

# Direct to the Web

MERI's water quality data  
management/data exchange system

<http://meri.njmeadowlands.gov/>

## *MISSION*

*Continuously measure, analyze and disseminate  
environmental information about the District*

Ed Konsevick, MERI

Presented at: NJWMCC Meeting, Sept 12, 2008

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New Jersey Meadowlands Commission



Environmental Research Institute

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# Analogues

- National Water Information System: Web Interface <http://waterdata.usgs.gov/nj/nwis/>
- Rutgers University Coastal Ocean Observation Lab  
<http://www.thecoolroom.org/>
- University of Connecticut Marine Sciences MYSOUND  
<http://www.mysound.uconn.edu/index.html>

# Continuous

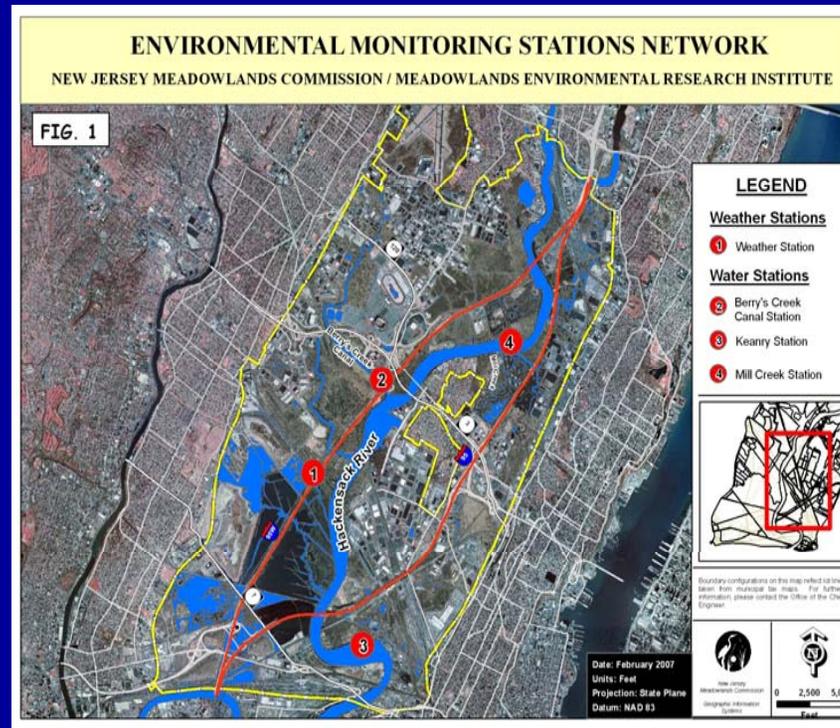
Established  
in 2004

5 locations

Recorded  
every 15  
minutes

Averaged  
into hourly  
values

Temperature  
Conductivity  
Salinity  
DO, pH  
Turbidity  
Depth



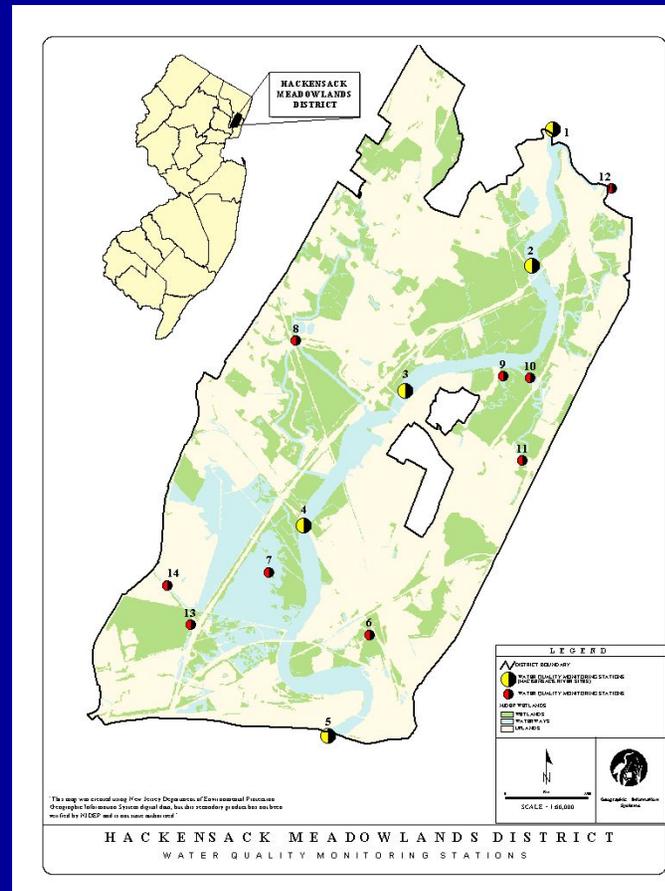
# Hackensack River Seasonal Water Quality Monitoring Program

