PEP Talk

The Newsletter of the Peconic Estuary Program

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Ecological Impacts of Invasive Species

It isn't surprising that the dreaded snakehead fish was found in a pond in Queens last summer. After all, NYC police and park rangers have had to deal with tigers and alligators in apartments, and pythons taken out for a walk in Central Park. We instinctively fear snakes and tigers, but don't react similarly to the threat of introduced species, such as the green crab, Asian long-horned beetle, mile-a-minute vine and water chestnut.

Phragmites australis, or common reed - the poster child of invasives in the Peconics.
Photo by Rick Balla, USEPA

Scientists estimate that of the thousands of new species introduced globally, as many as 15% will become invasive. On their home turf, these plants and animals are kept in check by natural controls, such as predators, parasites and diseases. But when introduced into a new landscape, the consequences can be devastating. Unchecked, some invasive species can quickly spread, crowding out native species and sometimes changing fundamental ecosystem processes, such as nutrient cycling, soil chemistry, hydrology, frequency of wildfires, vegetation structure, and natural succession. The cost to our economy is more than a billion dollars annually.

Invasive, non-native species are a major cause or contributing factor in the decline of 49% of the U.S. species federally listed as threatened or endangered (57% of listed plants). Invasive species are second only to outright habitat destruction as the biggest threat to the ecological health of our forests, grasslands and

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Have a Habitattitude™!

Invasive species are an emerging problem in the Peconic Estuary. They travel via many pathways to arrive in our waters and on our landscape. Once established, they can wreak havoc on the native ecosystems that make the Peconics so special.

One of the tricky things about controlling invasive species is determining how they were first introduced. Many times invasive species are introduced by pet owners who release their pets into the wild or dump the contents of their aquariums into ponds and streams. *Cabomba*, a particularly nasty invasive and a popular aquarium plant, was introduced in this way.

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What's Inside?

A Modern Day Trojan Horse

The showy, purple-spiked flowers of purple loosestrife (*Lythrum salicaria*) conceal its true menacing nature. Found in all states but Florida, purple loosestrife continues to claim victory over our nation's native wetland plants. Wetlands choked by this ornamental include freshwater meadows, tidal and non-tidal marshes, pond edges, river and stream banks, and ditches. Stands of this plant can grow to thousands of acres in size. Purple loosestrife is just starting to colonize Long Island – there is still time for us to restore and protect our natural areas.

Purple loosestrife is able to outcompete and replace native wetland plants, ruining needed habitat for waterfowl, mink, muskrats, amphibians, and other species. This plant likely negatively affects our native fauna in other ways too - scientists recently

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This spring, the Peconic Estuary Program (PEP) is partnering with Habitattitude$_{TM}$ and the Long Island Sound Study to address this invasive species vector. We have developed a placard for display in all Suffolk County pet stores. The purpose of the placard is to educate pet owners about the repercussions of releasing non-native plants and animals into the wild and provide guidance on what to do with unwanted plants and animals.

Pet owners should not dump their plants or pets because it can harm the pets or plants themselves, cause serious harm to native plants and animals, and is illegal in most cases. There are many alternatives to disposing of plants and animals in this way. They can be returned to a local pet shop; donated to a school, museum, public aquarium, nursing home, hospital, or other institution; plants can be sealed in plastic bags and disposed of as trash; and a local veterinarian can provide guidelines on humane methods of disposal.

Habitattitude$_{TM}$ is a national initiative developed by the federal Aquatic Nuisance Species Task Force. The Pet Industry Joint Advisory Council, U.S. Fish and Wildlife Service, and NOAA National Sea Grant College Program spearheaded the partnership, which now includes the PEP. Habitattitude$_{TM}$ is different from other invasive species initiatives in that it has the support of both the pet and aquarium trade and the nursery and landscape industry. The campaign focuses primarily on education, a crucial step in preventing the expansion of invasive species.

The PEP is also developing an invasive species section of our website. The pages provide an overview of invasive species and how they affect the Peconic system, information on what the PEP is doing to reduce the threat posed by invasives, and individual pages describing several key alien species. The site is still under construction, so check www.peconicestuary.org/Invasives.html regularly for the latest content.

~Elisha Gibson, Long Island University

PEP Talk is published by the Peconic Estuary Program (PEP), a partnership of governments, environmental groups, businesses, industries, academic institutions, and citizens. The PEP's mission is to protect and restore the Peconic Estuary system. Learn more at www.peconicestuary.org.

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waterways.

About half of the 3,470 introduced, non-native plants in the U.S. were brought here to beautify our yards and gardens; the other half were brought for other purposes or were accidental introductions. Of these introduced non-native species, about 430 (12%) have become invasive wildland "weeds" in the U.S. In New York, about 35% of plant species are non-native; however, only about 30-50 (3-5%) of these have invaded native ecosystems.

