PECONIC GREEN GROWTH

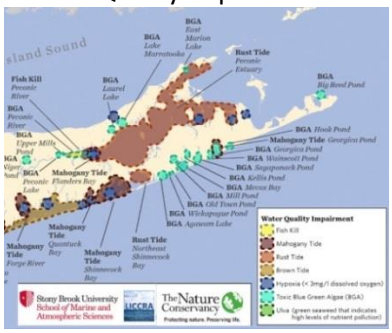
VILLAGE OF SAG HARBOR

TOWN OF SOUTHAMPTON

Water sustains life and symbolizes purity. But water quality is degrading. Our ground and surface waters need protection. The aquifers are not only sources of drinking water, but flow horizontally to surface waters, impacting the marine health of our bays. Excess nitrogen compounds are a critical cause of algal blooms, which lower oxygen levels, create toxins, and ultimately cause fish kills. Contaminants of emerging concern, such as pharmaceuticals and personal care products, need to be treated before being released to ground and surface waters. Poor water quality will ultimately impact community character and vitality, which are especially relevant for our coastal and tourist economies.

The following is a snapshot of local issues that impact excess nitrogen loading. More detailed maps are available at http://peconicgreengrowth.org/community-maps-2014/ where you can find the areas needing priority action, as well as identify conditions relevant to your home. Visit our website to learn about options for upgrading your wastewater system to help protect your environment.

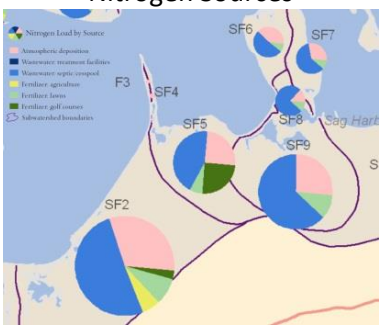
LI Water Quality Impairments 2016



EXCESS NITROGEN (N) LOADING

- Excess nitrogen compounds can be harmful to human health.
- Our surface waters are 20 times more susceptible to N loads than maximum contaminant levels for drinking water.
- Excess N feeds algal blooms, which in turn create toxins. These impact fish and shellfish formation and survival rates.
- Excess nitrogen contributes to declines in eel grass and wetland grass beds. Their loss impacts marine habitats and reduces their usefulness as property buffers in storms.
- The algal blooms are becoming more numerous and potent.

Nitrogen Sources



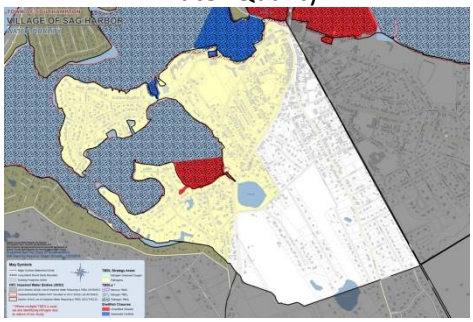
Courtesy TNC and Prof. Christopher Gobler

SOURCES OF EXCESS NITROGEN

The Village of Sag Harbor (Southampton portion) lies mostly in a subwatershed it shares with Noyac. This subwatershed (SF9) is responsible for 3% of all the nitrogen loading in the Peconic Estuary (of 43 subwatersheds). Sources are estimated as coming from:

68%	septic/cesspool systems
22%	atmospheric deposition
9%	fertilizer from lawns
1%	fertilizer from golf courses

Water Quality



VILLAGE OF SAG HARBOR (Southampton) WATER QUALITY

- Rust Tide (algae) and hypoxia have appeared repeatedly in Sag Harbor.
- Waters near the VSH frequently show high ratios of dissolved organic nitrogen to inorganic nitrogen, an indicator of poor water quality contributing to algal blooms.
- Portion of Sag Harbor Bay and Upper Sag Harbor are closed to shellfishing.
- Part of Lower Sag Harbor is seasonally certified for shellfishing.
- TMDL's for pathogens exist for Sag harbor Bay and Lower and Upper Sag Harbor.

