

Using Data to Drive Change



Connecticut Fund
for the Environment

Save the Sound®

Tracy Brown
Director of Western Sound Programs
Save the Sound

Activate Data = Change

**Tell
Stories**

**Shared
View**

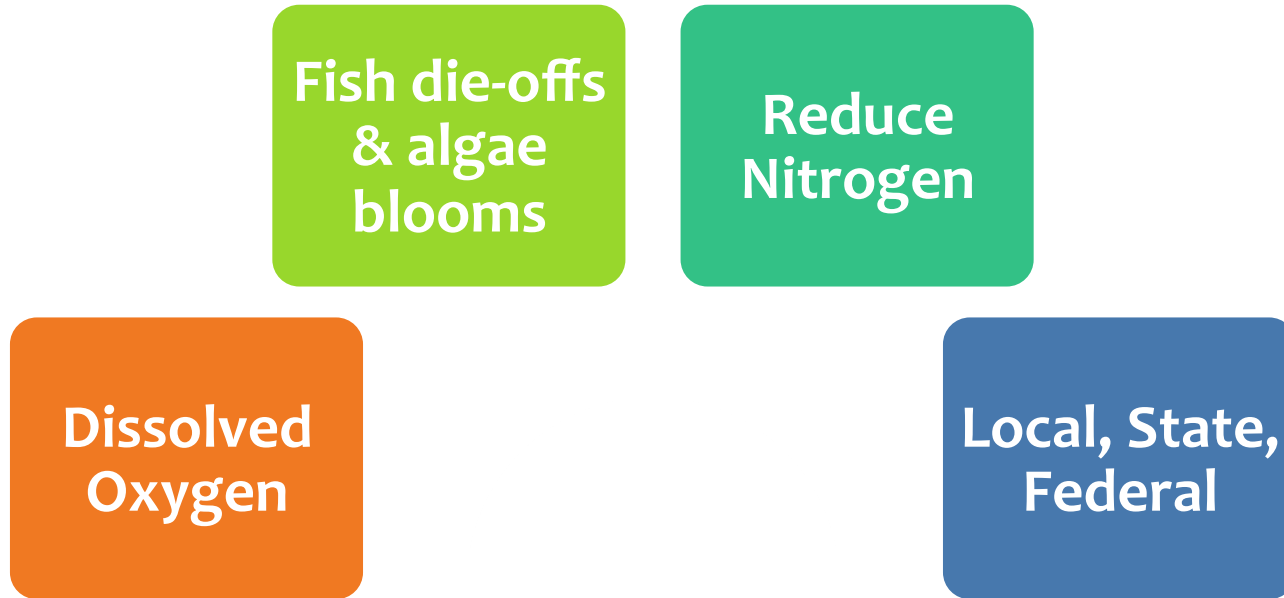
**Analyze
Data**

**Leader-
ship**

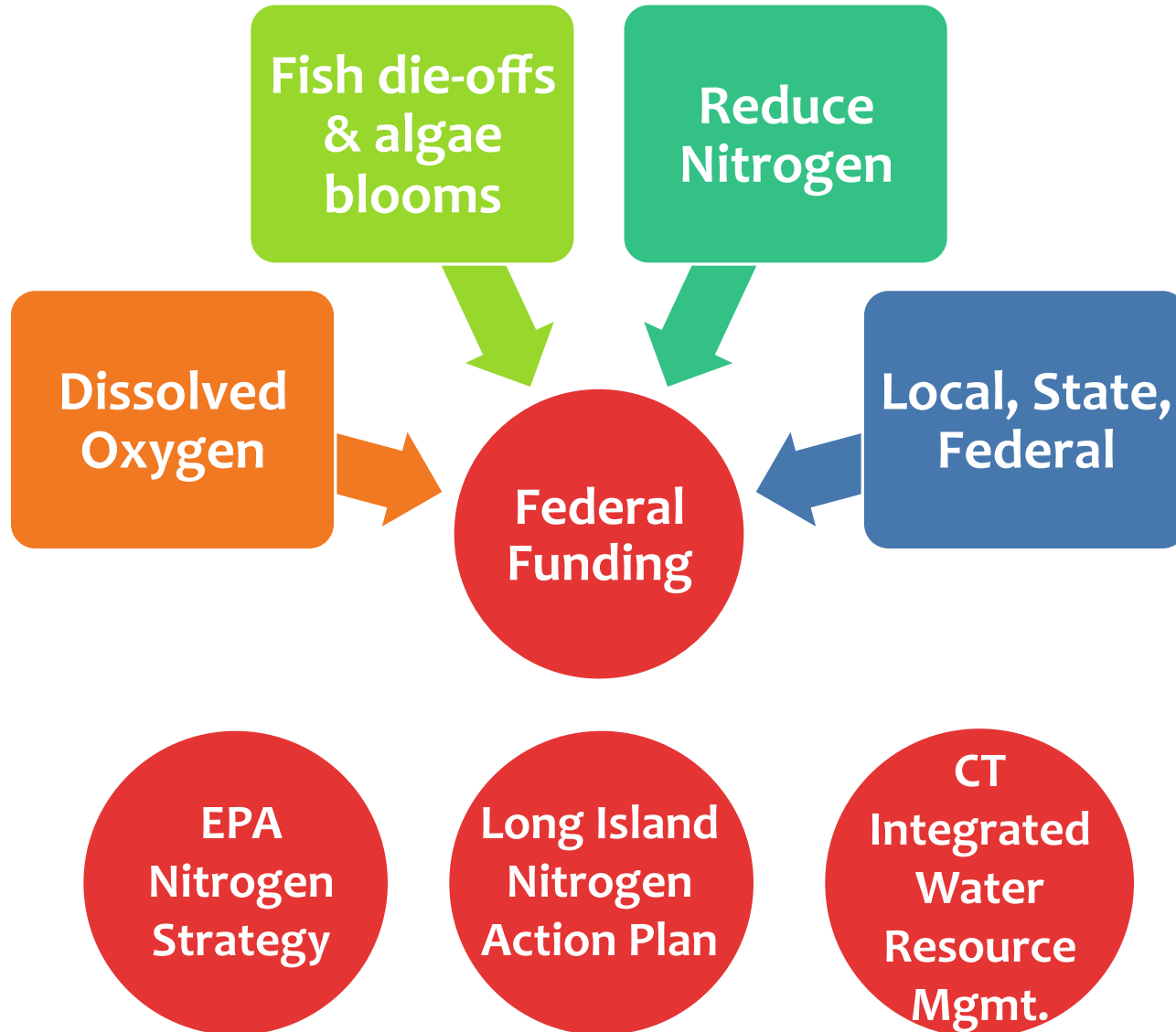
Activate Data = Change



Example



Example



Getting Started



Define Goal

Getting Started



Define Goal

Identify Data Sources

Getting Started



Define Goal

Identify Data Sources

Existing Data:

- Open Source Data
- Historic

Getting Started



Define Goal

Identify Data Sources

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Generate Data:

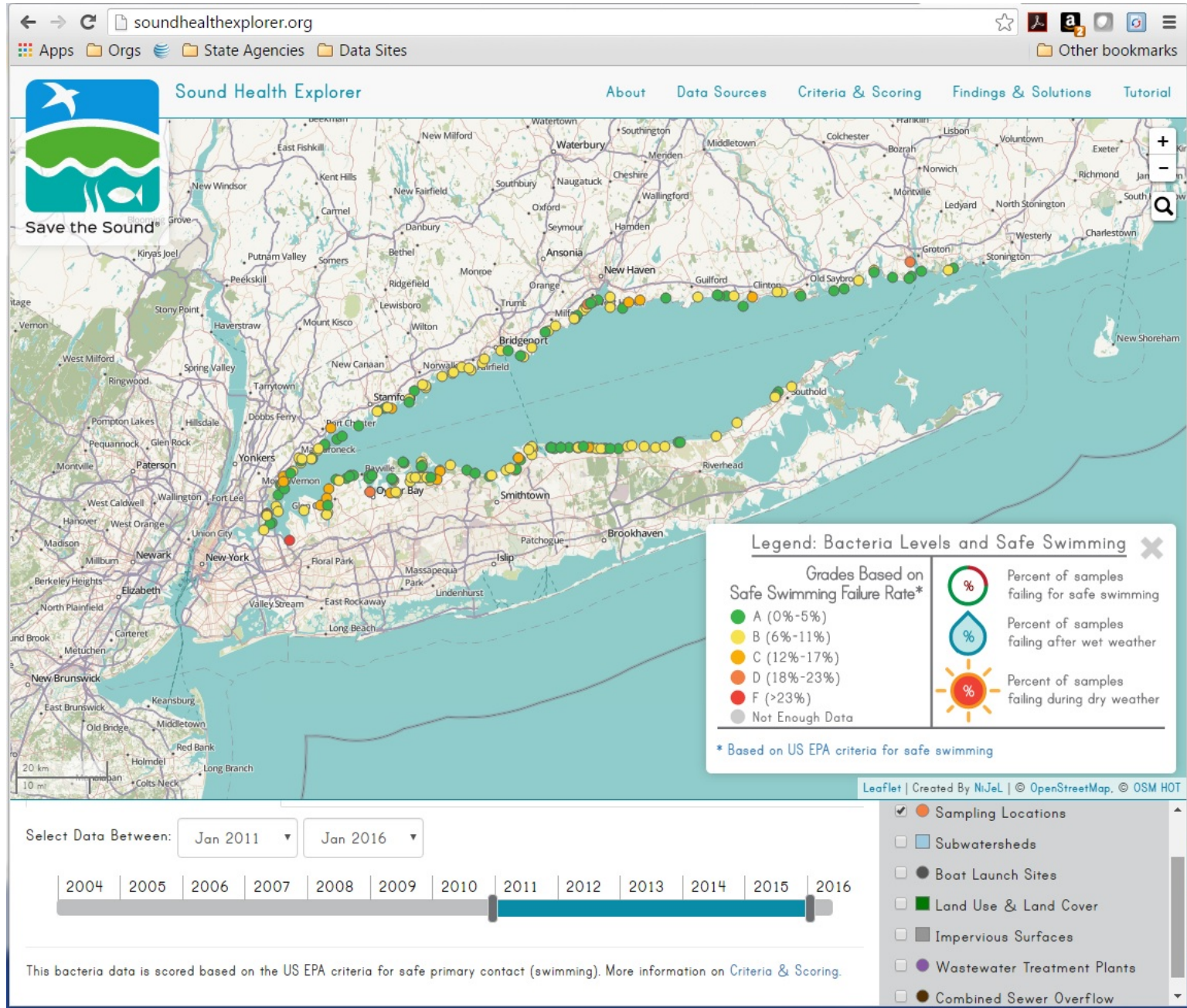
- Citizen Science
- Lab

Water Quality Data

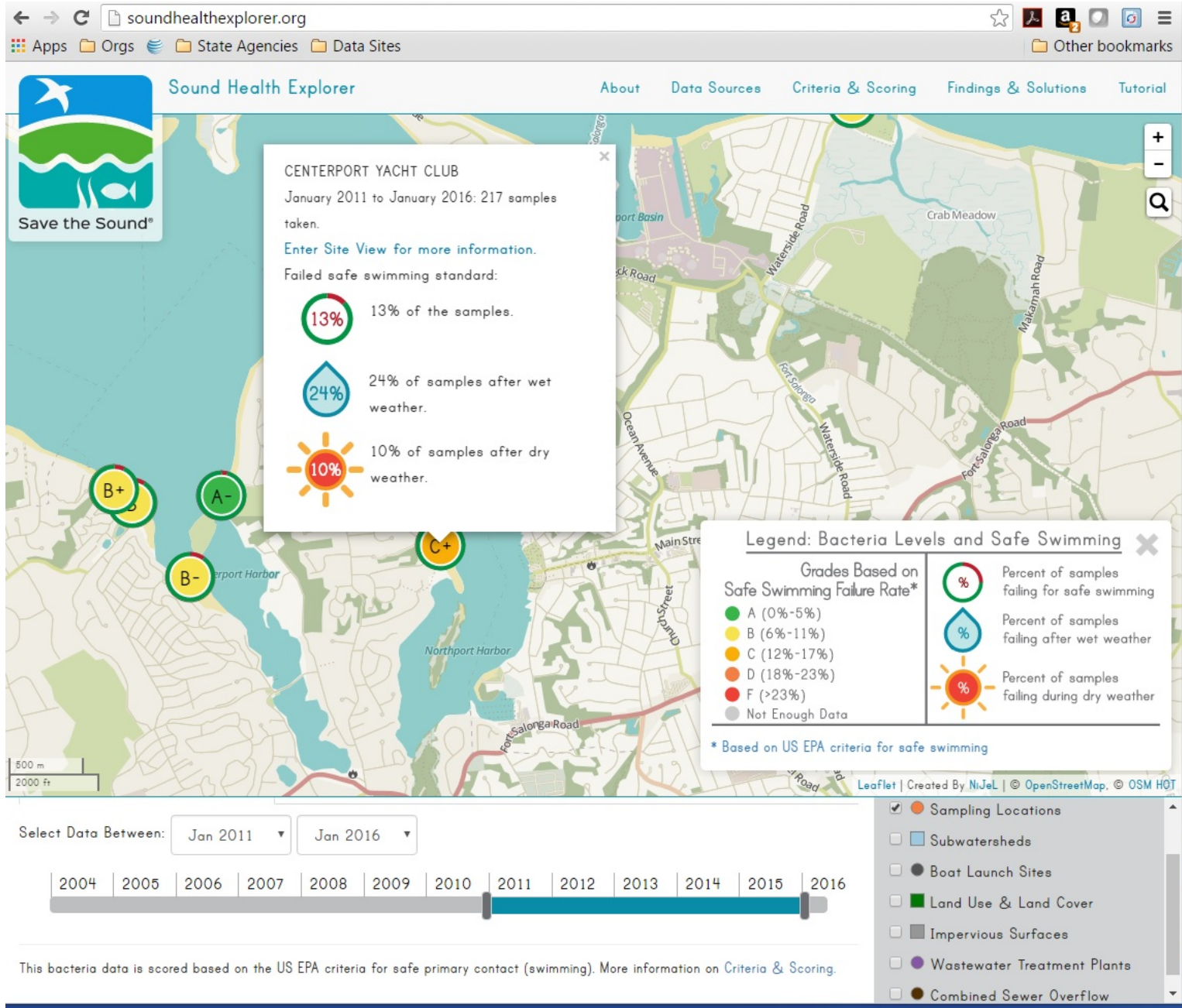
**Making Invisible
Problems Visible**



Example: SoundHealthExplorer.org



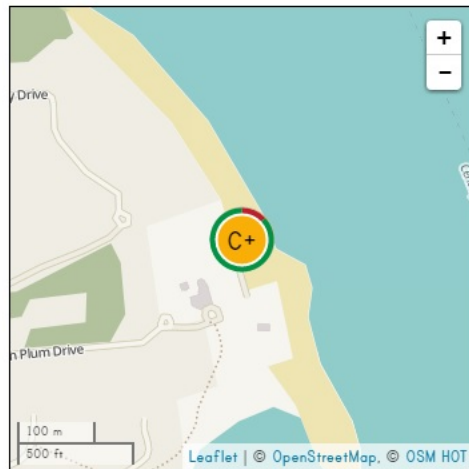
Example: SoundHealthExplorer.org



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Legend: Bacteria Levels and Safe Swimming

