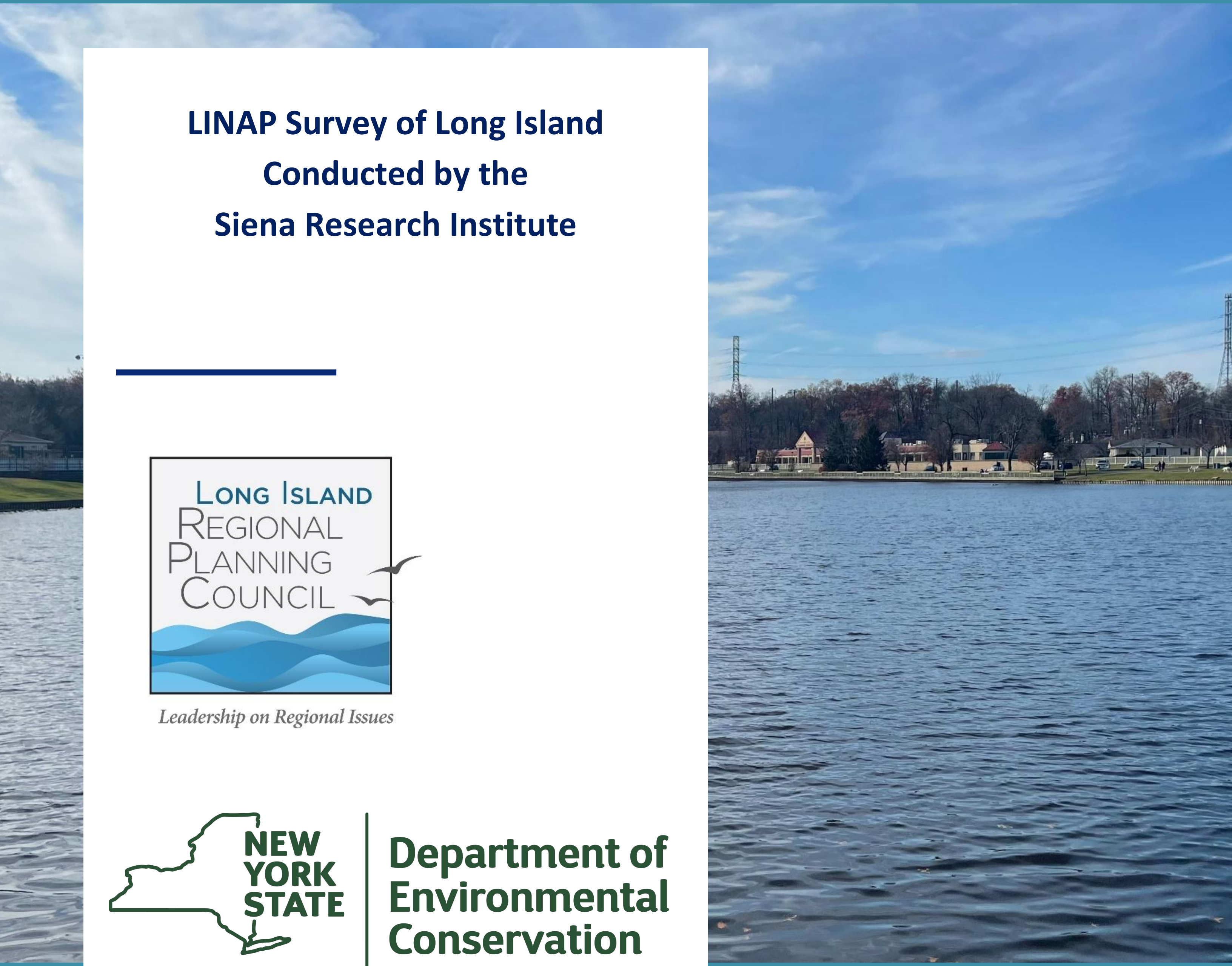

LINAP Survey of Long Island Conducted by the Siena Research Institute

Long Island Regional Planning Council

Leadership on Regional Issues

New York State | Department of Environmental Conservation

2025

SIENA RESEARCH INSTITUTE AT SIENA UNIVERSITY

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Executive Summary

In July 2025, the Siena Research Institute (SRI), contracted with the Long Island Regional Planning Council (LIRPC), to conduct a comprehensive survey of 1,002 homeowners on Long Island to provide information needed for the Long Island Nitrogen Action Plan (LINAP). The LINAP is an initiative to reduce nitrogen in Long Island's surface and ground water that is implemented through collaborative partnerships, including New York State Department of Environmental Conservation (NYSDEC), LIRPC, Suffolk and Nassau counties, local governments, and interested stakeholders. The study revealed a disconnect between the environmental concerns of Long Island residents and their lawn care practices. Nearly nine in ten Long Islanders believe it is important to maintain the attractiveness of their lawn, a majority of residents (65%) fertilize their lawns, and three in four residents (76%) are concerned about the potential environmental harm from improper fertilizer application. This finding highlights an opportunity for environmental stewardship on Long Island, where the strong aesthetic value placed on attractive lawns could be paired with concern for the region's environmental health to encourage changes in lawn care and fertilization practices.

