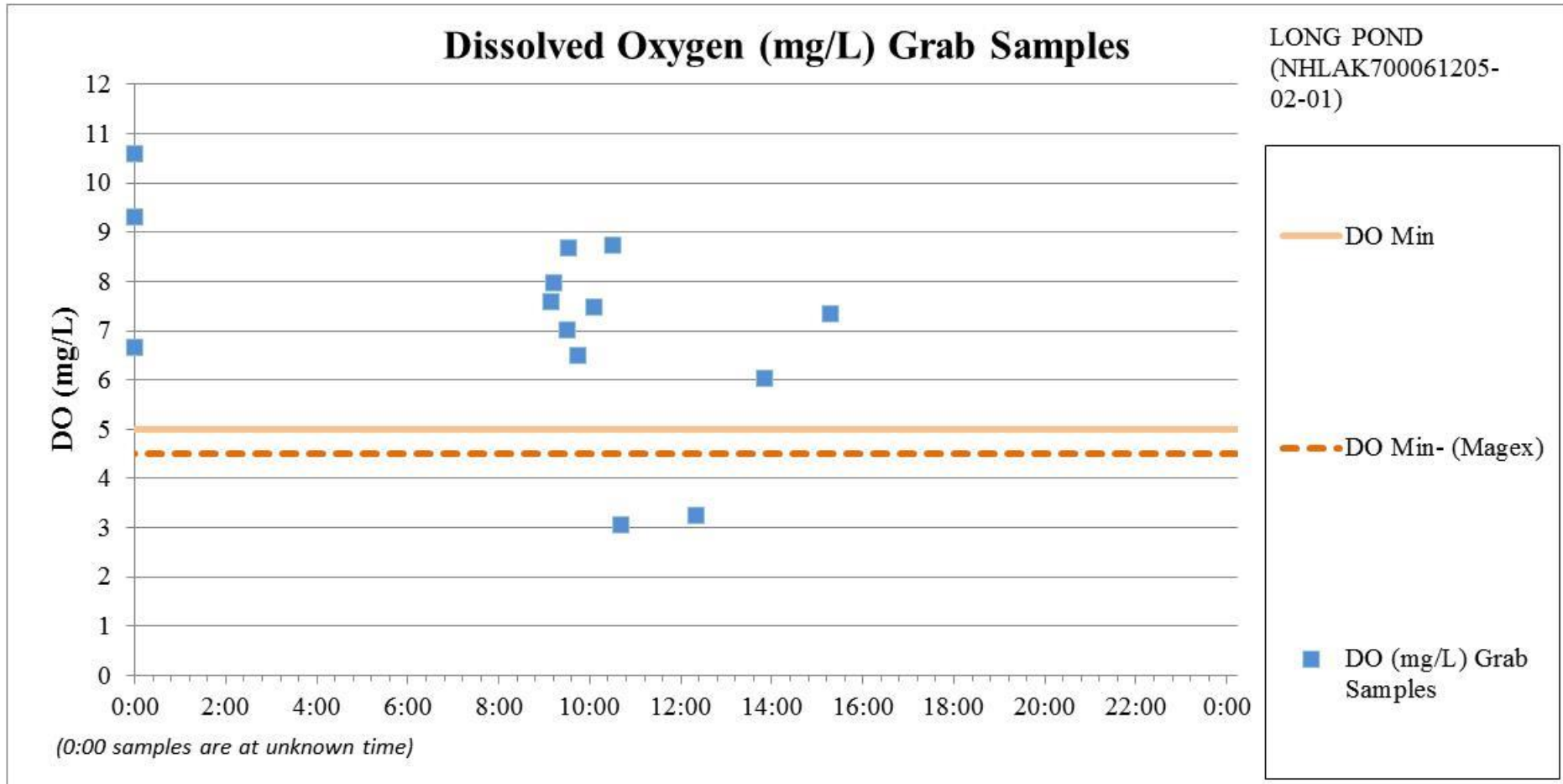
Was there recent rain?