Grades Based on
Safe Swimming Failure Rate*

- A (0%-5%)
- B (6%-11%)
- C (12%-17%)
- D (18%-23%)
- F (>23%)
- Not Enough Data



Percent of samples
failing for safe swimming



Percent of samples
failing after wet weather



Percent of samples
failing during dry weather

CENTERPORT YACHT CLUB



Most Recent Sample: Sep 18, 2015

Swim Criteria is ≥ 104 cfu/100mL Enterococcus

Bacteria & Fecal Pollution

View Data As: Interactive Spreadsheet

Select Data Between: Jan 2011 Sep 2015

Date	Type	Score	Rainfall (In.)
09/18/2015	Entero	0	0
09/16/2015	Entero	0	0.0
09/14/2015	Entero	0	0.3
09/12/2015	Entero	0	2.7
09/10/2015	Entero	728	2.4
09/09/2015	Entero	0	0
09/04/2015	Entero	4	0.0
09/02/2015	Entero	4	0.0

Geometric Mean: 0

Minimum: 0

Maximum: 800

Dry Samples: 162

Wet Samples: 55

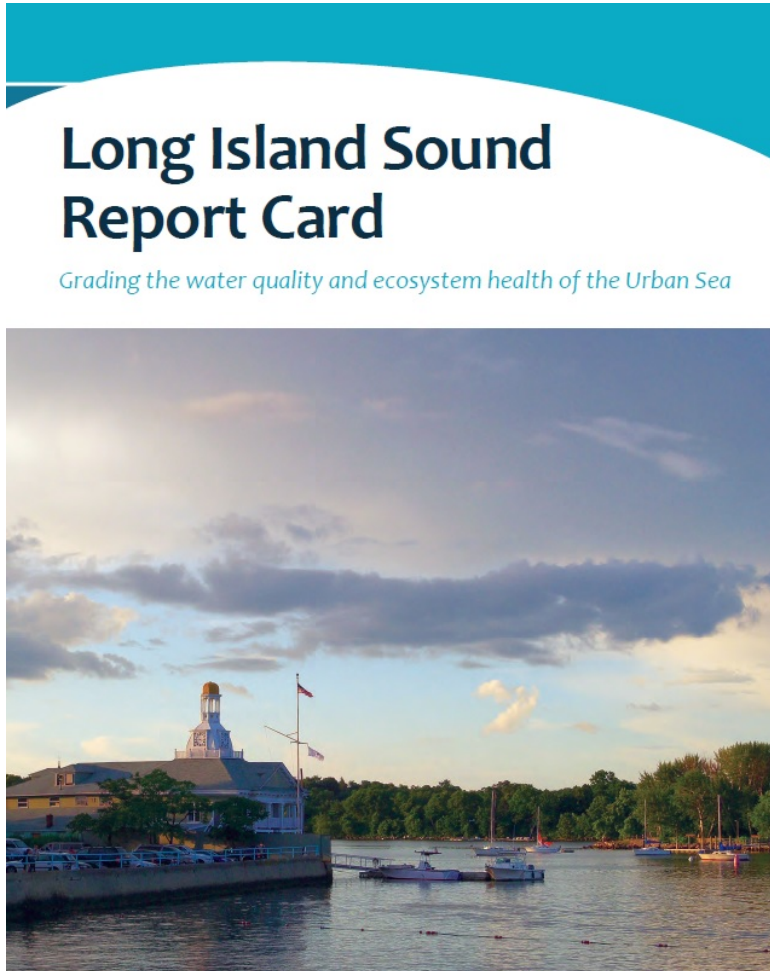
Total Samples: 217

Download All Data

Download Filtered Data

Example:

Long Island Sound Report Card



2015 Long Island Sound Report Cards

Long Island Sound Report Card

Grading the water quality and ecosystem health of the Urban Sea



2015 Long Island Sound Report Cards

Long Island Sound Report Card

Grading the water quality and ecosystem health of the Urban Sea



Norwalk Harbor Report Card

C+



Inner Hempstead Harbor Report Card

D+



Goals: Product

1. Communicate water quality conditions to general public
2. Usable by many groups around Sound
3. Broaden impact of local groups & data

Goals: Process

1. Collaborative process with all stakeholders
2. Find a local organization to produce future report cards
3. Create a framework to address local water quality monitoring needs



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Data

Water quality illustrates the story of pollution and dilution in Long Island Sound

D+ Eastern Narrows



The Eastern Narrows received a D+ (69%), a poor grade, because dissolved oxygen, water clarity, and nutrients continue to be problems. The Eastern Narrows has urban and suburban development and the water has little exchange with the Atlantic Ocean.