The survey found that this high level of concern is not translating into protective action, revealing gaps in both behavior and specific knowledge. While residents express general concern about the environmental impacts of lawn fertilization, there are gaps in understanding of the environmental impacts of lawn fertilization. Although a majority (58%) agree that fertilizer is a leading source of nitrogen contamination of Long Island waters, 31% of residents are unsure or have no opinion on the matter. This knowledge gap is directly reflected in their actions, as fewer than a quarter of residents have adopted five or more key mitigating behaviors that protect the environment. Practices such as testing soil quality (19%) or checking with a reliable source like a state agency to determine the correct amount of fertilizer to use (12%) are uncommon among Long Island homeowners.

Based on these findings, the primary recommendation is for the LIRPC and its partners to develop and launch a multi-pronged public awareness campaign. The campaign's strategy should be to bridge the gap between residents' environmental concerns and their actions by providing clear, accessible, and actionable information. Key strategic actions should include developing a targeted educational message that addresses specific knowledge gaps and promotes simple, high-impact behaviors that do not compromise lawn aesthetics. The campaign should engage critical information channels like home improvement centers and professional lawn care companies, as these are the primary points where residents make key purchasing and application decisions. Fostering community partnerships with local high schools can also serve to amplify the message and engage the next generation of homeowners. By providing Long Islanders with the knowledge and tools to act on their existing environmental concerns, it is possible to foster lawn care practices that both beautify their properties and protect Long Island's vital natural resources for years to come.

This survey was funded with New York State Environmental Protection Funds. The information and opinions presented in this document do not necessarily represent the views and opinions of NYSDEC.

Introduction

Various scientific studies point to nitrogen as a leading cause of water quality deterioration across Long Island. Excess nitrogen from sources like wastewater treatment plants and residential septic systems and fertilizer and stormwater runoff impact groundwater and surface waters. This pollution can contribute to the formation of algal blooms which can lead to low oxygen conditions, fish kills, and degrade wetlands and marine habitats. The Long Island Nitrogen Action Plan (LINAP), a multiyear initiative implemented by the New York State Department of Environmental Conservation (NYSDEC), Long Island Regional Planning Council (LIRPC), Nassau and Suffolk counties, and in partnership with other interested stakeholders was created to reduce nitrogen levels through implementation of technical, management, and policy actions.

A key component of this effort involves encouraging homeowners to adopt practices that minimize nitrogen pollution. While individual actions like upgrading septic systems and reducing vehicle use are important, responsible lawn fertilization is a behavior that a large portion of the population can directly control. However, for a public awareness campaign to be effective, it must be based on a clear understanding of what residents know, believe, and do.

This report summarizes the results of a comprehensive survey of Long Island homeowners conducted by the Siena Research Institute. The study provides data on current frequency of lawn fertilization, public knowledge of environmental threats, rates of homeowner risk mitigation behaviors, and underlying attitudes toward lawn care and environmental protection. The report concludes with recommendations for a public awareness campaign designed to bridge the gap between concern and action, empowering Long Islanders to protect the water quality that is vital to the region's health and economy.

Research Design & Methodology

About the Data Collection Organization

The Siena Research Institute (SRI), a public opinion research institute based at Siena University in upstate New York, conducted this study. As a non-partisan organization, SRI has been recognized for its accuracy, notably being rated as one of America's most accurate pollsters by the ABC affiliate 538, formerly known as FiveThirtyEight.com. SRI is highly experienced in mixed-mode data collection, utilizing a variety of methods including live telephone interviews, web panel (email) surveys, and text-to-web surveys. The institute has also conducted studies via mail using Address-Based Sampling (ABS) and has facilitated qualitative research through in-depth interviews and focus groups. SRI is an active member of the American Association for Public Opinion Research (AAPOR) and a charter member of its Transparency Initiative, which underscores its commitment to providing detailed information on how its studies are conducted.

Research Design

This study was commissioned by the Long Island Regional Planning Council (LIRPC) to understand public opinion on its work facilitating the Long Island Nitrogen Action Plan (LINAP). The research objective was to identify the motivations and attitudes of homeowners towards nitrogen-based fertilizers and to understand the reasoning behind why homeowners choose to fertilize or not fertilize their lawns. The data collected can inform future public messaging and help devise effective communication strategies for residents.

To achieve these goals, SRI conducted a survey of a representative sample of homeowners across Long Island. The survey was designed to capture a range of choices people make about their lawn care and targeted three distinct groups: those who maintain their own lawns, those who hire a professional lawn care service, and those who do little to nothing. The research plan included analysis by county and other key demographic variables.

