



Department of
Environmental
Conservation

Long Island Nitrogen Action Plan (LINAP)

June 12, 2024



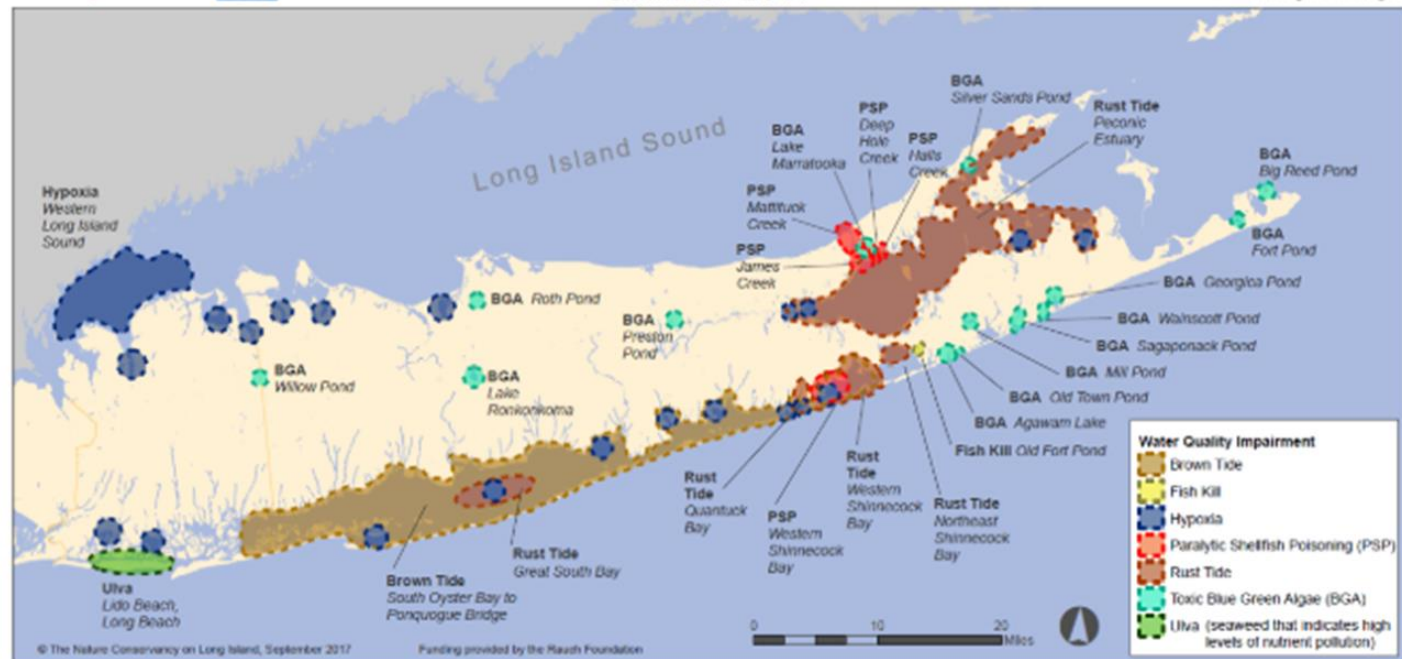
Stony Brook University
School of Marine and
Atmospheric Sciences



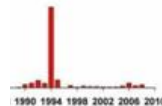
Long Island Water Quality Impairments Summer 2017

RAUCH
FOUNDATION

The Nature
Conservancy
Protecting nature. Preserving life.