Designed by  
USGS in 1993

14 Sites:  
5 River  
9 Tributary

4 Seasons

Surface Grab  
Samples at  
Low Tide



Total Heavy  
Metals

Conventional  
Field  
Constituents

Bacteria,  
Nutrients,  
Solids and  
Demands

# Data Flow

## Continuous

YSI Probes

Campbell Data Logger

Modem

Central Computer at MERI

Web Server

Screening  
Program

## Seasonal

Collect Samples

Analyze in Certified Lab

QA Officer

Data Manager

Web Server

# Screening Program

Validation Setup ✕

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## Site Validation Setup

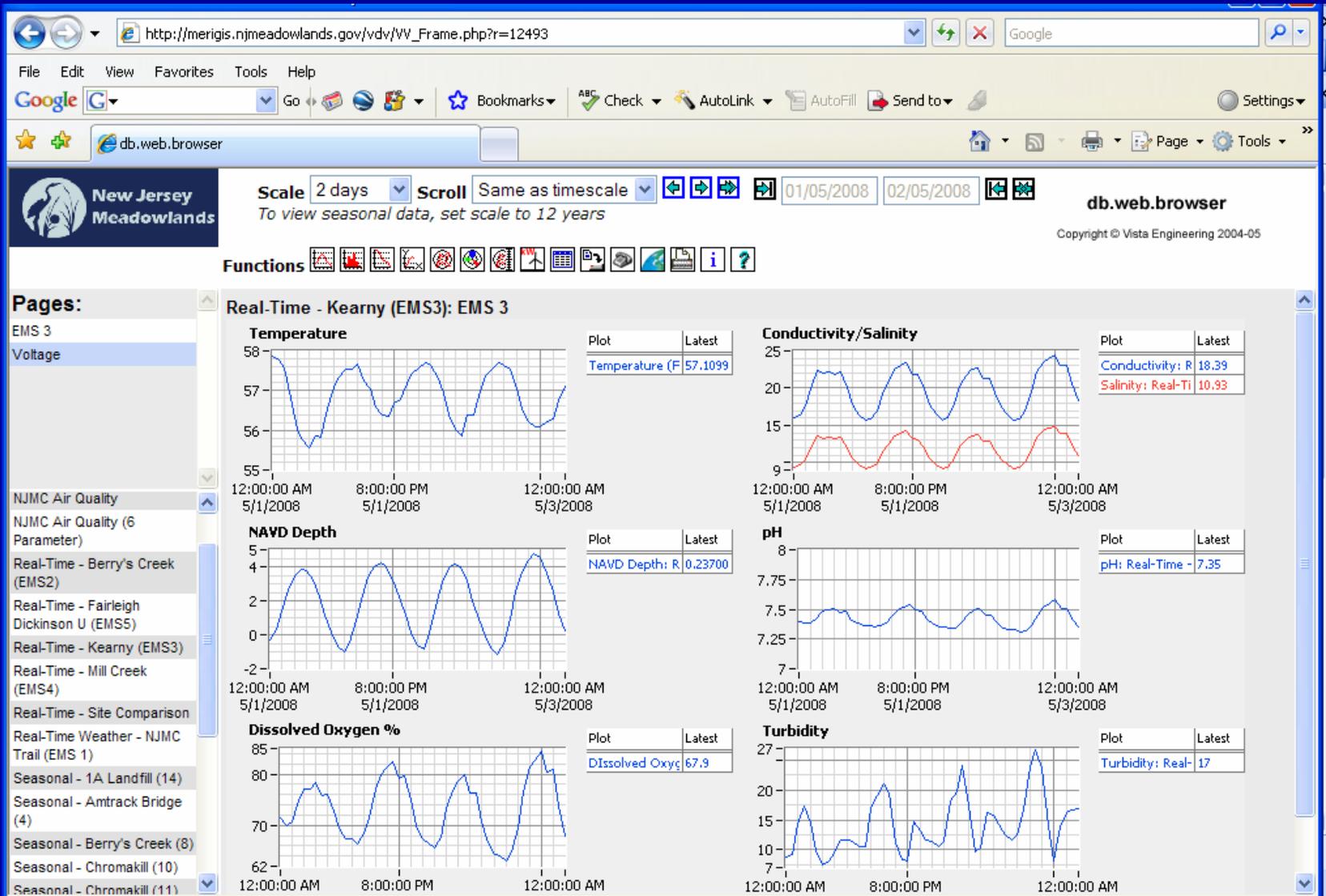
Real-Time - Mill Creek (EMS4)