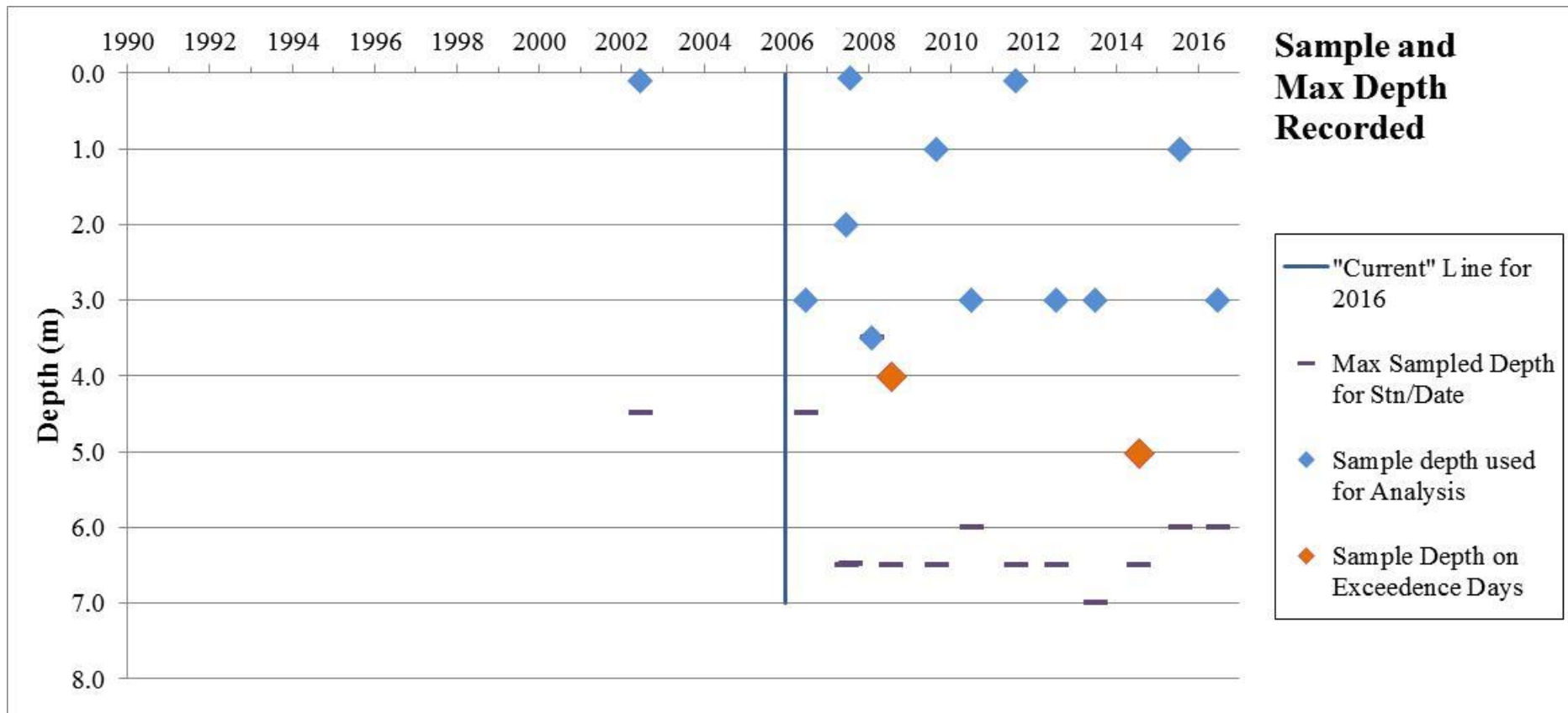
What was air temperature like?



What time of day were the profiles collected?



Where in the epilimnion was the lowest concentration sample?



Take Home

- Each sampling event has a different 'value'.
- Seeing how the co-variables relate leads to informed assessments.
- Common/Inexpensive tools can be fast, nimble, and speed your assessments.



Questions?

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<http://des.nh.gov/organization/divisions/water/wmb/swqa/index.htm>