B Central



Central Long Island Sound received a B (84%), a moderately good grade, because most indicators scored well. This area is less developed than the Narrows, with fewer pollution impacts, and has better exchange with the Atlantic Ocean.

Long Island Sound



There is a variation from west to east of unhealthy (F) to healthy water quality (A). The Western Narrows is affected by the highly populated, suburban-urban communities surrounding New York

City and scored the worst. Moving east from western Connecticut and western Long Island, the water quality improves. In the eastern Sound, the pollution is diluted by exchange with the Atlantic Ocean. Overall, water quality indicators in Long Island Sound scored good or very good except phosphorus, which scored poorly. Very high turbidity in the Western Narrows restricts light, preventing phytoplankton growth; however, moving east from western Connecticut and western Long Island, turbidity improves, which allows phytoplankton to grow.

Reducing nutrient inputs from human activities on land is critical to improving the health of the Sound. Check out the back page for actions you can take to help the Sound. To find out more about the report card indicators and grades, visit longislandsound.ecoreportcard.org.



F Western Narrows



The Western Narrows received an F (45%), the worst grade out of the entire Sound. Almost every indicator scored very poor or poor. Very high turbidity restricts light, preventing phytoplankton growth, which leads to a good chlorophyll a grade. This area is densely developed, and has very little exchange with the Atlantic Ocean.

B- Western



The Western Long Island Sound received a B- (81%), a moderately good grade. There is a mix of healthy and unhealthy indicator grades. Improved water clarity led to a moderate chlorophyll a grade. This region is influenced by the poor health of the Eastern Narrows, but is somewhat less developed than the Narrows.

A Eastern



The Eastern Long Island Sound received an A (93%), the best grade out of the entire Sound. All indicators scored very good. This region has a lower population and a mix of rural, suburban, and agricultural uses, and has a lot of exchange with the Atlantic Ocean.

Data

Yes, you can swim and fish in the Sound!



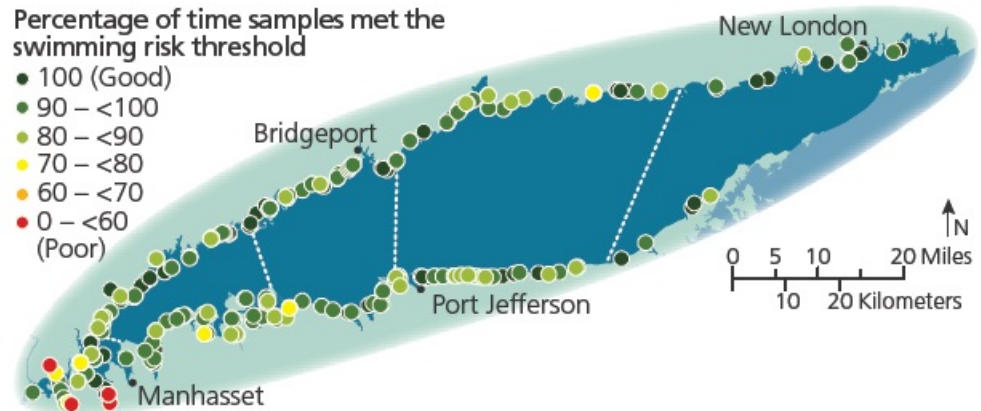
Bacteria

Monitoring bacteria levels in swimming areas.

Tracy Brown

Percentage of time samples met the swimming risk threshold

- 100 (Good)
- 90 – <100
- 80 – <90
- 70 – <80
- 60 – <70
- 0 – <60 (Poor)



Overall, swimming areas had low bacteria levels most of the time, meaning that people can swim. *Enterococcus* bacteria levels are monitored in swimming areas throughout Long Island Sound. These bacteria are an indicator of fecal contamination, and high concentrations of bacteria suggest a potential risk to human health while swimming or recreating on the water.



Shellfish

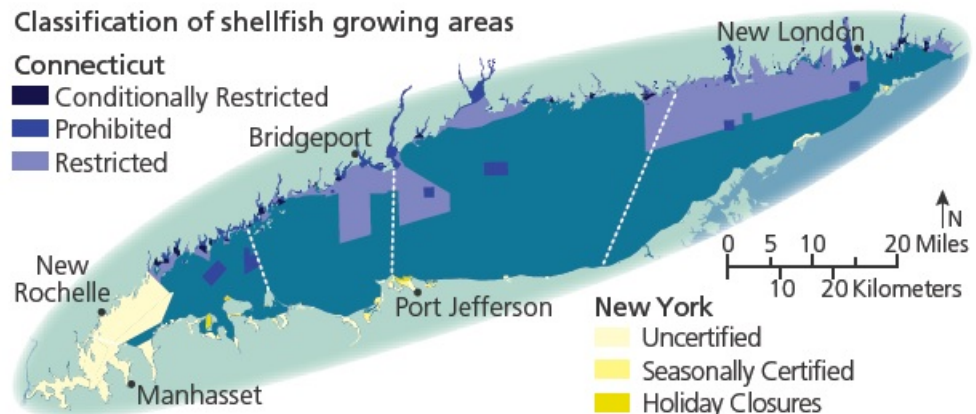
A haul from an oyster bed in Connecticut.