Methodology

Data Collection and Screening

Between July 9 and July 28, 2025, the Siena Research Institute (SRI) interviewed 1,002 Long Islanders for this study. To ensure the survey reached the correct audience, a series of screening questions were asked at the beginning of each interview. To participate, a respondent had to be 18 years of age or older, confirm they lived in either Nassau or Suffolk County, and affirm that they lived in a home with a grass lawn that they did not rent. This screening process ensured that the findings are based exclusively on the target population. Of the final 1,002 participants, 890 identified as homeowners, while the remaining 112 lived in their home through another non-rental arrangement.

Probabilistic Representative Sampling

This study is based on a probabilistic sample. This is a scientific standard that means every person in the target population—in this case, homeowners with lawns in Nassau and Suffolk counties—had a known and non-zero chance of being selected to participate. The universe of potential respondents was defined using metrics calculated by the U.S. Census.

Critically, participants were all selected randomly. They were not "cherry-picked" from a list, nor did they pre-register or volunteer for this study. Furthermore, no respondent received any financial or other incentive to participate. This methodology ensures that the sample is not self-selected and that the results are a reflection of the community as a whole, rather than the opinions of a narrow group.

Interviewing Process

This study used a mixed-mode approach to reach residents in the way most convenient for them. All interviews were conducted in English.

Live Telephone Interviews: The majority of interviews (761) were conducted by trained, live interviewers over the phone (both landline and cell). Calls were conducted Monday through Thursday between 1:00 PM and 9:00 PM Eastern. These interviews averaged 17 minutes in length.

Text-to-Web Surveys: To include residents who prefer taking surveys online, 241 respondents completed the survey online. These individuals were initially contacted via an MMS message sent at the beginning of the study period, which contained a secure link to the survey. This allowed message recipients to participate whenever it was most convenient for them. While the bulk of online completes came within 48 hours of the initial text, responses were collected throughout the field period. Despite including the same questions, the average length of online surveys was shorter than live interviewer surveys, averaging 10 minutes.

To maximize participation, if a person sent the survey link via text did not complete it, their phone number was placed in the queue to be called by a live interviewer. In some cases, this follow-up call prompted the individual to then complete the survey using the web link they had previously received.

Ensuring Data Quality Across Collection Methods

A challenge in survey research is "mode effects"—small, systematic differences in how people answer questions depending on whether they are speaking to a live interviewer or filling out a survey online. To minimize these effects and ensure the data is consistent and comparable, SRI implemented several quality controls. The survey was programmed to ensure question wording was identical or appropriately similar across both modes, and techniques such as question rotation (varying the order of questions) and response rotation (varying the order of answer choices) were used. These steps prevent bias and ensure that the method of data collection does not influence the results.

Weighting and Margin of Error

After data collection, the completed interviews were statistically weighted by age, county, race/ethnicity, and gender to align with the U.S. Census Bureau's 2023 American Community Survey (ACS) data for the Long Island homeowner population. This ensures the final sample is a true and accurate reflection of the region's population. Weighting adjusts for differences between the survey sample and the broader population, since no sample is ever a perfect mirror of the universe. To minimize the amount of weighting needed, SRI set demographic quotas during data collection so that the sample already closely resembles the community.

The margin of error is a statistical measure that indicates the range within which the true value for the entire population is likely to fall, given the results from a sample survey. It reflects the level of precision in the survey estimates and accounts for the possibility of random sampling error. While the margin of error decreases with larger sample sizes (and increases with smaller ones), weighting introduces a design effect that can raise the margin of error beyond what sample size alone would suggest. For this survey, the data has a margin of error of ±3.8 percentage points including the effects from weighting. Thus, if 50% of residents report holding a certain opinion, the true population value can be expected to fall between 46.2% and 53.8%.

Data and Results

For the purposes of this report, the following terms are used to define specific groups of respondents based on their lawn care practices: **Lawn Fertilizers** refers to all respondents who reported that they or a service fertilize their lawn**; Do-It-Yourself (DIYers)** is a subset of "Lawn Fertilizers" who apply fertilizer to their own lawn; and **Hired Lawncare Professional** is a subset of "Lawn Fertilizers" who pay a person or service to fertilize their lawn.

Prevalence and Characteristics of Fertilizer Use

In the survey, a majority of Long Islanders, 65%, report fertilizing their lawn. A higher proportion of respondents in Nassau County (67%) reported fertilizing their lawn compared to Suffolk County (63%). The data also indicates a positive correlation between household income and fertilization, with rates climbing from 50% among lower-income residents to 70% among higher-income residents (see Table 1). Furthermore, the presence of an underground irrigation system is a significant factor, as 75% of homes with such systems are fertilized, compared to only 48% of those without. Another factor showing slight differences in lawn fertilization is lawn size. Among Long Island residents with small lawns, 58% report fertilizing, compared with about two-thirds of those with medium or large lawns.