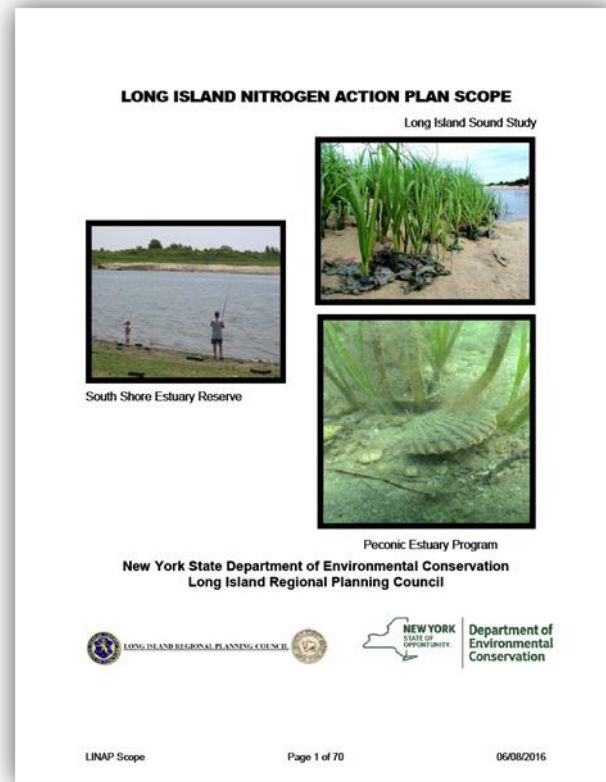


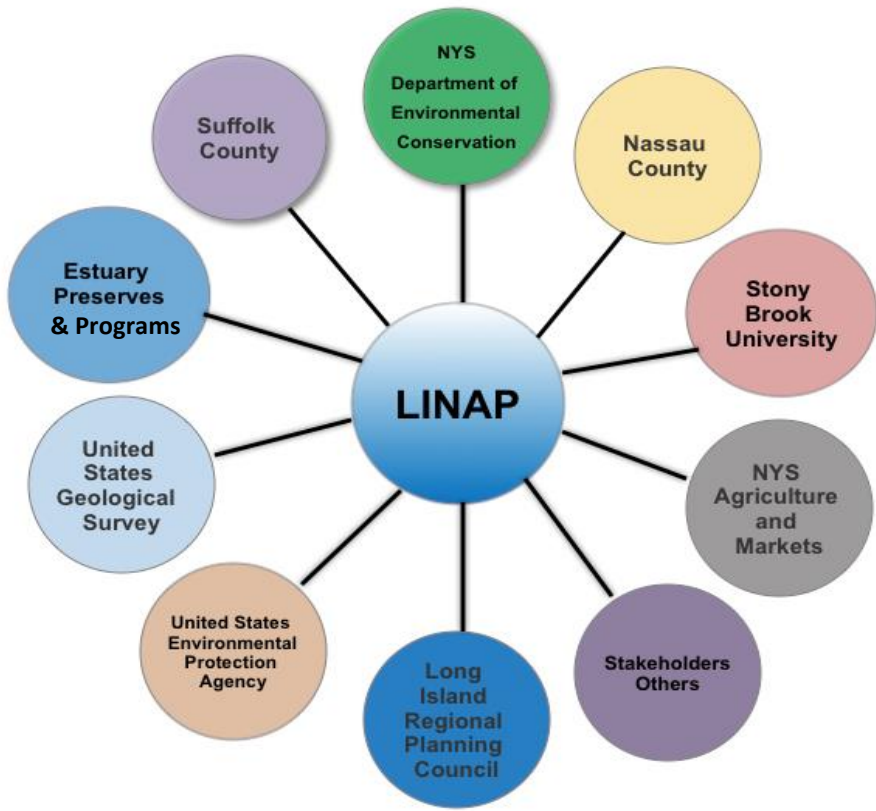
callop Landings
mercial -



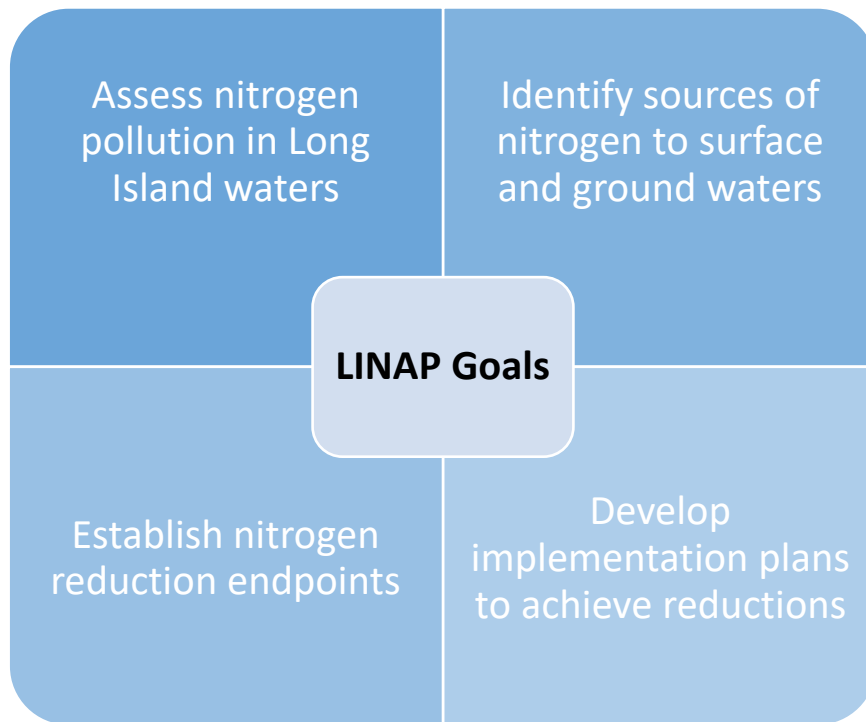
LINAP

- Long Island Nitrogen Action Plan (LINAP) started in 2015
- Scope document developed based on public comments