Harbor Watch

Classification of shellfish growing areas

Connecticut

- Conditionally Restricted
- Prohibited
- Restricted



New York

- Uncertified
- Seasonally Certified
- Holiday Closures

Data

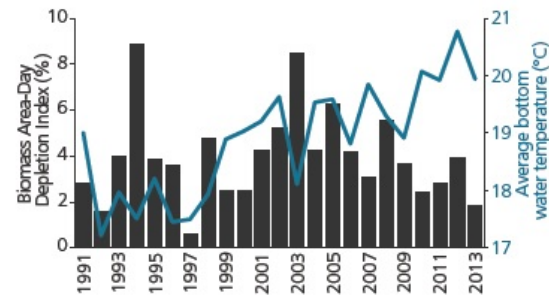
Living resource indicators need improvement



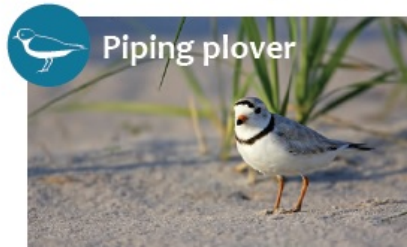
Finfish

Striped bass (Morone saxatilis).

The Biomass Area-Day Depletion (BADD) Index estimates how water quality is affecting finfish, like striped bass and tautog, in Long Island Sound. The lower the BADD Index, the better the dissolved oxygen conditions for finfish. The Index has improved in recent years despite increasing water temperature that intensifies the effects of hypoxia (low dissolved oxygen).

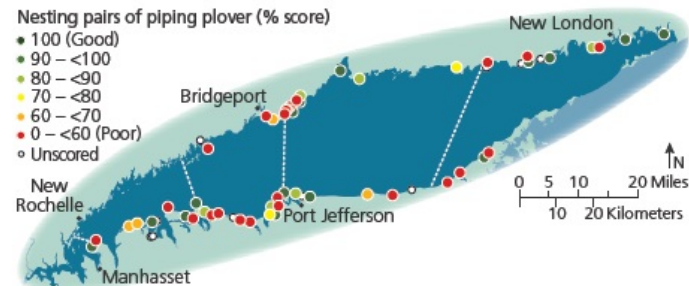


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Piping plover

Adult piping plover.



The piping plover (*Charadrius melodus*) is a small shorebird that is endangered and threatened throughout its range. It makes its nests along the Long Island Sound shoreline each year and is just one of many important birds that use the Sound as a feeding and nursery area. Nesting pairs were compared against a 10-year average for that site and scored on a 0-100% (poor to good) scale. Piping plover productivity varied widely, from no new nesting pairs to more than the average of the previous ten years.