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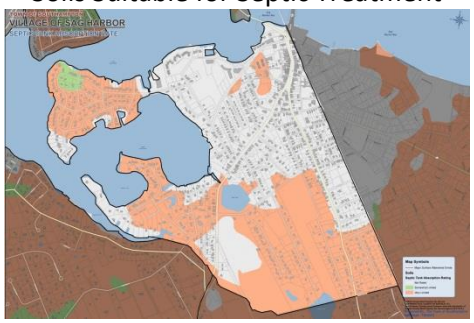
This summary was funded by a grant from the Long Island Community Foundation.

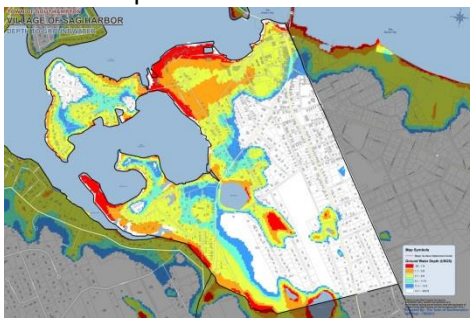
VILLAGE OF SAG HARBOR

PECONIC GREEN GROWTH **TOWN OF SOUTHAMPTON**

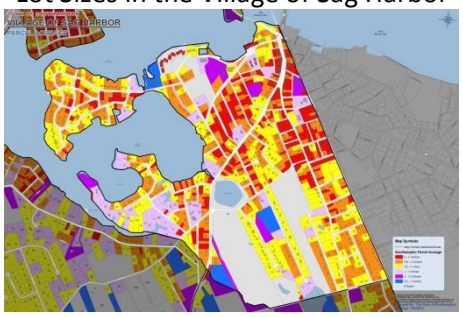
Soils Suitable for Septic Treatment



Depth to Groundwater



Lot Sizes in the Village of Sag Harbor



By 2080 we estimate that 70 buildings in The Village of Sag Harbor will be inundated.

CESSPOOLS VS. SEPTIC SYSTEMS

CESSPOOLS, which are often found on properties developed before 1973, dispense all wastewater with no treatment directly to the ground. Dissolved solids, contaminants and pathogens can percolate to groundwater. The current code requires SEPTIC SYSTEMS, which places an enclosed tank before the leaching pits (which resembles a cesspool) or field. In the tank, fats rise and solids settle to the bottom, where microbes treat the solids. Clarified effluent is dispensed, with 10% of nitrogen mitigated. New, enhanced systems can lower nitrogen levels by 50 – 90%. 352 buildings (34%) in the Village of Sag Harbor are on soils considered unsuitable for onsite septic treatment.

DEPTH TO GROUNDWATER and FLOOD/SLOSH ZONES

The Suffolk County Sanitation Code (SCSC) requires a 3-foot separation distance from the bottom of wastewater systems to groundwater to allow for natural treatment and filtering of effluent. When groundwater is less than 7 feet below grade, there can be difficulties siting the system. Where depths to groundwater are less than 13 feet, systems are likely to become noncompliant as groundwater elevations rise due to climate change. In the VSH 565 buildings (54%) have depths to groundwater of less than 13 feet. 52% are in SLOSH zones.

SMALL LOT SIZES

In the Village of Sag Harbor **74%** (765) of the developed lots are **nonconforming** to the 20,000 SF (nominal half-acre) minimum lot sizes SCDHS requires to dilute wastewater to acceptable contamination levels for drinking water. If a community relies on individual wells, this minimum lot size is even larger – a nominal one acre. The contaminant concentrations discharged from these systems are higher than code. There are 481 (47%) developed, unsewered parcels sized ¼ acre or less in the Village of Sag Harbor not in a sewer district.

CLIMATE CHANGE

By 2080 an estimated 367 buildings in the VSH will most likely have their wastewater treatment systems compromised due to inadequate horizontal distances to surface waters.

INFLUENCE ZONES

Denoting the Time it Takes Groundwater to Reach Surface Waters

677 or **65%** of the buildings in the Village of Sag Harbor are in the "Pink Zone," where it only takes 0-2 years for groundwater and contaminants to reach surface waters. It makes sense to prioritize improvements in the "pink" zone, as the beneficial impacts will be felt more quickly.

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