and stakeholder input to guide the program
- A broad, multi-year initiative to reduce nitrogen impacts on water quality



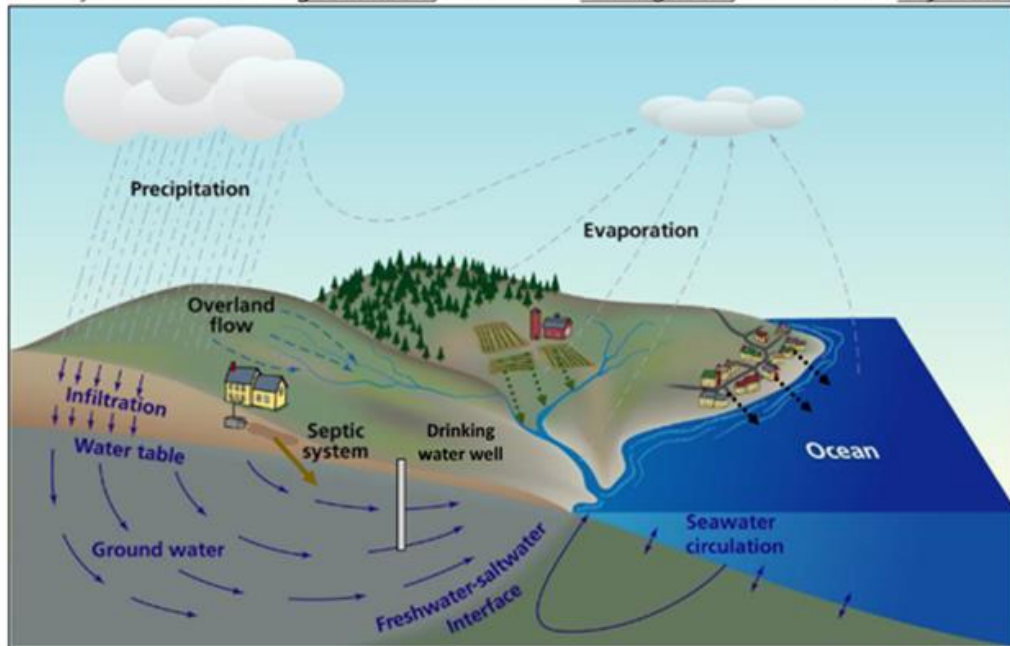


Goals of LINAP

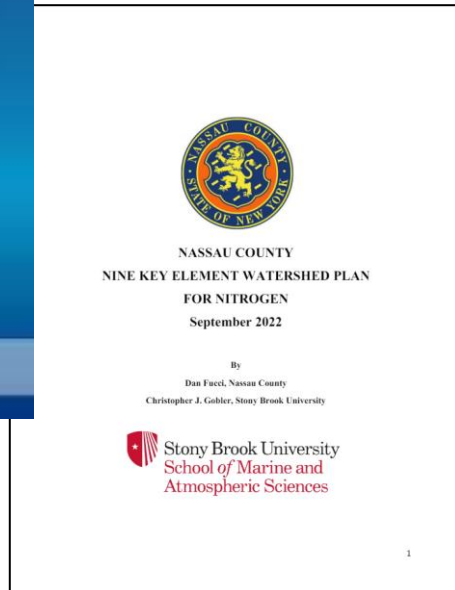
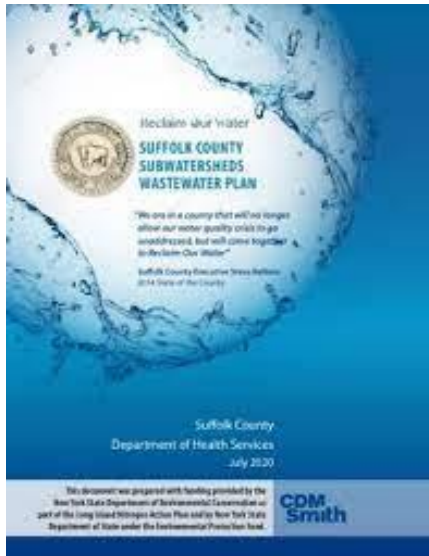


