



## **Testimony Regarding Hearing on Bills to Increase Biodiversity in New York City Before the New York City Council Committee on Environmental Protection**

*Regarding Int. No. 75, Int. No. 398, Int. No. 399, Preconsidered Int. T2010-1920*

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*Statement of Marielle Anzelone*

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Mr. Chairman, distinguished members of the committee, and guests: My name is Marielle Anzelone, and I am an Urban Ecologist and the Executive Director of NYC Wildflower Week, a nonprofit advocacy organization that connects New Yorkers to the nature in their backyards through free cultural programming throughout the five boroughs. I thank the members of the Committee for this opportunity to testify.

From April 2001 to November 2007 I was the Botanist for the City of New York Department of Parks & Recreation, Natural Resources Group. My job was to conserve, manage and restore the native flora of the five boroughs. Most people are surprised that New York City has nature at all. Yet towering forests, expansive marshes and grassy meadows cover nearly one-eighth of the city, making it the greenest in North America.

Much of this greenery is native plants. A New York City native plant is any plant that occurs naturally in our region without having been introduced from elsewhere by humans. Over thousands of years, these native plants have adapted to the climate, soils, and environmental conditions of our area and developed symbiotic relationships with native insects, birds, and other animals. New York City native plants include grasses, ferns, perennial herbs, trees, shrubs, and vines, and are the building blocks of our biological diversity and the cornerstone of our natural ecosystems—our forests, grasslands and meadows.

Native plants are critical to human health and wellbeing. They provide us with fresh air to breathe, purify the water we drink, and enhance the quality of our lives with their physical beauty. They are also responsible for stabilizing the soil, controlling floodwaters, and providing food and habitat for countless bees, butterflies, birds, and other creatures, which in turn, provide us with vital services, such as the pollination of our food crops.

During my tenure at Parks, my work and that of my colleagues charted a disturbing, but unsurprising trend - the local extinction of our wild flora. Of 1,357 native plants ever recorded in the New York City, only 778 species remain. In recent decades, Staten Island, the most bucolic borough, has lost more than 30% of its indigenous vegetation, including such botanical treasures as nodding trillium and yellow lady's slipper orchid.

Most people tend to think that dramatic, isolated incidents are responsible for loss of biodiversity. Flashy events like oil spills or forest fires garner headlines. While these are certainly detrimental, the loss of biodiversity in the New York City area is largely due to the ongoing destruction and degradation of habitat. Our natural areas are shrinking and deteriorating. This pattern of habitat loss is alarming since it undermines efforts to conserve what remains.

The biggest threat to our native plants is habitat destruction due to development. Given that so little land remains unbuilt in New York City, no open space is safe, not uplands, not wetlands. Our forests of oak and hickory are traded for box stores and parking lots. Public works projects are placed in parklands. Our forests and fields are only valued when "improved" through human activity and the original greenery is gone.

After destruction of habitat, the biggest threat to our local flora is invasive species. The source of these problematic plants is usually conventional gardens. Over 80% of invasive woody plants have originated in the horticulture industry.

Every plant species is native to somewhere. Introduced or non-native plants hail from other states, regions, or countries. This exotic flora was moved to new areas by people for food or ornamentation or by accident, as stowaways on commercial ships or packing materials. Over the past nearly 400 years, thousands of plant species have been introduced to the New York area. Most live peacefully with the indigenous flora that was already here.

Unfortunately, a small but significant number of these introduced species are out of control. They travel from where they were planted and run rampant through our parks, damaging local forests, meadows and wetlands. These invasives smother our native plants, shading them from the sun and effectively starving them to death. Some invasives are so closely related to our indigenous flora that their pollens mix, producing hybrids that overwhelm the local gene pool. This alters the plant's biology, affecting floral shape, color, or blooming time. Such dramatic change is potentially devastating for the wildlife that depends on native species. Thus invasive plants disrupt biological relationships and degrade natural areas.

Over a 50-year period, Pelham Bay Park, the largest natural area in the New York City Park system, lost 2.8 native plant species every year, while it gained 4.9 new exotics annually. In this context, plantings on private and public properties have ecological consequences for the greater landscape.

The main focus of conventional landscapes is their ornamental value. Filled with sterile cultivars and often maintained with heavy inputs of chemical pesticide and fertilizer, these gardens can be barren wastelands for native insects, birds, and other animals. In addition, many native insects are plant specialists, meaning they evolved over many generations to feed on specific native plants—so they simply can't derive any sustenance from non-native garden plants. These insects in turn, are food for our birds. Birding in NYC is burgeoning business.

A perfectly manicured non-native turfgrass lawn is the dominant aesthetic in the U.S. But it's also the perfect example of what's wrong with the conventional garden. Turf grass has no habitat value for wildlife, it's high maintenance, it pollutes the air and water. Water is also lost. There is minimal groundwater recharge with lawns – they create almost as much runoff as pavement. Lawns are thirsty. Clean drinking water is used to slake this thirst. We pay for the infrastructure to receive the water, clean the water, then pay again when it goes down the drain.

In contrast, a wildflower planting can provide

- Greater habitat value: native plants support more abundant and diverse wildlife
- Lower maintenance: mowing is required only 1 to 2 times a year.
- Reduced pollution: no fertilizer, herbicides, or pesticides needed.
- Water conservation: once established, native meadow plants are drought tolerant.
- Increased groundwater recharge: wildflower meadows absorb much more storm water runoff than lawn and allow it infiltrate the soil. These dense, diversified plants with varied root depths slow the water and allow it to soak in.

One of the best ways to address these problems is to encourage the use of native plants in public landscapes. In 2006 I designed and planted the Native Plant Display Garden in Union Square Park in Manhattan. Inspired by regional plant communities, it features over 200 species of ferns, wildflowers, shrubs, and grasses that are native to the New York City area. At East 15th Street and Union Square West, hundreds of people walk by the garden every day. It is a model public garden, inspiring New Yorkers to grow wildflowers at home – even a in a window box.

It demonstrates sustainable design in a public park. The garden also provides a unique opportunity for New Yorkers to meet their foliar neighbors, a reminder of their connection to the natural heritage of the Big Apple.

These kinds of wild, sustainable landscapes are important to have, especially in parts of the city where forests are in short supply. Nature enhances the quality of New Yorkers' lives and makes cities livable. A simple walk in the woods lowers stress, boosts immunity, and heightens creativity. It appears to even help fight some cancers. The benefit of being in nature is so great that land conservation can now be viewed as a public health strategy.

I hope that these bills might be the first step towards New York City taking a more active role in recognizing and encouraging the retention of its native biodiversity. In other places around the world, across the country and in the region there are already initiatives that recognize and protect local biodiversity. The United Nations has designated 2010 “International Year of Biodiversity” and held a global summit in Japan in October. The Obama administration launched “America’s Great Outdoors” to reconnect Americans to nature. The Congressional “No Child Left Inside” Act would make environmental education a bigger priority. Meanwhile neighboring Suffolk County requires property owners to keep part of their land wild. New Jersey calculated the worth of its nature at \$18 billion per year, equal to the state’s construction industry. Even a recent McKinsey global survey notes that biodiversity is the next environmental issue on the corporate agenda. In a time of global biodiversity awareness, New York City has to do more. These bills are an important first step.

Thank you for this opportunity to testify.