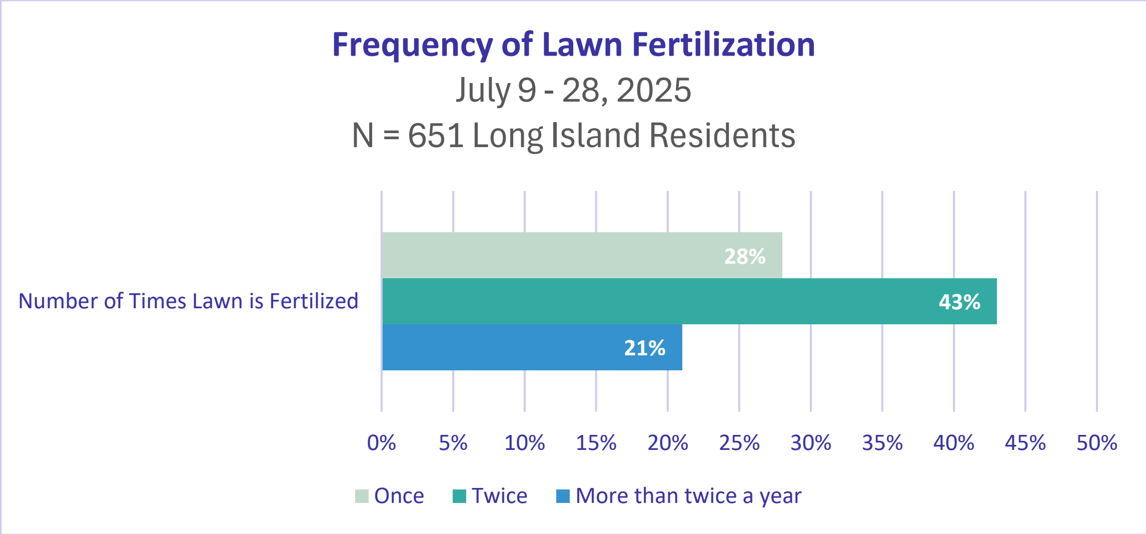
Table 1. Lawn Care Fertilization by Demographic Group

Lawn Fertilization	Long Island	Nassau County	Suffolk County	<$50K	$50K-$100K	$100K+
Yes	65%	67%	63%	50%	61%	70%
No	31%	28%	34%	43%	34%	27%
Don’t Know/Refused	4%	5%	3%	6%	5%	4%

Among residents who fertilize, the responsibility is nearly evenly split between those who perform the task themselves and those who pay for a professional lawncare service. Across all Long Island residents who fertilize their lawns, 54% hire a lawn care professional, while 45% handle fertilization themselves. Differences by county are notable: only 33% of Nassau County residents who fertilize their lawn are Do-It-Yourself (DIYers), compared with 57% in Suffolk County.

Residents who fertilize their lawns were asked how often they apply fertilizer—once, twice, or more than twice per year. Overall, 28% fertilize once annually, 43% fertilize twice, and 21% fertilize more than twice. Another 8% said they did not know. (see Figure 1)

Figure 1. Frequency of Lawn Fertilization



Fertilization frequency varies by lawn size and by whether residents do it themselves or hire a professional. Fertilizing twice a year is the most common practice for owners of both small and medium-sized lawns. Owners of small lawns most often fertilize twice annually (41%), followed closely by those who fertilize once (39%), while only 14% fertilize three or more times. Among medium-lawn owners, the preference for fertilizing twice a year is even stronger, with 45% doing so. However, owners of large lawns are the group most likely to fertilize more than twice a year (25%), a higher rate than those with smaller lawns. Despite this, a plurality of large-lawn owners also fertilizes twice a year (40%) or once a year (28%). Fertilization practices also differ by method: 33% of DIYers fertilize once per year, compared with 24% of those who hire a professional. Conversely, professional users are more likely to fertilize twice per year (45% vs. 41%), while DIYers show a slightly higher tendency to fertilize more than twice annually (23% vs. 19%). Income is also associated with fertilization frequency. Among the lowest-income group, 37% fertilize once, 25% twice, and 14% more than twice per year. In contrast, among the highest-income group, 27% fertilize once, 47% twice, and 22% more than twice annually.

Public Attitudes, Concerns, and Knowledge

Despite the widespread use of fertilizer, 76% of Long Islanders are either "very" (33%) or "somewhat" (43%) concerned that the improper application of lawn fertilizer can harm the environment. This high level of concern is consistent across all demographic categories. This sentiment is further reflected in the 70% of respondents who agree (38% strongly, 32% somewhat) that reducing the amount of fertilizer used on Long Island would improve water quality and cut back on harmful algal blooms.