All of Long Island is a watershed -

Materials from land enter our groundwater, become our drinking water, and enter our surface waters



Subwatershed Plans



- ✓ Both DEC approved Nine Element Plans
- ✓ Both use NLM model to calculate the nitrogen loading to the groundwater
- ✓ Both estimate the nitrogen loading to the surface water/embayments for individual waterbodies



Sources of Nitrogen

Most nitrogen loading from wastewater

((Kinney and Valiela, 2011; Lloyd 2014, 2016; Gobler and Stinette, 2016; SCSWP, 2020; NCSWP, 2020, 2022))



Image credit: Christopher Gobler, SBU SoMAS via NYSG

1. Human waste

- *Residential septic systems or cesspools*
- *Municipal wastewater facilities*

2. Fertilizer

- *Residential turfgrass*
- *Golf courses*
- *Agricultural use*

3. Stormwater runoff

4. Atmospheric deposition



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Water Quality Standard

- NYS Water Quality Standard for Nitrogen: *None in amounts that result in the growths of algae, weeds, and slimes that will impair the waters for their best usages.*



Image credit: US Coast Guard Auxiliary via NYSG



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End Points

Dissolved Oxygen

- 4.8 mg/L, with allowable excursions to not less than 3.0 mg/L for certain periods of time

Chlorophyll-a

- Maximum of 5.5 $\mu\text{g/L}$

Secchi depth

- Minimum of 2 meters

Goals of LINAP

- ✓ Assess nitrogen pollution in Long Island waters
- ✓ Identify sources of nitrogen to surface and ground waters
- ✓ Establish nitrogen reduction endpoints
- Develop implementation plans to achieve reductions



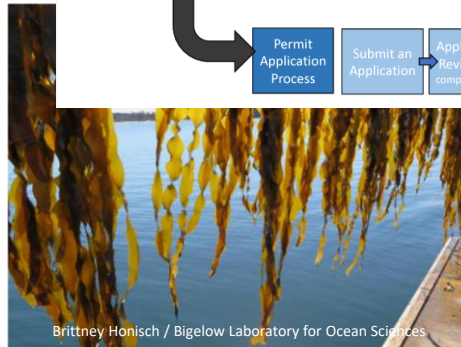
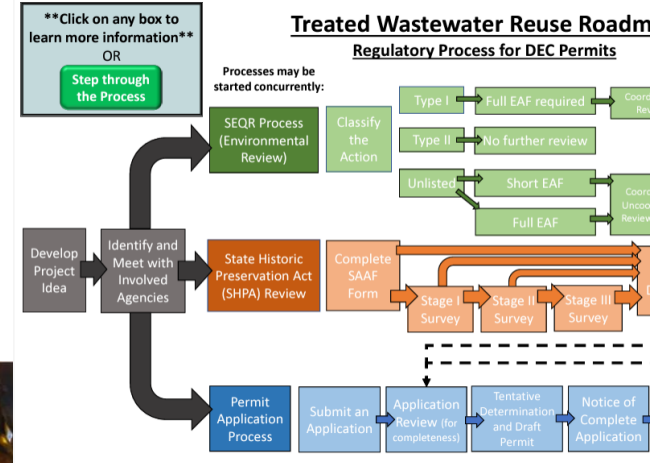
Current Initiatives

Initiatives

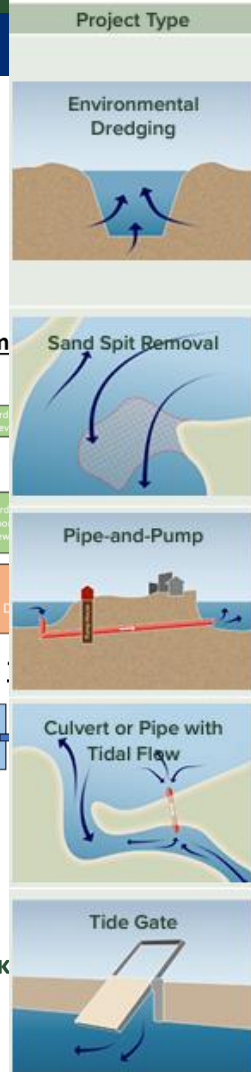
- Septic Replacement (funding)
- Nutrient Bioextraction Initiative
- Fertilizer Management
- Water Reuse
- Hydro-Modifications (Water Exchange Projects)
- Nitrogen Smart Communities Program