These figures are for terrestrial and freshwater systems. No one knows how many coastal and marine species have been moved around the world by humans, primarily through ballast water discharge and aquaculture, or how many of those have become invasive. In San Francisco Bay about 80% of the species are thought to be non-native. Some scientists think most of the encrusting species in Long Island's estuarine waters are non-native. Zebra mussels and Asian shore crabs are well known on the Atlantic coast, but newer invaders include sea squirts and lionfish. Marine scientists are learning a lot about marine ecosystem dynamics by studying interactions of these invaders. Perhaps this knowledge will lead to strategies to address ecosystem impacts.

Invasive species have gotten more attention in New York over the last few years. For example, Weed Management Areas have been established on Long Island and in the Adirondacks, with more forming. The New York State Invasive Species Task Force was established in 2003, and their final report went to Governor Pataki last fall. Results are likely to be increased attention, staffing, and funding available for integrated approaches to invasive species management in New York.

Prevention and early detection/ eradication are the most effective strategies for dealing with invasive species in all ecosystems. In terrestrial systems there are some easy things individuals can do; see the box on page 4.

~Marilyn Jordan, Ph.D.,
The Nature Conservancy

To volunteer to help the LI Weed Management Area control invasive species, or to subscribe to the online volunteer newsletter, contact Stacey Goldyn at (631)367-3384, ext 131 or sgoldyn@tnc.org. To learn more about coastal conservation, action, and volunteerism, go to www.linature.org.

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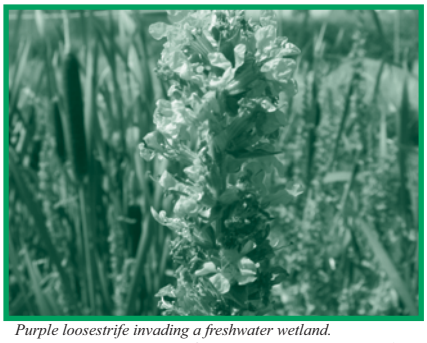
found that purple loosestrife exudes chemicals that are toxic to American toad tadpoles.

Twenty states have banned the sale and purchase of purple loosestrife. Unfortunately, this plant remains a popular perennial for sale at Long Island nurseries. Purple loosestrife blooms in mid-summer, is long-lived, tolerates drought, and adapts to all kinds of conditions.



Purple loosestrife invading a freshwater wetland.
Gary A. Monroe @ USDA-NRCS PLANTS Database

Avoiding the purchase and planting of purple loosestrife is the best step to staving off potential invasions of this plant. Small stands of purple loosestrife can be eradicated by uprooting the plant and ensuring the removal of all vegetative parts. Biologists report that large stands are extremely difficult to eradicate.

Even purple loosestrife touted as 'infertile' should not be planted since it can spread through underground stems at a reported rate of one foot per year. Amazingly, a single fertile plant can produce more than 2.5 million seeds a year. Under the right conditions, most of these seeds can germinate in three days.

Help protect the Peconics by being on the lookout for this threat!!

~Laura Bavaro
Suffolk County Dept of Health Services

Help Us Stop the Spread of Alien Invasives!

1. Verify that the plants you are buying for your yard or garden are not invasive (see www.ipcnys.org/sections/resources/plant_lists.htm), and replace invasive plants in your garden with non-invasive alternatives (see www.caes.state.ct.us/SpecialFeatures/NativeAlternatives.pdf).
2. When boating, clean your boat thoroughly before transporting it to a different body of water.
3. Clean your boots before you hike in a new area to get rid of hitchhiking weed seeds and pathogens.
4. Don't "pack a pest" when traveling—fruits and vegetables, plants, insects, and animals can carry pests or become invasive themselves.
5. Don't release aquarium fish and plants, live bait, or other exotic animals into the wild.
6. Volunteer at your local park, refuge, or other wildlife area to help remove invasive species. Help educate others about the threat!
7. Land managers should clean mowers and earth moving equipment between projects, and not move compost, soil, gravel and mulch unless they are weed free.

Aquatic Aliens Among Us

Can you spot the alien aquatic plants lurking among us? Many abundant, yet non-native and invasive, plants have been here for decades. They are so much a part of the Peconic ecosystem that they are often mistaken for native species.

The seaweed, green fleece (*Codium fragile*), often called Dead Man's Fingers due to its branched, cylindrical filaments that extend out from the core, is a prime example. It is widespread in the saltwater portions of the estuary and a common sight in beach wracklines. *Codium*'s other common name, Sputnik grass, is based on a fanciful cold war era story that its first sighting in 1957 was somehow connected to the launching of the world's first satellite, Sputnik, by the Soviet Union. The more likely (though less colorful) explanation is that it was introduced to the New England area from Japan via transport on ship hulls.