While general concern is high, knowledge of specific issues and best practices appears less uniform. For instance, 58% of residents agree that fertilizer is a leading source of nitrogen contamination in local waters, yet a notable 31% report having no opinion or not knowing. Similarly, there are gaps in awareness regarding the economic and recreational impacts, with 52% of Long Islanders agreeing that fishermen are economically harmed and 45% agreeing that recreational areas can be rendered unsafe due to too much lawn fertilization. When these four statements of impact are considered together, only 24% of Long Islanders agree with all of them, suggesting an opportunity for targeted education. (see Table 2)

Table 2. Long Island Residents Attitudes to Lawn Fertilization

Statement	% Agree	% Disagree
Reducing the amount of fertilizer Long Islanders currently use would improve water quality and cut back on harmful algal blooms	70%	8%
Fertilizer is a leading source of nitrogen contamination of Long Island waters	58%	11%
LI fishermen are economically harmed due to the effects of over fertilization of lawns	52%	12%
In some cases, recreational areas can no longer be safely used due to the impact of using too much lawn fertilizer	45%	22%

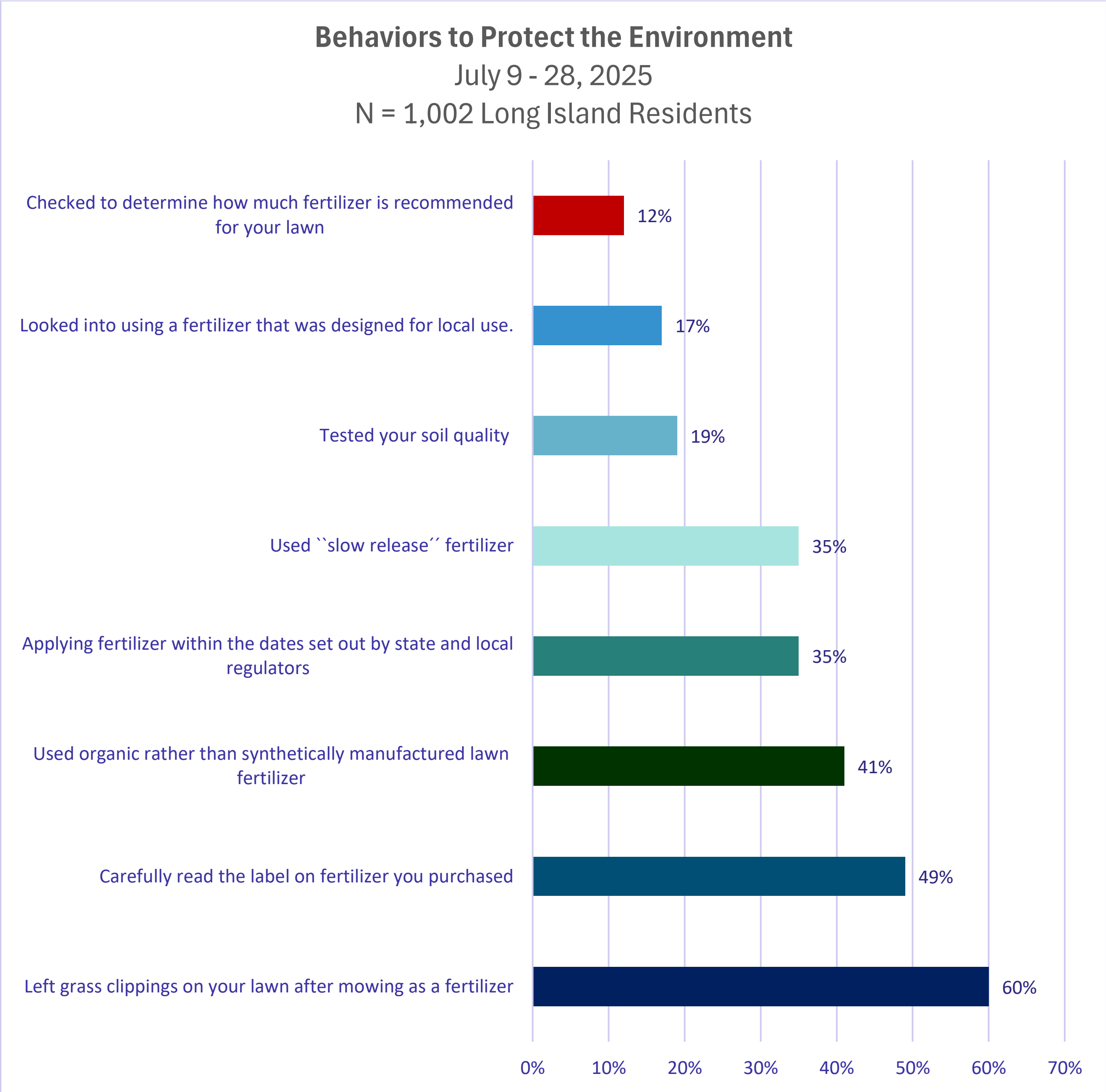
This gap between concern and knowledge is also evident in understanding application guidelines. While 63% of Long Island residents agree that fertilizer should be applied only in the spring and fall, 30% did not know or had no opinion. Among residents who fertilize their lawns, 70% agree that fertilizer should be applied in both spring and fall, while one-fourth (22%) report having no opinion. Among the Do-It-Yourself (DIYers) group, 18% were unable to say they agreed or disagreed with this seasonal best practice. Of those who hire a lawn care professional, 26% report having no opinion.