Eelgrass

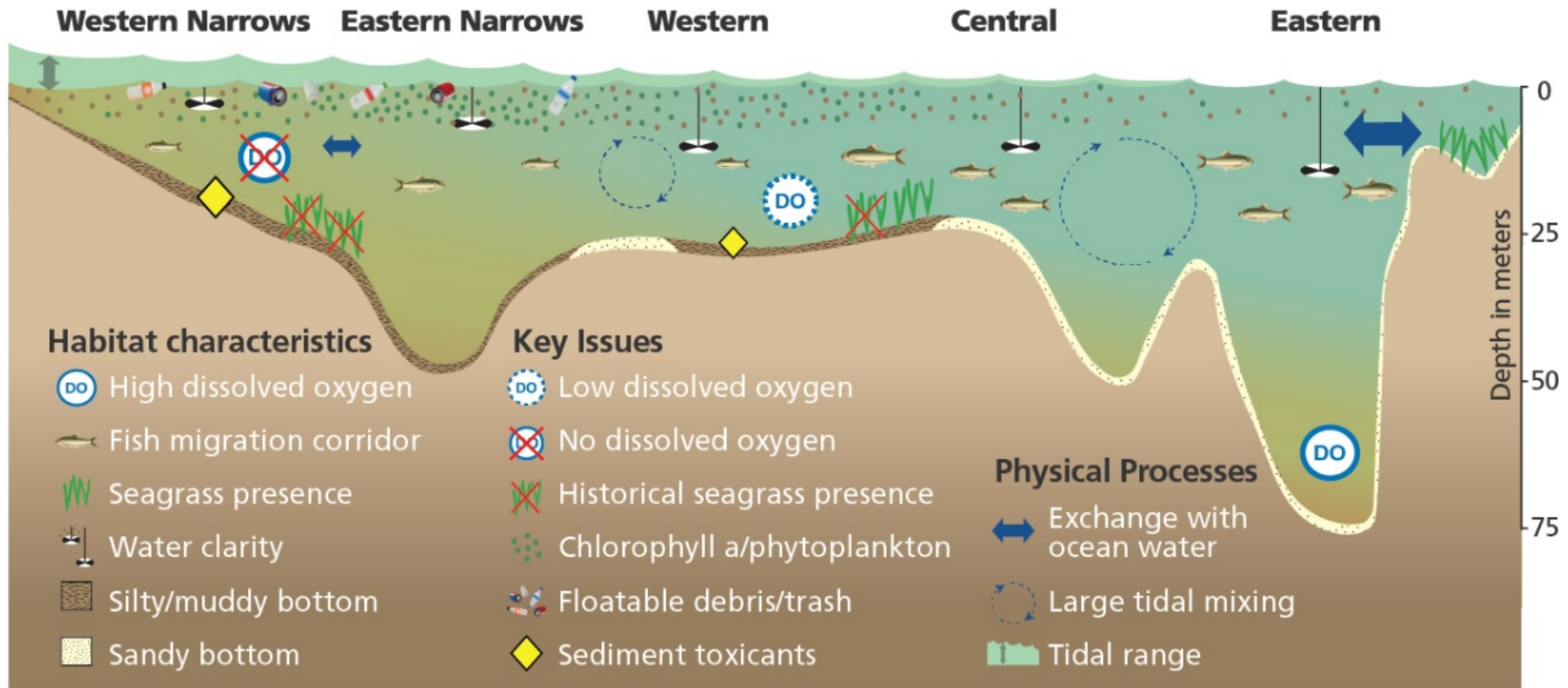
Flounder in eelgrass bed.

Eelgrass (*Zostera marina*) is a submerged plant that grows in shallow areas along the coast. It provides a number of benefits like buffering coastal



Stories

The east-west gradient of people and pollution



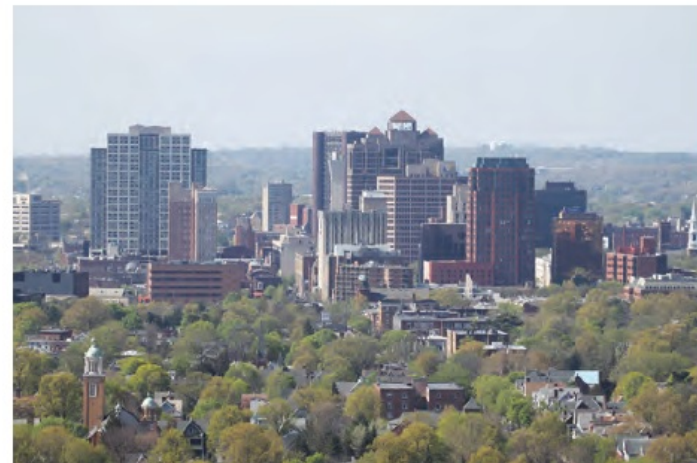
Variation of habitat characteristics, key issues, and physical processes of Long Island Sound from west to east.

Stories

Our actions on land impact our local waters



The Long Island Sound watershed is large and extends from New York City in the south, to Quebec, Canada in the north. The Connecticut River, which runs through Connecticut, Massachusetts, Vermont, New Hampshire, and northward into Canada dominates the watershed. The Housatonic and Thames Rivers in Connecticut are the next largest watersheds, while New York coastal watersheds are relatively small. With more than nine million inhabitants, what gets built in the watershed, and what we apply on or what drains off the land can have consequences for Long Island Sound.



Steve Grant

Above: A typical skyline around Long Island Sound, in New Haven, CT. Trees, houses, and commercial buildings are part of the Long Island Sound watershed. Left: Major watersheds of Long Island Sound.

Shared Point of View



Plan Afoot to Continue to Restore the Long Island Sound

Posted by Beth Young • July 11, 2015 • Environment • 1 Comment



A broad swath of bipartisan federal lawmakers are looking to extend the federal government's support of the restoration of the Long Island Sound.

In late June, a consortium of Connecticut and New York lawmakers introduced legislation that would extend the Long Island Sound Restoration and Stewardship Act from now until 2020. If passed, it would provide a large pool of federal money to clean up the Sound.

In 1985, the EPA, in agreement with the New York and Connecticut, created the Long Island Sound Study, an office under the Environment Protection Agency (EPA) that works to restore the Sound, addressing low oxygen levels and high nitrogen levels that have depleted fish and shellfish populations and hurt wetlands.



FROM THE NEWSROOM: HARTFORD, Conn. (AP) — UConn football coach Bob Diaco says he doesn't need UCF's permission to create a rivalry game with the Knights.

Diaco last week posted a picture of a trophy he had commissioned for the annual game between the American Athletic Conference schools, which he has dubbed "The Civil Conflict." Above the trophy was a countdown clock marking the amount of time until the Oct. 10 game in Orlando.

