Inland Wetlands and Watercourses & Long Island Sound

Garden Club of Old Greenwich

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Nutrient pollution is one of America's most widespread, costly and challenging environmental problems, and is caused by excess nitrogen and phosphorus in the air and water.

United States Environmental Protection Agency

Inland Wetlands vs. Tidal Wetlands

- Interrelated
- Regulated separately
- Equally valuable to Long Island Sound

Inland Wetlands

Land, including submerged land which consists of any of the soil types designated as poorly drained, very poorly drained, alluvial, and floodplain

Tidal Wetlands

Lowlands subject to tidal inundation and whose surface is at or below an elevation of one foot above local extreme high water

Benefits of Conserving Wetlands and Watercourses

- Habitat
- Pollution Renovation
  - Thermal
  - Chemical
  - Solids
- Flood Amelioration
  - Erosion & Sediment Control
  - Water staging


More than a filter…
Wetlands remove nitrogen and phosphorus through a combination of physical, chemical, and biological processes.
These naturally occurring processes adsorb/absorb, transform, sequester, and remove the nutrients and other chemicals as water slowly flows through the wetland.

Processes of nutrient removal

Physical

- **Particle settling**

  (sedimentation),

- **Volatilization**

  (releasing as a gas into the atmosphere), and

- **Sorption**

  (nutrient adhering to a solid (adsorption) or diffusing into another liquid or solid (absorption).

Processes of nutrient removal

Chemical

- Transformations of nutrient forms
- chemical precipitation
  - solid compound is formed out of a liquid through a chemical reaction

Biological

- uptake (or assimilation)
  - by plants, algae, and bacteria and transformation processes conducted by microbes.

Nitrogen Pollution

- Excessive algae
  - Hypoxia
- Decreased water clarity
  - Loss of native plant diversity
  - Loss of native fauna
  - Warmer water = less oxygen
- Lost recreational value

Sources

At a rate of 1lb of nitrogen per acre, 630,000 lbs of N are spread in Greenwich per application

Dog waste: 16,000 families X 1.6 dog avg. =
25,000 lbs of poop per day

Phosphorous Pollution

- More of an issue with fresh water systems
- Unhealthy freshwater negatively impacts salt water
- Same type of damage as nitrogen in salt water

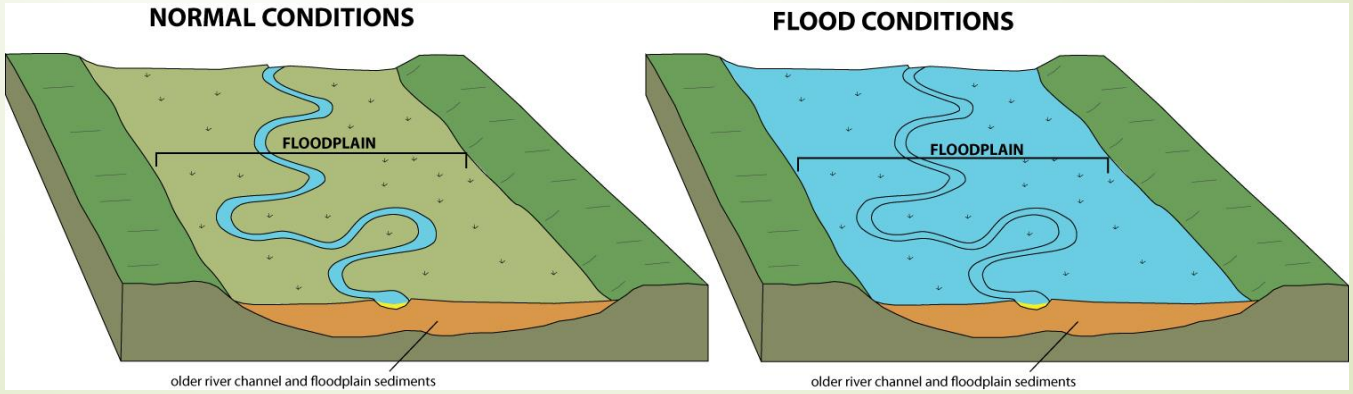
Sources

- At a rate of .25 lb of phosphorous per acre, 126,000 lbs of P are spread in Greenwich per application
- Wastewater
- Detergents

Greenwich FreePress

Benefits of Conserving Wetlands and Watercourses

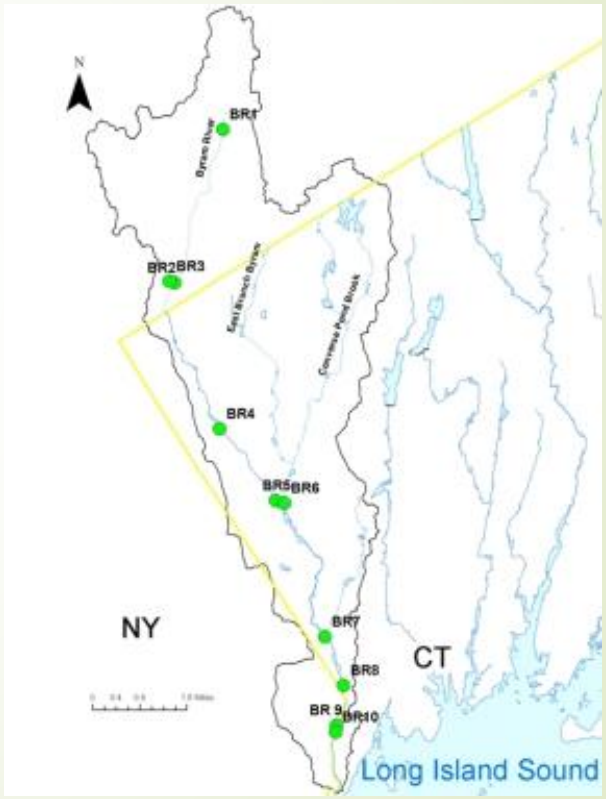
- Protect Long Island Sound from flood damage
  - Flood Storage
  - Scour
  - Sedimentation
  - Nutrient pollution



- Inland Wetlands can be overtaxed
- Regulations help weigh developmental impacts against a wetland's ability to serve communal functions
- Wetland protection is a science. We are not all scientists, so we may not know what the right decision is.
- The decisions of one has the potential to affects others.

How do regulations help?

Regulation is not enough



Do your part…

- Each property has to stand on its own
  - Degradation of Long Island Sound occurs by an accumulation of individual acts
  - Likewise, individual protections have cumulative benefits
  - The IWWA is limited to protecting wetlands one property or project at a time
- Create social motivation
  - Set an example
  - Reward smaller lawns, freedom lawns
  - Profile beautiful lawn alternatives, rain gardens, etc. in garden tours

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