Cleaner Water for a Better Future



Brittney Honisch / Bigelow Laboratory for Ocean Sciences



Suffolk and Nassau County

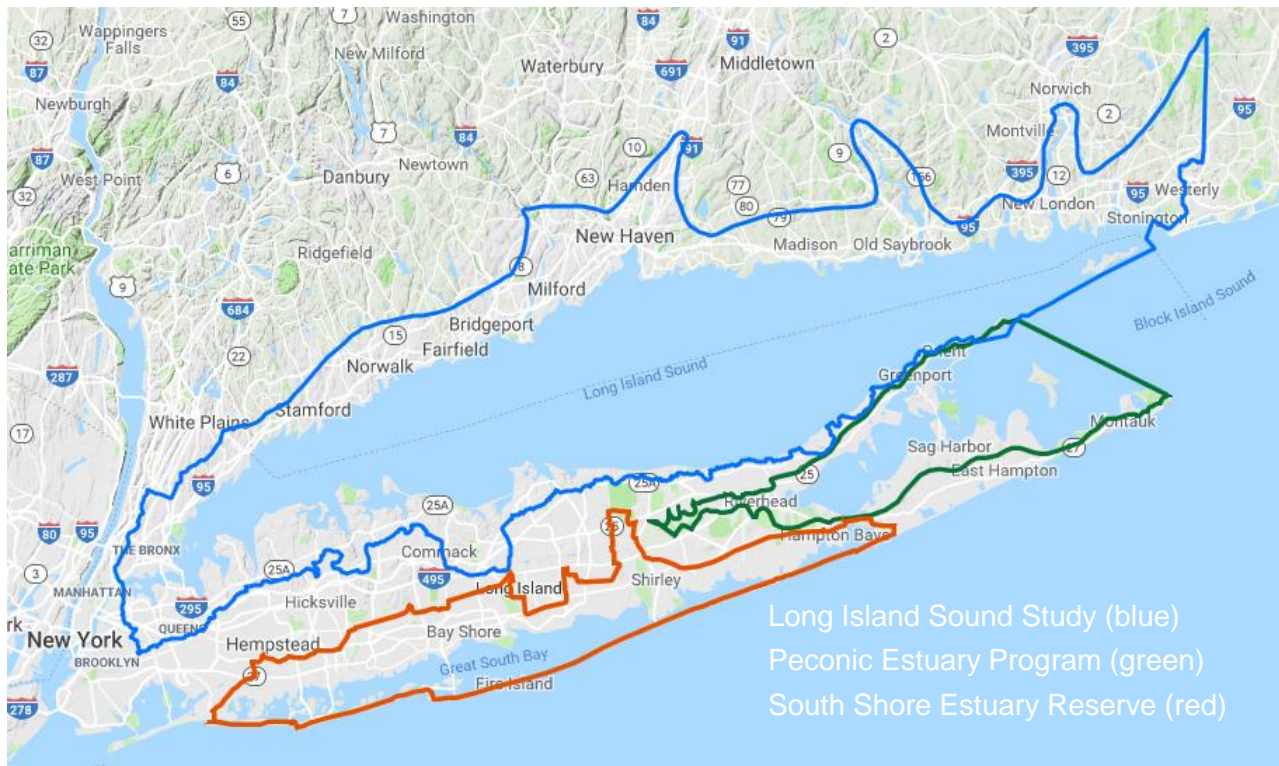


CCWT & Stony Brook University

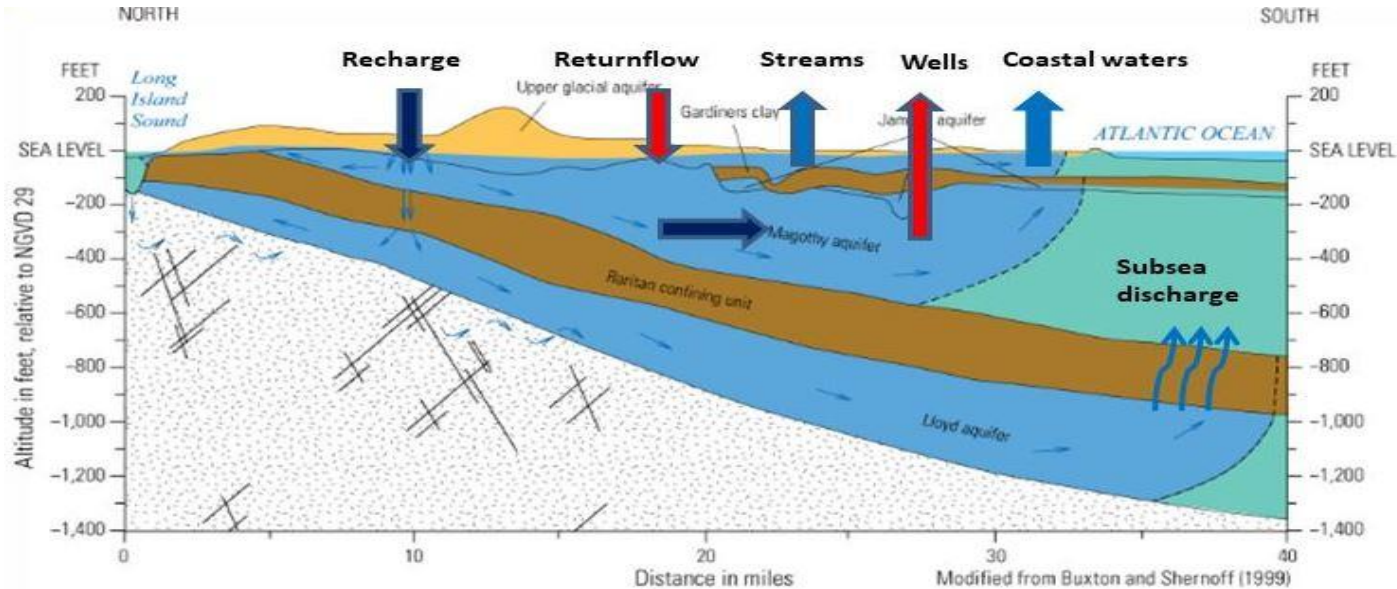
- Research Facility for Innovative Onsite Wastewater Treatment
- Nitrogen Removing Biofilters
- Constructed Wetlands
- Permeable Reactive Barrier



Estuary Programs



Long Island Sound Study (blue)
 Peconic Estuary Program (green)
 South Shore Estuary Reserve (red)



- Delineate groundwater Subwatershed
- Determine groundwater recharge areas, travel times and outflows to streams and embayments
- Explore sustainability of Long Island's drinking water supply



Moving forward

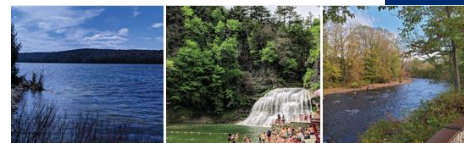
Expanding LINAP

- Action Agenda in development
- Focus: Water quality and things affected by the water quality



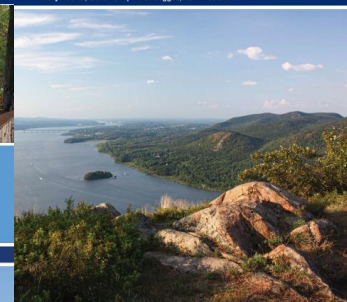
NEW YORK STATE Department of Environmental Conservation
**Hudson River Estuary
 Action Agenda 2021–2025**
 OPPORTUNITIES FOR ACTION

Kathy Hochul, Governor | Basil Seggos, Commissioner



NEW YORK STATE Department of Environmental Conservation
**New York's Great Lakes
 Action Agenda 2023**

Kathy Hochul, Governor | Basil Seggos, Commissioner



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Action Agenda

- Goal categories include
 - Clean Water
 - Healthy Habitats
 - Sustainable Groundwater Resources
 - Inspired & Engaged Public



Action Agenda & Eelgrass

- Healthy Habitats goal category will include seagrass protection



Image credit: Cornell Cooperative Extension Suffolk County



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Where to Go for More Information on LINAP

- Visit the LINAP website to view important documents
<https://www.dec.ny.gov/nature/waterbodies/oceans-estuaries/linap>
At DEC website, search on 'LINAP' in the search function in the green banner
- Join the LINAP e-Newsletter to hear about updates and new developments
https://public.govdelivery.com/accounts/NYSDEC/subscriber/new?topic_id=NYSDEC_174
Also in the blue DEC Delivers box on the LINAP website in first bullet
- Questions still not answered? Send us an email
liwaterquality@dec.ny.gov



Questions

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