



# ANJEC REPORT

Local Environment Matters

SUMMER 2021

## Inside:

- Harmful Algal Blooms and what to do about them
- The right (and wrong) place for solar fields
- Moving the EV market forward



## Director's Report

Thank you! More than 600 environmental commissioners attended ANJEC's Fundamentals for Effective Environmental Commissioners courses this year! Attendance was double that of any recent previous year. We recognize and applaud your commitment to continuing education and local action.

If you missed any of those spring training sessions – Environmental Commission (EC) powers and responsibilities; setting goals and planning action; updating/creating an Environmental Resource Inventory (ERI); and reviewing site plan applications – they can be found on YouTube at ANJEC Views along with all other ANJEC webinars since March 2020.

The Fundamentals courses are just an example of a larger trend. Adversity seems to inspire your commitment to learning! We have seen your attendance at the annual Environmental Congress and other webinars more than double since ANJEC training went exclusively virtual at the beginning of the pandemic. Board and staff members have been visiting more EC meetings than before. And we have also witnessed increased diversity in age, race, and geography in attendance at ANJEC webinars.

While the pandemic is not yet over and many communities – as well as countries – continue to struggle, we are beginning to think about what life will look like post-pandemic while we seek to live our values and serve our community of ECs, volunteers, and municipal officials across this

great State. At ANJEC, we are resisting the urge to go back to the way things always were and, instead, we're working to imagine a better future.

Virtual programming helps us to drastically reduce our collective carbon footprint, contributes to lighter traffic on New Jersey's worn roads, eliminates commute times, and provides greater accessibility by making attendance easier on those without transportation and those with children and dependents at home.

ANJEC is committed to building community among ECs so that we can effectively and collectively tackle the biggest environmental challenges facing New Jersey as a whole, with local action that directly benefits your town. By providing better access to ongoing education, peer-to-peer learning and networking opportunities, as well as to the NJ Department of Environmental Protection and other State officials, ANJEC believes we can better achieve our core mission of empowering ECs, individuals, local and State agencies to preserve natural resources and achieve sustainable communities.

### Watch your email!

To ensure that we are best serving you, ANJEC will be sending out a survey this summer asking about the ways you would prefer to engage with us and each other (virtual/in person/hybrid) as we emerge from the pandemic. We also want to hear about what issues you are working on, where you are having success, and what

resources and assistance you need to face your challenges.

ANJEC is committed to:

- fighting the climate crisis by empowering local and statewide actions to reduce greenhouse gas emissions and enhance resilience, and
- advancing environmental justice in alliance with overburdened communities and those most vulnerable to the climate crisis.

And we are always here to help you tackle your local goals and challenges. So we hope you will take a few minutes this summer to share with us how we can serve you better moving forward.

If you are not on our email list, please ask us to add you by sending a message to [info@anjec.org](mailto:info@anjec.org). And be sure to follow us on Facebook, on Twitter @anjectweets, and on YouTube at ANJECviews.

Jennifer M. Coffey  
Executive Director

# In this issue:

- 2 Director's Report
- 4 Acting Locally
- 7 Living the quiet life
- 9 Electric vehicles are EVERYwhere!
- 11 Moving the electric vehicle market forward in NJ
- 12 What is a harmful algal bloom (HAB) and why do they form?
- 14 Managing HABs: A tale of two lakes
- 16 Act to address HABs
- 18 Which water is contaminated by HABs? (You may be surprised!)
- 20 Septic system maintenance keeps lakes clean
- 21 Candace McKee Ashmun Memorial Fund
- 22 Hop to it: A beginner's look at NJ's Amphibian Crossing Project
- 23 ANJEC hosts first statewide Earth Day Fair
- 24 Sound solar siting is essential to meet clean energy goals
- 26 ANJEC's Environmental Congress
- 26 New website aims to reduce plastic pollution
- 27 Environmental Achievement Awards