Variable Name	Variable Unit	Min	Max	Lower Limit	Upper Limit
Battery	Volts	9.330	2004.000	<input type="text" value="9"/>	<input type="text" value="16"/>
Depth	ft	-0.420	1000.000	<input type="text" value="-1"/>	<input type="text" value="100"/>
DO	mg/l	-5.454	11.530	<input type="text" value="-6"/>	<input type="text" value="20"/>
DO%	%	-3.600	1000.000	<input type="text" value="-1"/>	<input type="text" value="250"/>
holder	N/A	0.000	5903.000	<input type="text" value="-20"/>	<input type="text" value="20"/>
pH	pH	-60.000	6999.000	<input type="text" value="5"/>	<input type="text" value="10"/>
Salinity	ppt	-0.749	1000.000	<input type="text" value="-1"/>	<input type="text" value="60"/>
Sp. Conductivity	mS/cm	0.000	5203.000	<input type="text" value="-1"/>	<input type="text" value="60"/>
Temperature	°C	-9.990	31.510	<input type="text" value="-20"/>	<input type="text" value="100"/>
Turbidity	NTU	-72.200	1682.000	<input type="text" value="-1"/>	<input type="text" value="500"/>

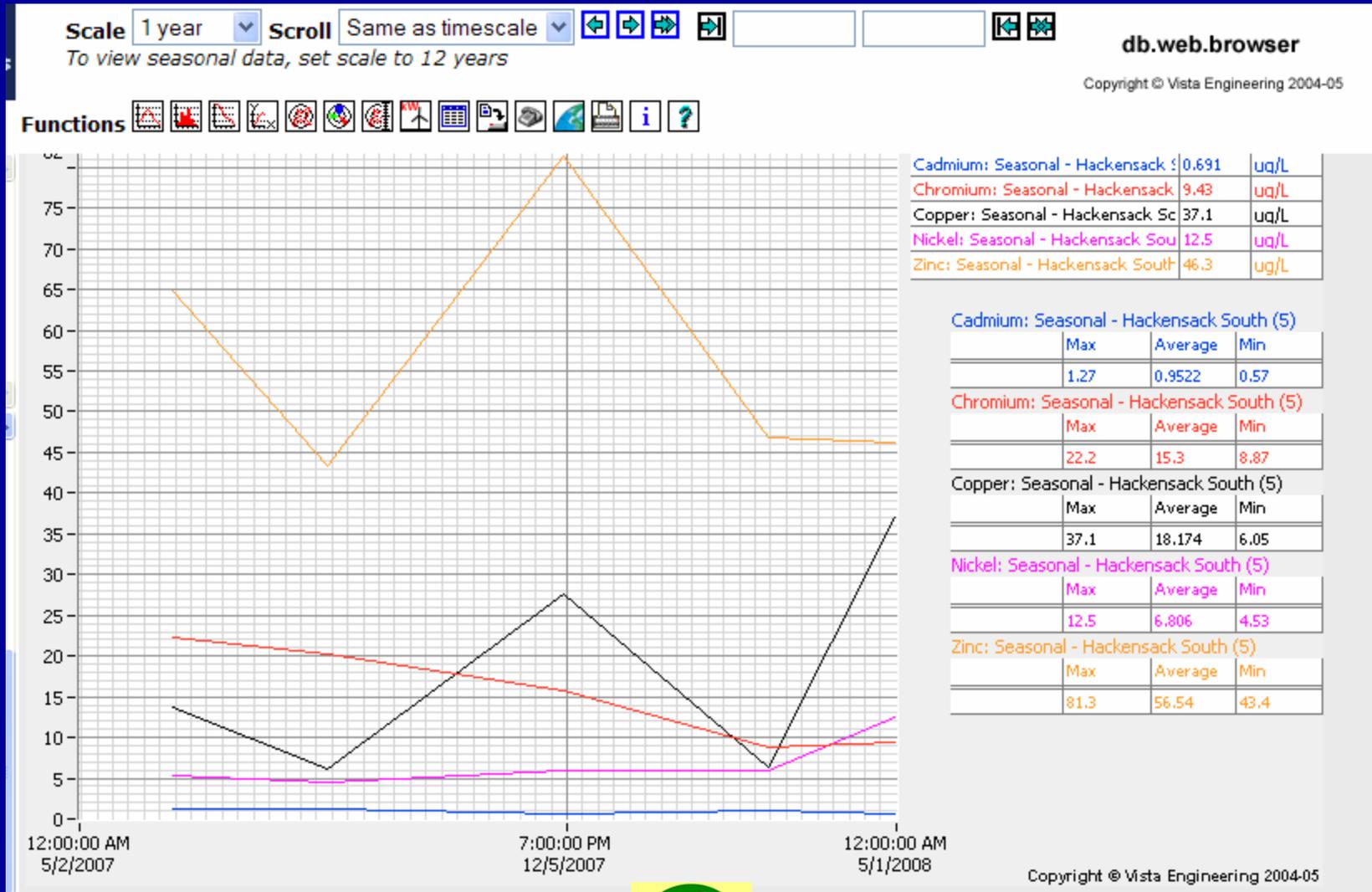
Vista DataVision Copyright © 2004-2008 Vista Engineering



# Continuous Web Interface

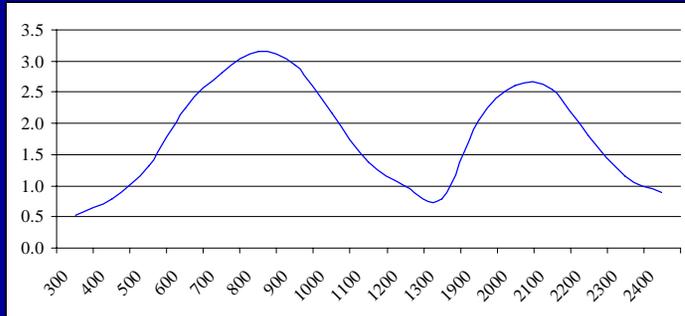


# Seasonal Web Interface



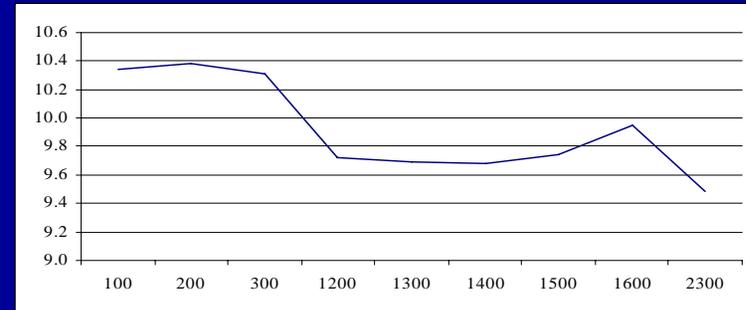
# Case Study: Continuous Monitoring Summary of FDU Station Data Collected: October, 2007 to February, 2008