Despite the gaps in agreement and knowledge on lawn fertilization, a nearly universal sentiment shared among Long Islanders is the value of lawn aesthetics. Nine in ten, 91%, of Long Island residents agree that attractive lawns increase property values, and 85% state that having a well-maintained lawn is personally important to them. Among Long Islanders who fertilize their lawns, these attitudes are especially strong: 95% agree that attractive lawns increase property values, and 93% say having a well-maintained lawn is personally important to them.

Reported Behaviors and Protective Actions

The survey asked about ten specific behaviors residents could take to mitigate the environmental risks of fertilization. These questions were framed as yes/no, with the option to respond “don’t know” or skip the item. The activities ranged from relatively simple, low-cost actions such as carefully reading product labels or leaving grass clippings on the lawn, to more involved practices such as soil testing, using specialized fertilizers, or requesting information from lawn care providers. The most commonly adopted action, undertaken by 60% of Long Islanders, is leaving grass clippings on the lawn as a natural fertilizer (see Figure 2).

Figure 2. Frequency of Actions Taken to Protect the Environment from Fertilizers



Other actions are practiced by a minority of residents. Nearly half (49%) report carefully reading a fertilizer label, a rate higher among DIYers (74%) than among those who hire a lawn care professional (40%). Similarly, 41% of residents say they have used organic fertilizer (57% of DIYers vs. 35% of those who hire a professional). However, uncertainty is notable: 12% of DIYers and 26% of those who hire a professional say they do not know whether they have used organic fertilizer (see Table 3).

Table 3. Actions Performed by Long Islanders to Protect the Environment

Action	Long Island Residents	Do-It-Yourselfers (DIYers)	Hire Lawncare Professional
Carefully read the label on fertilizer you purchased	49%	74%	40%
Used organic rather than synthetically manufactured lawn fertilizer	41%	57%	35%
Used ``slow release´´ fertilizer	35%	58%	32%
Looked into using a fertilizer that was designed specifically for use on Long Island	17%	21%	17%

Use of "slow-release" products is even less common, with 35% of residents reporting use (58% of DIYers vs. 32% of those who hire a professional). Again, many are unsure—20% of DIYers and 31% of those who hire a professional do not know if they have used slow-release fertilizer products. Only 24% of residents who hire a lawn care professional reported asking the company to explain how they protect against the harmful effects of the fertilizer they apply. Of Long Island residents who get information from garden centers or home improvement stores, only 32% say they asked an employee how to protect against the harmful effects of applying fertilizer.

Another potential way to reduce environmental impact is by using products specifically designed for use on Long Island. Across all residents, just 17% say they have sought out such products. This behavior varies geographically, with 14% of Nassau residents and 21% of Suffolk residents reporting doing so. Age differences are also pronounced: only 6% of residents aged 18–34 have looked into these products, compared with 22% of those 55 and older.

Fewer residents have taken more proactive steps. Only 19% have tested their soil quality to determine if fertilizer is necessary (26% of DIYers), and just 12% have consulted a reliable source like a state agency or academic entity for recommendations on application amounts (18% of DIYers). Among those who hire a professional lawn care service, only 24% have asked their lawn care company to explain its methods for environmental protection.

When these behaviors are considered together, only 24% of all Long Islanders report engaging in at least five of the ten protective actions. Among residents who fertilize their lawns, this share rises slightly to 29%. This figure rises to 38% for DIYers, but falls to 22% for residents who use a hired lawn care professional. Two-thirds of Long Islanders (68%) concluded that residents are not doing enough to protect the environment from the potential harms of lawn fertilizer, while only 16% believe current efforts are sufficient.

Information Sources on Lawncare and Fertilization

The survey sought to measure where residents get information regarding lawn care and fertilizer use. Long Island homeowners were asked if they get information from a series of six sources. The findings reveal distinct patterns of information-seeking behavior, particularly when comparing residents who manage their own lawn care ("Do-It-Yourselfers" or DIYers) with those who hire a professional service (see Table 4).

Table 4. Information Sources about Lawn Care and Fertilizer Use Among Long Islanders

Source	Long Island Residents	Do-It-Yourselfers (DIYers)	Hire Lawncare Professional
Lawn Care Professionals	43%	26%	70%
Garden Center/Home Improvement	33%	48%	29%
Friends or neighbors	31%	39%	30%
Online	26%	41%	19%
Local Government or Conservation Groups	16%	13%	15%
Social media	14%	18%	12%

For Long Islanders, the most frequently cited source of information is lawn care professionals (43%) followed by garden centers or home improvement stores (33%). Seventy-percent of residents who use a lawn care company say that get information on lawn care and fertilizer use by lawn care professionals. In stark contrast, DIYers consult a more varied range of resources. Their most common source of information is garden centers or home improvement stores, relied upon by 48%. DIYers are also more likely than those who hire professionals to seek information from online websites or blogs (41% vs. 19%) and to consult with friends or neighbors (39% vs. 30%).