Library Subscription  
\$18.00  
ISSN 1538-0742



**ANJEC REPORT**  
Local Environment Matters

Vol. 41 / No. 3                      SUMMER 2021

---

**565 MUNICIPALITIES ..... ONE ENVIRONMENT**

Executive Director ..... Jennifer M. Coffey  
Editor ..... Julie Lange Groth

---

The Association of New Jersey Environmental Commissions is a private, non-profit educational organization serving environmental commission and open space committee members, concerned individuals, non-profits, and local officials. ANJEC's programs aim to promote the public interest in natural resource preservation, sustainable development and reclamation and support environmental commissions and open space committees working with citizens and other non-profit organizations.

---

The *REPORT* welcomes articles and photographs but is not responsible for loss or damage. Opinions expressed by guest authors do not necessarily reflect ANJEC policy. Articles may be reprinted with permission and credit.

Please address correspondence to *ANJEC REPORT*, PO Box 157, Mendham, NJ 07945; tel: 973-539-7547. E-mail [info@ANJEC.org](mailto:info@ANJEC.org). Website: [www.anjec.org](http://www.anjec.org).

On the cover:

*The Delaware Bay at dawn* Photo by Michael Mill



# Acting Locally



By **Michele Gaynor**, ANJEC Resource Center;  
and **Julie Lange Groth**, ANJEC Report Editor

## Caldwell's Ann Marchioni recognized

Ann Marchioni, Caldwell Environmental Commission (EC) co-chair, is one of the first recipients of the Borough's new Women's Impact Award. Caldwell and New Jersey have benefited greatly from the knowledge, dedication and enthusiasm of this energetic resident.

Ann has worked tirelessly for decades to ensure that future generations will have a thriving and healthy local environment. Under her leadership, her Commission has received ANJEC's Environmental Achievement Award multiple times and was able to secure ANJEC Open Space Stewardship grants to fund a pollinator garden that was built on an open space property in Caldwell. She also successfully secured funding for her town from the PSEG Solar4 All Program after attending an ANJEC workshop on Clean Energy. With Ann's leadership, Caldwell also earned Bronze level Sustainable Jersey certifications in 2014 and in 2017.

Environmental issues have always been a part of Ann's life. She received a master's degree from Montclair State University, where one professor said, "Now that you have become active politically, it doesn't matter what party (you support) as long as it helps the environment."

Throughout her career, Ann's focus has been teaching, both in the classroom and



*Ann Marchioni*

in the community, educating students and residents about the issues that are important to her. Ann is not known to shy away from difficult projects – in fact, she seems to enjoy the challenge. With her constant perseverance she manages to win over skeptics and get projects approved when others might have given up.

Ann is also an ANJEC volunteer and former employee. She joined the ANJEC staff as Development Director after retiring from teaching and later became ANJEC's volunteer representative to EarthShareNJ.

"I was honored to receive this award," Ann said. "I accepted it for all the folks who have been involved in the Commission's activities over the years. It is encouraging that the town has a way to recognize women who help the town through community service."

– Michele Gaynor

## Belmar's beachscape – planting for protection

Belmar continues to demonstrate resilience and determination to protect their piece of NJ's valuable coastline. The town carries on their work with a dune restoration project that was initiated six years ago by Councilman and EC Liaison Tom Brennan. After the destruction of their boardwalk and dunes caused by Superstorm Sandy, dune stabilization became a priority to maintain a sound and healthy shoreline.

The original restoration project was expanded with 12 blocks of new plantings to include various native pollinator plants and grasses that will be intermixed along the dunes. The plantings are part of a management plan to stabilize the sand and prevent future catastrophic erosion events.

Last November, with help from 25 volunteers, which included Public Works employees and several Environmental Commission members, teams installed some 3,200 native plants in the sand near the boardwalk. They are about a third of the way through the project, with planting expected to finish in the fall of 2022.

