



# LONG ISLAND NITROGEN ACTION PLAN

## What is LINAP?

LINAP is a multiyear initiative to reduce nitrogen in Long Island's surface and ground waters through technical, management, regulatory and policy action.

A broad partnership is working together to develop and implement LINAP, which includes the New York State Department of Environmental Conservation (NYSDEC), the Long Island Regional Planning Council (LIRPC), Suffolk and Nassau counties, local governments, area scientists, numerous environmental organizations, non-governmental organizations and a cadre of consultant services.

## GOALS OF LINAP

- Assess and identify sources of nitrogen and impacted waterbodies
- Establish nitrogen reduction endpoints
- Develop and implement plans to achieve reductions

## Why is Nitrogen Harmful?

Nitrogen is the leading cause of water quality deterioration in Long Island's surface and groundwater. Nitrogen comes primarily from wastewater, such as sewage treatment plants and residential cesspools, fertilizer and stormwater runoff. Discharge from onsite wastewater disposal systems (cesspools and septic systems) reaches groundwater, which ultimately flows to surface waters (bays and estuaries). Excess nitrogen in surface waters stimulates algal (plant) growth which can lead to low oxygen conditions, fish kills, and degraded marine habitats such as marsh land. Nitrogen also contaminates the groundwater which is the sole source of Long Island's drinking water.



**Nitrogen in Drinking Water Aquifers:** Nitrogen and other pollutants remain a constant concern throughout Long Island as the drinking water for the 2.8 million residents is drawn from groundwater aquifers recharged from the surface.

**Nitrogen and Algal Blooms:** Nitrogen is a nutrient that supports the growth of algae. When unusual conditions exist, such as excess nutrients, a particular algal species may take advantage over others and grow uncontrollably into a nuisance algal bloom. Some blooms involve species that produce toxins or have other harmful impacts. These algal blooms have adverse impacts on swimming, fishing, shellfishing and boating.

**Nitrogen Impacts on Shellfish:** Poor water quality has severely degraded shellfish populations, and negatively impacted shellfish restoration efforts. Scallop landings in Peconic Bays declined by 99% between 1985 and 1994 due to the occurrence and repeated blooms of the HAB known as Brown Tide. Scallop landings have increased considerably in the past five years due to the success of restoration efforts and absence of Brown Tide in Peconic Bays. Hard clam landings are only a fraction of their historic levels in Great South Bay due to the continued occurrence of Brown Tide that has negatively impacted recruitment and survival of juvenile clams and restoration efforts.

**Nitrogen Impacts on Eel Grass:** Eel grass stabilizes bottom sediments, improves water quality and provides critical habitat for numerous marine species. It also protects our shorelines from erosion by absorbing wave energy. There has been a 90% decrease in eel grass acres since 1930 from increased nitrogen and sedimentation.

**Nitrogen Impacts on Marshland:** Salt marshes are vital to coastal ecosystems and help protect Long Island's south shore from storm inundation. Excess nitrogen has contributed to the loss of salt marshes in recent decades.

***Nitrogen levels are rising in both surface and groundwater. Environmental and economic impacts are evident. The Long Island Nitrogen Action Plan is the roadmap to reduce nitrogen in Long Island's water.***

## What is Being Done

There are many activities targeting nitrogen mitigation currently underway. LINAP is working in parallel with these efforts to meet the goal of developing a robust nitrogen loading reduction plan for Long Island:

- Septic incentive programs in Suffolk and Nassau counties
- Wastewater and sewer improvements in Nassau and Suffolk counties, including upgrades to the Bay Park Sewage Treatment Plant
- Groundwater monitoring and studying the sustainability of Long Island's aquifer that is used for drinking water
- Development of innovative alternative on-site wastewater treatment systems
- Nitrogen Smart Communities program
- LINAP Embayment Water Exchange Study
- Long Island Garden Rewards Program to encourage stormwater retention on property
- Assessing the amount of nitrogen being discharged island wide into the ground and surface water (called "subwatershed planning")

## HOW CAN YOU GET INVOLVED?

Visit the LINAP webpage to learn more about what is being done to address nitrogen pollution.



Subscribe to the LINAP newsletter to stay updated on current initiatives and events.



Questions still not answered? Send us an email: [Llwaterquality@dec.ny.gov](mailto:Llwaterquality@dec.ny.gov)