Local government or conservation groups are consulted by only 16% of the Long Islanders. Even less frequently used is social media, which is a source of information for only 14% of residents overall (18% of DIYers and 12% of those who hire professionals). These findings suggest that while organizations central to the LINAP effort may utilize these channels, their direct messaging on lawn care is not currently reaching the majority of homeowners. This presents an opportunity for targeted outreach through the more popular channels that residents already trust and use.

Public Support for Nitrogen Reduction Initiatives

A key finding from the survey is the gap between public awareness of specific programs and public support for their underlying goals. While the Long Island Nitrogen Action Plan (LINAP) is the central initiative addressing nitrogen pollution, brand recognition is extremely low. Only 6% of Long Islanders report being familiar with LINAP, while 81% state they are not familiar with it at all and 11% say they are not very familiar with LINAP. Awareness is slightly higher among those who fertilize their own lawns (8% familiar) compared to those who hire a professional service (2% familiar).

Despite this lack of name recognition, there is broad support for the program's mission. When its work was described, 62% of Long Island residents stated they support LINAP's efforts to reduce nitrogen pollution in the region's water. Only 7% oppose the work, while a portion is neutral (17%) or undecided (15%). This strong base of support is consistent across Nassau County (61%), Suffolk County (64%), "Do-It-Yourselfers" (61%), and those who hire lawn care professionals (60%).

Furthermore, this general support extends to potential policy measures. Nearly seven in ten residents (69%) would support local restrictions on fertilizer use, such as limiting the amount that can be applied at one time. Support for such measures is higher in Nassau County (72%) than in Suffolk County (67%). Residents who hire lawn care professionals are more likely to support these restrictions (74%) than those who apply fertilizer themselves (63%).

This desire for action is underscored by a widespread belief that current efforts are insufficient. Two-thirds of Long Islanders, 68%, say that not enough is being done to protect the environment and local drinking water from the potential harms of lawn fertilizer use. Only 16% believe current efforts are adequate. This sentiment is particularly strong among the youngest residents, 79% of whom feel not enough is being done, compared to 67% of the oldest residents.

Residents express a strong willingness to be part of the solution. An overwhelming 82% of residents report they are likely to take personal steps to ensure their fertilizer use does not contribute to environmental harm, with 47% saying they are "very likely."

This commitment is high among both DIYers (89%) and those who hire professionals (85%), indicating a nearly universal willingness to adopt more environmentally friendly practices if provided with clear guidance.

Understanding Key Groups: Cluster Analysis

To gain a deeper, more actionable understanding of public opinion, a statistical technique called cluster analysis was employed. Instead of looking at the population as a whole, this method identifies distinct subgroups of residents who share similar patterns of attitudes and beliefs about fertilizer's environmental impact. This approach is valuable because it moves beyond simple averages and reveals that "the public" is actually composed of several mindsets. Understanding these distinct groups is essential for developing targeted and effective public awareness messaging.

The analysis was based on responses to four key questions regarding fertilizer's impact on Long Island's waters, water quality, fishermen, and recreational areas (see Table 5). This process revealed three primary clusters within the Long Island population who are labeled as Ready to Act (group 1), Need More Information (group 2), and Prioritizes Other Concerns (group 3).

Group 1: Ready to Act (41% of Residents)

This group represents the most informed and engaged segment of the population. They tend to agree with all four statements about the potential negative impacts of fertilizer. Their awareness translates directly into a high level of concern, with 94% stating they are either "very" (57%) or "somewhat" (37%) concerned that improper fertilizer application can impact the environment. This group is highly skeptical of the idea that "worrying about any dangers...is a waste of time," with 83% disagreeing. They are also the least likely to place their trust in professional lawn care companies to be responsible.

Group 2: Need More Information (46% of Residents)

This is the largest segment of Long Islanders. While they tend to agree (59%) that reducing fertilizer use would improve water quality, they are largely unsure about the other specific impacts, expressing indecision at rates between 49-61%. Their level of concern is moderate, with 73% being "very" (19%) or "somewhat" (54%) concerned. This group holds middle-of-the-road views on most related issues, suggesting they are open to information but have not yet formed strong opinions.

Group 3: Prioritizes Other Concerns (13% of Residents)

This group is the smallest and most skeptical. They are the most likely to disagree with statements about the negative environmental impacts of fertilizer. Correspondingly, they express the lowest level of concern, with only 43% being "very" (14%) or "somewhat" (29%) concerned. This group is the most likely to agree that "worrying about any dangers...is a waste of time" (28% agree vs. 11% in Group 1). They also hold the strongest beliefs in the positive environmental benefits of lawns (e.g., producing oxygen and reducing CO_2) and are the most likely to trust that professional lawn care companies can be relied upon.