Belmar received input from the NJ Department of Environmental Protection (NJDEP) and NJ Fish and Wildlife regarding the appropriate types of vegetation to best support the dunes and encourage pollinators. The collaborative process will create twenty blocks of continuous beachscape, ensuring that residents and visitors will be able to enjoy the beach and boardwalk for generations to come.

– Michele Gaynor

## Making Middlesex towns more resilient to flooding

Seven Middlesex County municipalities located at the confluence of the Raritan River and the Arthur Kill are collaborating with the NJDEP to develop a roadmap to address flooding caused by heavy precipitation and coastal storms. The Resilient NJ Raritan River and Bay Communities program aims to develop flood risk and resilience solutions for the region, with a combined population of over 300,000. Residents and businesses in the area have experienced flooding for decades, but recent major floods and chronic flooding issues have sparked more interest in working to increase resilience. In 2012, severe flooding from Hurricane Sandy caused major power outages and property damage, forcing the evacuation of thousands of people. The region has since experienced flooding from other storms, including Nor'easters and Hurricanes Irene and Isaias. Many neighborhoods in the region also experience flooding due to heavy rainfall events when the stormwater system is overwhelmed. While various resilience-related planning efforts have been mounted in the region over the years, many residents are still at risk. The Resilient NJ Raritan River and Bay

Communities program will develop solutions to increase resilience and help protect the residents of each municipality. Those solutions may include zoning changes, physical projects, education initiatives and more. Involved communities are currently in the visioning process, gathering information and input from stakeholders. The next step, risk assessment, will take place later this year. Public input is strongly encouraged and the NJDEP has developed a website to keep residents informed and gather input.

More information – '  
<https://resilientnewjersey.com/>

– Julie Lange Groth

## Holding the vision during pandemic times

The Madison Environmental Commission held its Third Annual Green Forum on March 24, but this year with a new twist. The entire event happened virtually via Zoom.

The stars of the event were students from Madison's elementary, junior and high schools, along with local college students, who presented their recent environmental projects. For example, students from the

Torey J. Sabatini School talked about their Native Plant Cookbook and Madison Junior School presented their toy recycling program. A representative of Fairleigh Dickinson University discussed their rooftop gardens initiative and Saint Elizabeth University discussed efforts to reduce the school's carbon footprint by greening campus transportation options.

"This is an exciting opportunity for students to explore environmental topics that inspire them to make change in their schools, campuses and communities," said event organizer Kirsten Wallenstein of the Madison Environmental Commission. "It is amazing to see the positive impact these student leaders have on Madison. Past projects have motivated residents to take environmental actions by skipping the straw, remembering their reusable water bottle, or starting to compost."

The event began with a welcome by Mayor Robert H. Conley, who reflected on how the Borough rose to the challenges of the pandemic. "When a crisis is upon us, we can tackle the challenge, work together and think creatively, and that's exactly what the Green Forum is all about," he said.

The forum also included discussions with Borough officials. A recording of the Mayor's introduction and the event agenda are available at [www.youtube.com/watch?v=wBz\\_Bglo16Y](https://www.youtube.com/watch?v=wBz_Bglo16Y).

— Julie Lange Groth



*Councilman John Weber, who helped bring the plastic film recycling program to Bradley Beach, puts out his recycling bin.*

## Bradley Beach finds an easier way

In November of 2019, the Borough of Bradley Beach became New Jersey's first community to launch a pilot program for residential curbside plastic film recycling. The Borough provides its own hauling for recycling. Residents are instructed to place bagged film in a dedicated curbside bin labeled "plastic film," provided to each household by the Borough. Residents place it next to their regular recycling bin for collection on the second Wednesday of each month.

Once collected, the material is delivered to Mazza Recycling Services in Tinton Falls, where the plastic film is baled and stored. Upon reaching adequate volume, an end-market purchaser picks up the material. SC Johnson, a manufacturer of cleaning supplies, is providing funding for the collection vehicle, curbside bins and community engagement materials to raise awareness.