The post created a social media stir, especially after UConn coach George O'Leary said knew nothing about any rivalry game with UConn.

Diaco said Monday that UConn considers UCF its football rival, whether that feeling is reciprocal or not.

UConn beat UCF 37-29 at Rentschler Field last season, the Huskies' only win over a Division I opponent, and the Knights' lone conference loss.

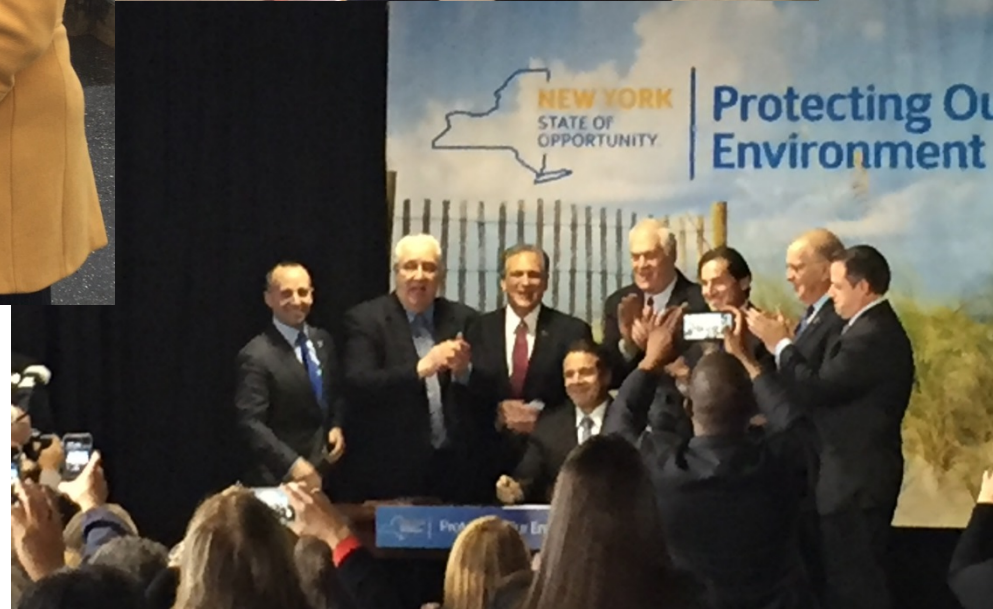
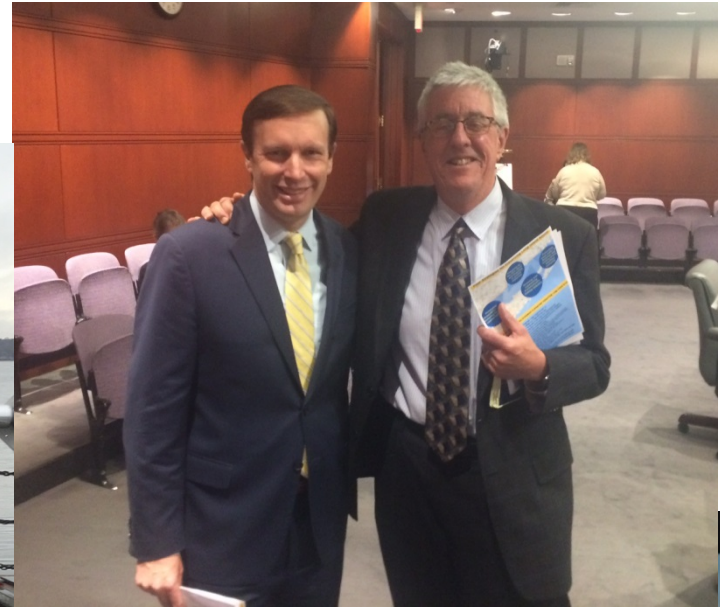
Like • Comment • Share



National news coverage:
TOTAL EXPOSURE

TV, print, radio, online
7 million

Leadership



Next Steps

- Build on Current Momentum!
- 2016 Report Card: 2015 data, same approach

Next Steps

- Build on Current Momentum!
- 2016 Report Card: 2015 data, same approach
- Relate data & scoring to new Action Plans



**EPA
Nitrogen
Strategy**

**Long Island
Nitrogen
Action Plan**

**CT
Integrated
Water
Resource
Mgmt.**

Next Steps

- Build on Current Momentum!
- 2016 Report Card: 2015 data, same approach
- Relate data & scoring to new Action Plans



- 2017 Report Card: updated approach

Next Steps

- Goal: Create a framework to address local water quality monitoring needs

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Unified Water Study

Long Island Sound Embayment Research

citizen science study to measure the impacts of nutrients in all Sound bays and harbors

Participate in the Unified Water Study:

plinderoth@savethesound.org

Call on NYC to reduce nitrogen:

www.tinyurl.com/NYCnitrogenpetition

Thank You!

Stay in touch:

www.SavetheSound.org

www.SoundHealthExplorer.org

www.longislandsound.ecoreportcard.org



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