Ludwigia peploides in bloom on the Peconic River.
Photo by Marilyn Jordan, The Nature Conservancy

Fanwort, or *Cabomba caroliniana*, is another well-established invasive. Though it achieved infamy last summer due to its dense infestation in local ponds, *Cabomba* has been one of the dominant aquatic plants in the Peconic River for decades. A popular aquarium plant, it most likely gained access to the freshwater portions of the estuary by aquarium dumping. While lakeshore residents, boaters and fishermen complain that it interferes with boating and makes fishing almost impossible, the plant does provide beneficial habitat for fish and other aquatic species.

Ludwigia peploides, commonly referred to as water primrose, is a new invasive on the Peconic scene. Staff from The Nature Conservancy and NYSDEC first identified it in the Peconic River in 2003. Prospect Park in Brooklyn is the only other area in the region where it has been spotted. Native to South America, it was likely introduced to the Peconic River from a water garden. Unlike *Cabomba*, *Ludwigia* is poor habitat for fish, and because its leaves are above the water surface, it shades out submerged vegetation below.

The PEP has a proposal pending to hand-pull the expanding *Ludwigia* beds on the Peconic River to prevent further spread and eventually eradicate the plant entirely. If our project is approved, we will host the first removal event in June 2006. **To volunteer (lunch will be provided!), call (631) 852-5750 or e-mail info@peconicestuary.org.**

~Shana Miller, NY Sea Grant

Estuarine Explorers

"Spread the word, not the weeds."
~Unknown

As you begin your spring gardening and lawn maintenance, visit www.peconicestuary.org/WhatUCanDo.html for the latest guidance on how to create a bay-friendly yard.

1st Ever PEP Photo Contest!

Calling all shutterbugs - we're looking for photos that capture the Peconic's scenic beauty, economic and recreational opportunities, as well as evidence of human impacts. The grand prize winner will receive a high-quality PEP button-down shirt.

Submission deadline: May 1, 2006

See www.peconicestuary.org/PhotoContest.html or call 631-852-5750 for more details.

Peconic Pals

The Peconic's Least Wanted

Search up, down, sideways, and backwards for some of the Peconic Estuary's most infamous invaders.

R E D F H S I F N O I L Q E U O D O Z T N D P R
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A V E L T E E B D E N R O H G N O L N A I S A E
B H M Y J C E E U R O P E A N S T A R L I N G G

Word list:
Asian longhorned beetle, Asian shore crab, common periwinkle, common reed, dead man's fingers, European starling, fanwort, garlic mustard, green crab, Japanese barberry, Japanese knotweed, lionfish, mute swan, Norway maple, Norway rat, orange sheath tunicate, orange-striped sea anemone, purple loosestrife, red-eared slider, tree of heaven, water primrose

Go to www.peconicestuary.org/Kids.html for the puzzle solution.

Species Snapshot

Canada Goose (*Branta canadensis*)

Photo by Rick Balla, USEPA

Canada geese are traditionally recognized as the symbol of spring when they fly in their V-formations toward the north. However, in recent years, increased numbers of Canada geese have been seen on Long Island all year long. These geese are referred to as "resident" geese, not to be confused with "migrant" geese that are only seen in the fall, winter, and spring.

The Canada goose is the most widely distributed goose in North America. There are 11 recognized subspecies. A subspecies occurs when a species is made up of distinct, geographically separate groups, which are not yet distinct enough to constitute a separate species. Most of the 11 subspecies are only encountered in the lower 48 states during a portion of the year and are referred to as "migrant geese." These geese migrate to wintering grounds in the fall, and in the spring, these geese fly to breeding grounds in the arctic and sub-arctic regions of Canada and Alaska, where they nest and rear their young.

Some subspecies, however, reside in the U.S. year-round. "Resident" Canada geese are defined as those that nest within the lower 48 states during the months of March-June, and reside within the lower 48 states from at least April-August. Resident geese may make short migrations to more favorable conditions in the winter, but the distances traveled are much shorter than those of migrant geese.

There are several reasons why we have seen an increase in resident geese in recent years. Resident geese live in temperate climates where breeding habitat conditions remain relatively stable. They are not exposed to the harsh and fluctuating conditions that arctic-nesting geese must contend with. Humans create favorable habitat for geese, such as lush lawns in close proximity to water bodies, which provide ample food and protection. Geese are long-lived, and mortality is low because there are few natural predators. With few geese dying, it is easy to see why resident goose populations are increasing on Long Island.

Did you know? An adult Canada goose drops ~2 pounds of fecal matter daily, resulting in 10 million fecal coliform bacteria/day! Please don't feed the geese!

~Robin Holevinski, NYS Department of Environmental Conservation

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