For more information, contact Mike Beson of Guide Strategies at [mikebeson@gmail.com](mailto:mikebeson@gmail.com)

# Living the quiet life

## There's a new wind blowing in New Jersey – and it's not powered by gas.

By **Sheila Baker Gujral**, ANJEC Resource Center Director and Maplewood Environmental Advisory Committee

The noise was too much. The toxic emissions of carbon monoxide and ozone-forming chemicals were too much. The damaging particulates were too much. People chose to move to Maplewood, a quiet, leafy suburb of New York City, where they could breathe fresh air, but then Maplewood turned out to be not so quiet, the air not always so fresh, and the leaves posed a challenge. The high-intensity lawn maintenance programs that require frequent leaf-blowing by teams of up to five people at once leave the lawns stripped of valuable organic matter and the habitats of pollinators and other important members of the ecosystem are often destroyed. And during a pandemic, noise makes it impossible to conduct those virtual work and school meetings.

### The quest for peace and clean air

In 2016, Maplewood decided to investigate what the town could look (and sound, and smell) like with limited use of gas-powered leafblowers. They ran a pilot program to ban all commercial leaf blowing from May through August of 2016.<sup>1</sup> After a successful summer of quiet, it was followed up by an ordinance officially banning gas-powered commercial leafblowers from May 15 to September 30. Commercial landscapers challenged the ordinance in court.

In February 2021, Maplewood revised their ordinance to address the major issues of concern and make it stronger – they have extended the time period from May 1 to September 30 – and the ordinance now applies to all gas-powered leafblowers, whether commercial or residential. It also tightened up the definition of gas-powered leafblowers to be “a piece of equipment powered by a two-stroke or four-stroke engine using gasoline or a mixture of gasoline and oil blend as fuel and used primarily, but not exclusively, for yard and lawn maintenance.”<sup>2</sup>

The Maplewood Environmental Advisory Committee (EAC) is now proposing a year-round ban on gas-powered leaf blowers and presented their recommendation to the Township Committee on May 4th. While some may say, “I can do what I want on my own property,” the EAC stresses that what one person does has an impact on their neighbors. It’s why we stopped smoking in theaters and restaurants and on public transportation, why we now tent houses when sanding off lead-based paint – because what we do does affect others.

“It’s not just a town vs. residents issue – this is something that we all need to be educated on,” said Rachael Metka, Maplewood EAC member and founder of Quiet Maplewood. “Like with smoking and seat belts and lead paint, we all have to

<sup>1</sup> <https://villagegreennj.com/towns/maplewoods-commercial-leaf-blower-ban-takes-effect-june#:~:text=Maplewood%20Township's%20pilot%20program%20to,not%20affected%20by%20the%20resolution.>

<sup>2</sup> [www.twp.maplewood.nj.us/sites/g/files/vyhlif3396/ff/agendas/agenda\\_-\\_tuesday\\_february\\_2\\_2021\\_preliminary\\_o.pdf](http://www.twp.maplewood.nj.us/sites/g/files/vyhlif3396/ff/agendas/agenda_-_tuesday_february_2_2021_preliminary_o.pdf)



educate ourselves. It's a social responsibility. The facts and the evidence are here." The EAC has been joined by the Maplewood Green Team and SOMA Action in their support of a year-round ban.

## Following Maplewood's example

On February 16, Montclair passed an ordinance limiting the operation of leaf blowers powered by internal combustion engines to the time period between March 15 and May 15 and between October 15 and December 15.<sup>3</sup> The days when internal combustion leaf blowers are allowed was reduced from 168 to 93 days a year and the permitted time slot reduced by one hour each day.

Summit is also pursuing a quieter, less toxic, and more peaceful environment. On April 6, the Summit Common Council voted 6-1 to approve a pilot program to ban gas-powered leaf blowers from June 1 through August 31, 2021. On May 4, the Council voted in favor of a hardship waiver for businesses impacted by the summer pilot program. The City's Department of Public Works is one step ahead of the movement – it successfully switched to electric- and battery-operated blowers in 2020.