Table 5. Cluster Analysis Attitudes on Sustainable Lawncare

Legend for Groups

Group 1: Ready to Act (41% of Residents)

Group 2: Need More Information (46% of Residents)

Group 3: Prioritizes Other Concerns (13% of Residents)

Statement	Total	Group 1	Group 2	Group 3
Healthy lawns reduce air pollution	48/20	50/25	46/13	52/22
…lawns produce oxygen and cut down on CO2 emissions	48/23	43/38	48/13	60/13
…lawns…reduce(s) the risk of flooding	48/28	48/33	46/23	53/28
Professional lawncare companies can be relied upon…	47/38	33/54	52/27	66/21
Worrying about any dangers …is a waste of time	16/71	11/83	16/64	28/61

Note: The numbers presented as Agree/Disagree. For example, 25% Agree, 75% Disagree = 25/75

Identifying these three distinct groups provides a strategic framework. It demonstrates that a single, one-size-fits-all message would be ineffective. Instead, outreach can be tailored to resonate with the high awareness of Group 1, address the knowledge gaps of Group 2, and counter the skepticism of Group 3 with compelling new information.

Discussion

The survey findings reveal a central tension in the attitudes of Long Island residents: a near-universal desire for an attractive lawn coexists with a significant and widespread concern for the environment. While 85% of residents state that having an attractively maintained lawn is important, 76% are simultaneously concerned that improper fertilizer application can cause environmental impacts.. This dynamic presents both the primary challenge and the greatest opportunity for the Long Island Regional Planning Council (LIRPC).

The data clearly indicates a gap between environmental concern and protective action. Despite high levels of concern, only 24% of all Long Islanders have undertaken five or more of the ten identified behaviors that can mitigate fertilizer's negative impacts. This suggests that concern alone is not sufficient to drive behavioral change. The barrier appears to be a lack of specific knowledge regarding both the severity of the threats and the steps that can be taken to address them.

Furthermore, the cluster analysis underscores that the Long Island public is not a monolith. The presence of three distinct groups—the "Ready to Act," the "Need More Information," and the "Prioritizes Other Concerns"—necessitates a nuanced communication strategy. A single message will not resonate with all residents equally. Therefore, outreach must be tailored to address the specific attitudes and knowledge levels of these different segments. The challenge lies in providing a clear pathway for residents to achieve their goal of a beautiful lawn while also acting on their environmental concerns in an informed way.

Recommendations

Based on the survey data, the primary recommendation is for the LIRPC and its partners to design and implement a multi-pronged public awareness campaign. The overarching goals of this campaign should be to:

1. Increase public knowledge of the potential impacts that can result from improper fertilizer application.
2. Generate behaviors among Long Islanders that reduce these potential impacts.

To achieve these goals, we recommend the following strategic actions:

Recommendation 1. Design a Multi-Faceted Educational Campaign
The campaign should focus on two core areas: clearly defining the threats and providing simple, actionable solutions.

Focus content on the issues where public knowledge is weakest. The survey found that only a fraction of the population is aware that improper fertilization impacts water quality, the local fishing economy, and the usability of recreational areas. Highlighting these tangible, local consequences will help move residents from general concern to specific understanding.

Rather than overwhelming residents with a long list of actions, the campaign should promote a small number of high-impact, easy-to-adopt behaviors. This could include soil testing, choosing slow-release fertilizers, and adhering to proper application timing.

Recommendation 2. Target Key Information Channels
The survey identifies two critical points of intervention for reaching homeowners who fertilize: home improvement centers and professional lawn care companies.

For the 45% of "Do-It-Yourself" fertilizing homeowners, home improvement stores and garden centers are a primary source of products and information. A program featuring simple informational handouts, posters, and point-of-sale displays could effectively influence purchasing decisions and practices.

To reach the 54% of lawn fertilizing residents who hire a professional lawn care service, we recommend a partnership and certification program. Lawn care companies could be provided with educational materials to share with clients and be officially recognized or certified for participating in safeguarding Long Island's environment. This leverages the trust residents place in these professionals.

Recommendation 3. Broaden Outreach through Community Institutions
We recommend enlisting high schools and other educational institutions as partners. Students in environmental programs could become community ambassadors, helping to increase knowledge and promote mitigating behaviors, such as by marketing or distributing soil quality test kits as a school fundraiser or community service project.

Recommendation 4. Craft a Simple, Memorable Message
To ensure the campaign resonates, we recommend working with marketing experts to craft a clear and simple message suitable for a social media campaign, bumper stickers, or a memorable slogan. The core message must be empowering, showing residents that protecting the environment and having an attractive lawn are not mutually exclusive goals. The challenge—and opportunity—is to show them how to achieve both.

Appendix

Figure 3. Attitudes on Lawn Fertilization