November 21, 2007

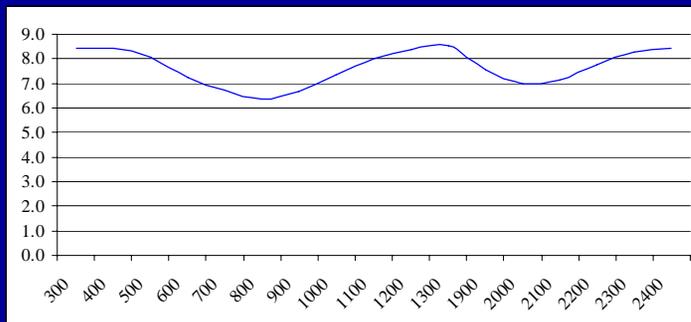


Salinity (ppt)

February 12, 2008



pH (SU)

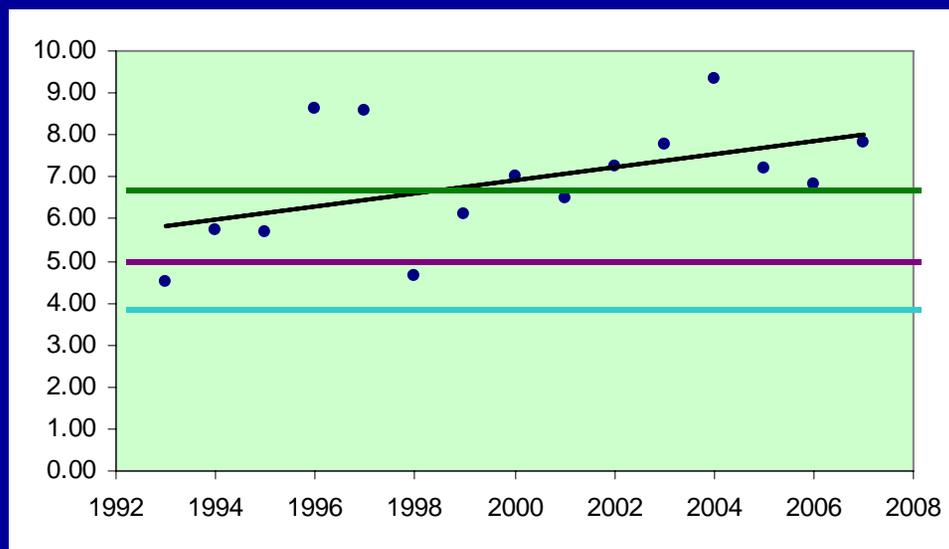


DO (mg/L)

- More than half of the data points collected were invalidated, weakening the ability to discern long term trends
- Snapshots of water quality over shorter intervals can be useful

# Case Study: Seasonal Monitoring Dissolved Oxygen in the Hackensack River: 2007 Update

DO (mg/L)



Criteria Level 4.0

Aquatic Life Stress  
Level 5.0

Hackensack River  
Running Average  
6.8

Long Term Trend  
Slope = 13%

Using dissolved oxygen as an indicator of river health  
5 Sites + 4 seasons = 1 data point

# Environmental Data Disclaimer

*from the website*

- **Disclaimer:** All data from the Meadowlands Environmental Research Institute is made available to the public on the condition that the New Jersey Meadowlands Commission, its employees and agents:
- **Make no representations or warranties regarding the reliability of this data nor the use to which such data should be put.**
- **Disclaim any and all responsibility for any errors or inaccuracies in the data.**
- **Bear no responsibility for any use made of this data by any party.**