Westfield is also pursuing a pilot with their Department of Public Works using battery-operated equipment and educating residents about the virtues of sustainable landscaping techniques vs. using two-stroke lawn maintenance equipment. More municipalities are working on their own leaf blower bans – South Orange, Princeton, Millburn and West Orange are in various stages of collecting data, communicating



*Worker using a gas-powered leaf blower to clear leaves in a park.*

to residents and gearing up to enact an ordinance.

One thing we have learned during these stay-at-home times is that we are all in this together and our actions impact others. You may not have realized what was going on while you were at the office, but now you know. If you are interested in pursuing a quieter, less toxic atmosphere where you live, Advocates for Transforming Landscaping in New Jersey (ATL-NJ) is a working group focused on this issue. You can reach out to its founders Lois Kraus ([Lois.Kraus2662@gmail.com](mailto:Lois.Kraus2662@gmail.com)) and Peter Holm ([pmholm@gmail.com](mailto:pmholm@gmail.com)) to access more resources and attend their meetings. As always, if you have any further questions, please reach out to ANJEC at [info@anjec.org](mailto:info@anjec.org).

### Resources:

Healthy Yards – [www.healthyyards.org/homeowners/](http://www.healthyyards.org/homeowners/)

Quiet Maplewood – [www.quietmaplewood.com/](http://www.quietmaplewood.com/)

Quiet Montclair – [www.quietmontclair.org/resources](http://www.quietmontclair.org/resources)

Quiet Princeton – <http://quietprinceton.org/>

<sup>3</sup> [https://www.montclairnjusa.org/news/headlines/leaf\\_blower\\_ordinance\\_now\\_in\\_effect](https://www.montclairnjusa.org/news/headlines/leaf_blower_ordinance_now_in_effect)



# Electric vehicles are EVerywhere!

By Lyle Landon, ANJEC Development Director

Support for increasing the number of EVs and EV charging station installations is coming from many sources. Although some federal point-of-sale rebates and State tax incentives for some auto manufacturers' EV models ended at the end of 2020, President Biden's *American Jobs Plan* calls for a \$174 billion investment to "win the EV market" and create a national network of half a million EV chargers by 2030.

The NJ Department of Environmental Protection (NJDEP) is recommending a ban on gasoline-powered car sales by 2035. Anticipating a market shift, automotive manufacturers are increasing the number of EV models available and extending their driving range. While the sticker price for EVs is sometimes higher than for gas-powered vehicles, their lower operating costs make them more affordable over the life of the vehicle.

Public opinion has been changing too. New Jerseyans seem to agree with the first sentence on the NJDEP website [drivegreen.nj.gov](http://drivegreen.nj.gov): "Your choice to drive electric improves New Jersey's air quality and helps slow climate change." By the end of last year, there were more than 41,000 electric vehicles registered in New Jersey, including both battery electric and plugin hybrid electric vehicles.

While New Jersey lacks a self-sustaining source of clean transportation revenue, like California's cap-and-trade program, there is progress at the community level. Advancement can be measured in EV purchases and charging station installations. EV education from ANJEC and several other nonprofit and government groups is also increasing EV acceptance and interest as the nation awakens to the economic, environmental and national security risks of relying almost exclusively on fossil fuels.



*The Secaucus Police Department uses a Ford Escape Hybrid*

## Towns are getting EV-ready

Ridewise, a Somerset County coalition for environmentally friendly transportation, recently presented a webinar showcasing progress made in electrifying the fleets in Somerset County. The County Department of Public Works (DPW) has six Chevy Bolts in its fleet. According to Paul McCall, County DPW Director, these EVs are used for the motor pool, youth services, the Office of Emergency Management, intra-county mail delivery and other tasks. They have one charger just for municipal cars and one for public use.

McCall says his 2021 budget includes an electric recycling truck, which will cost \$575,000 – a price that is \$200,000 higher than for a gas-powered truck. But officials believe the reduction in vehicle emissions from idling makes it worth the cost. Somerset County also plans to seek grants to purchase an electric bus for \$750,000.

With so much stop and go on their daily routes, recycling trucks and school buses idle a lot, so it was not surprising that they will be the first to be replaced by EVs. Similarly, police cars are required to run their lights, computers and radios even when they are not in motion. On the plus side, EVs can go from 0 – 60 mph faster than gas-powered cars when needed.

McCall foresees a need for skilled “green workers,” specifically electric vehicle mechanics. Their EVs are currently serviced by the dealership. *US News & World Report* has ranked Automotive Technicians as one of the “100 best jobs in America.”

Leanne McGowan of Ridewise noted that Raritan Valley Community College has both a certification and a degree program in Automotive Tech with training for servicing self-driving cars, EVs and hybrids. Moreover, the school has partnerships with Ford, Fiat Chrysler, Subaru and Toyota to accelerate job placement. Meanwhile Somerset County firemen have already received special training on how to control electrical car fires, which occur less frequently than gas-powered car fires.


One of the main challenges for purchasing EVs as part of the police fleet has been battery strength and endurance, as there are so many electronics required in their cars. Gray Russell, Sustainability Director for Montclair, pointed out that another issue is charging time, especially when a vehicle is used for three eight-hour shifts consecutively. Fortunately, not all vehicles are required for back-to-back use. The Town of Secaucus has purchased several Ford Escape Hybrids for its police force and three pre-owned BMW EVs for other municipal uses. Hazlet Township has purchased six Ford Interceptor hybrid patrol vehicles.

## Charging infrastructure is multiplying

The number of EV Charging stations available to the public is also growing. The State is committed to placing fast DC chargers on New Jersey major corridors and rest stops. Meanwhile, local retailers and entertainment destinations are also installing electric vehicle charging stations. For example, over a five-month period the Bergen County Zoo purchased three Level-2 charging stations that logged 588 visitor charging sessions, powering 6,300 miles and eliminating 2,200 pounds of CO<sub>2</sub> emissions.

Proposed New Jersey bill S-3223 will be a boon to EV adoption in NJ municipalities if enacted. Sponsored by Senators Smith and Bateman, it makes electric vehicle charging infrastructure a permitted accessory use in all areas, so locating charging stations would never require a zoning variance. The bill was approved by the Senate in January and is awaiting a vote in the Assembly State and Local Government Committee.

### Resources

- “Guidance for Creating Plug-In Electric Vehicle (PEV) Friendly Ordinances”: [www.sustainablejersey.com](http://www.sustainablejersey.com)
- [Ridewise.org](http://Ridewise.org)
- [Drivegreen.nj.gov](http://Drivegreen.nj.gov)
- [Electrification Coalition.org](http://Electrification Coalition.org)
- [Plugshare.com](http://Plugshare.com) 

# Moving the electric vehicle market forward in NJ

By Julie Lange Groth, ANJEC Report Editor


ChargEVC, a nonprofit coalition that includes ANJEC, has released its updated Roadmap 2.0, continuing its' advocacy to advance New Jersey's position as a leader in the electric vehicle (EV) market. Roadmap 1.0, released in 2017, set multiple goals that were eventually implemented in New Jersey's nation-leading EV law, enacted in January 2020, which set the goal of having 330,000 EV vehicles on the road by 2025.

Important progress has followed:

- The New Jersey Board of Public Utilities (NJBPU) launched an EV vehicle-purchase rebate program in mid-2020;
- The NJBPU approved two utility EV filings to promote charging infrastructure;
- VW settlement dollars and Regional Greenhouse Gas Initiative proceeds have been invested in electrification initiatives; and
- The New Jersey Department of Environmental Protection announced its intention to draft rules that adopt California's Advanced Clean Truck Rules.

Now Roadmap 2.0 reinforces the initiatives set forth in 2017 and expands upon those goals to account for New Jersey's rapidly growing EV market.

This release comes after the recent release by President Biden of new US climate goals calling for 50 percent reduction in greenhouse gas emissions by 2030. Transportation will play an essential role in reaching this goal. The goals and actions highlighted in the new Roadmap represent the minimum level of action needed to ensure New Jersey does its part in contributing to national goals.

Roadmap 2.0 focuses on the high-impact initiatives necessary in the light-, medium-, and heavy-duty segments to ensure that all New Jerseyans can enjoy the many benefits of the vehicle electrification trend. For example, it highlights the need for the establishment of electric fleets, taxis and rideshare services, public transit, school buses and other advanced mobility services that directly service low income and environmental justice communities. 

## More information

- ChargEVC website – [www.chargevc.org/](http://www.chargevc.org/)
- Roadmap 2.0 – [www.chargevc.org/wp-content/uploads/2021/04/ChargEVC-NJ-Roadmap-2.0.pdf](http://www.chargevc.org/wp-content/uploads/2021/04/ChargEVC-NJ-Roadmap-2.0.pdf)

*EV charging stations*



# What is a harmful algal bloom (HAB) and why do they form?

By Jason E. Adolf, Ph.D.,  
Associate Professor, Monmouth University

Anyone paying attention to New Jersey's lakes and coastal waters, especially if you live near them, has probably heard the term "harmful algal bloom" (HAB), and that has likely been linked to less-than-desirable consequences about access to, and the safety of, the waterbody. Here I aim to give the scientific context of what an HAB is and how it differs from business as usual for aquatic ecosystems, particularly lakes.

Harmful algal blooms are mostly formed by phytoplankton – an essential and taxonomically diverse group of photosynthetic microorganisms that grow in the water columns of lakes, estuaries and the ocean. Phytoplankton use sunlight and inorganic building blocks including carbon, nitrogen and phosphorous to build more of themselves. In doing so, phytoplankton release oxygen as a byproduct, exemplifying the phrase: "one person's trash is another's treasure," as approximately half of the oxygen we breathe comes from phytoplankton.

Phytoplankton are considered "primary producers" because of their ability to transform inorganic building blocks into food energy for the rest of ecosystem. In many aquatic ecosystems, and most of the time, phytoplankton play an important role in biogeochemical cycling, feeding a diverse array of primary consumers such as bacteria, zooplankton, and larval and juvenile fish, not to mention you and me when we eat fish. For phytoplankton this is business as usual!

Harmful algal blooms are caused by a small subset of the approximately 25,000 species of phytoplankton known to exist. Within any given aquatic ecosystem there can be tens to hundreds of common species cycling with seasonal changes in environmental conditions like sunlight, nutrient availability, water temperature, water



*Samples of water collected from several Monmouth County Lakes in 2019*



column structure and succession of grazer communities. Anthropogenic activity, such as climate change and eutrophication, have also changed environmental conditions in and around aquatic ecosystems. It is the consensus among the scientific community studying HABs that excess nutrient loading and anthropogenic climate change have increased the frequency and magnitude of HABs globally and will continue to do so if these factors go unchecked.

## The colorful culprit – cyanobacteria

In lake ecosystems, the phytoplankton responsible for most HAB events are a type of photosynthetic bacteria known as cyanobacteria, or sometimes called “blue-green algae” in older literature.

Cyanobacteria are Earth’s oldest oxygen-producing photosynthetic organisms. They were responsible for the oxygenation of Earth’s atmosphere about 2.3 billion years ago, and are ancestors of chloroplasts inside the cells of all eukaryotic plants and algae.

There are approximately 2,000 species of cyanobacteria representing a wide array of morphologies, ecological strategies and metabolic abilities. Certain cyanobacteria have gas-filled cavities called vacuoles that make them positively buoyant, driving surface accumulations known as “scums.” Some use specialized cells to “fix” atmospheric N<sub>2</sub> into reduced N forms (a capability that is not common among phytoplankton) that they and other primary producers can use to grow. Others can produce specialized cells called akinetes that allow overwintering until good growth conditions return. These form-function adaptations are key to cyanobacterial success in different environments.

## How cyanobacteria cause harm


Cyanobacteria produce potent toxins that can affect the liver and nervous system, making them dangerous to have blooming in our lakes. Cyanotoxins can contaminate drinking water to adversely affect humans, pets and wildlife through contact with or ingestion of contaminated

lake water. For instance, the cyano-bacterium *Microcystis aeruginosa* can produce the potent hepatotoxin, micro-cystin, which is perhaps the most commonly-encountered cyanotoxin issue in lakes.

Other common cyanotoxins include cylindrospermopsin (hepatotoxin), anatoxin-a (neurotoxin), and saxitoxin (neurotoxin). Within a given population of cyanobacteria, a mix of toxic and nontoxic strains of the same species have typically been observed, reflecting the presence or absence (respectively) of the genes necessary to synthesize toxin. Among toxic strains, environmental conditions like nutrient levels and temperature can “turn on” toxin biosynthesis genes, or drive enrichment of toxic strains in mixed populations.

The list of cyanotoxins continues to grow in quite unexpected ways. A wildlife disease called vacuolar myelinopathy, responsible for bald eagle deaths in the Southeast, was recently traced back to cyanobacteria producing a novel cyanotoxin (aetokthonotoxin) growing on an invasive plant (*Hydrilla verticillata*). While we cannot tell just by looking (even under the microscope) whether cyanobacteria are producing toxins or not, the risk from known and emerging cyanotoxins warrants attention by environmental managers and concerned citizens.

The phytoplankton community of our lakes, estuaries and coastal ocean are taxonomically diverse and an important part of the ecosystem. When we see a HAB, we are looking at an accumulation of a subset of a species from within a potential pool of hundreds of species. Understanding how environmental conditions favor HAB species is critical to forecasting, adapting to and mitigating HABs.

*Dr. Adolf works with the Marine and Environmental Biology and Policy (MEBP) program in the Biology Department and Urban Coast Institute at Monmouth University. He can be reached at [jadolf@monmouth.edu](mailto:jadolf@monmouth.edu).* 

# Managing HABs: A tale of two lakes

By **Stephen J. Souza, Ph.D.**,  
Owner, Clean Waters Consulting, LLC



*Lake Mohawk*

## Prologue

The ecological and recreational challenges of managing harmful algal blooms (HABs), though daunting, can be overcome. This tale documents the approach taken with two very different lakes. One lake is private, the other public. One is located in a suburban setting, the other in a more urban setting. One is much larger and deeper than the other. However, they both have one thing in common: a community committed to the proper management of HABs.

## The characters

The subjects of this tale are Deal Lake and Lake Mohawk. Managed by the Deal Lake Commission (DLC), Deal Lake encompasses 155 acres and has a maximum depth of eight feet. Bordered mostly by Ocean Township and Asbury Park in Monmouth County, it is New Jersey's largest coastal lake. Its 4,400-acre watershed is a matrix of high-density residential, commercial and industrial land uses.

Lake Mohawk, a 770-acre lake with a maximum depth of 23 feet, is located in Sparta in Sussex County. It is managed by the Lake Mohawk Country Club (LMCC). Its relatively small 2,014-acre watershed, the majority of which is located within the boundaries of the Lake Mohawk Reservation, is dominated by single-family homes.

## The tale

With increasing densities of cyanobacteria comes the production of cyanotoxins. Even at moderate concentrations, cyanotoxins present health risks to humans, pets and livestock. Although cyanobacteria occur naturally in all lakes, there are ways to proactively control the conditions that lead to HABs and elevated cyanotoxin concentrations. That dear reader, is the underlying theme of this tale.

The tale begins in the 1980s, initiated by community concerns of periodically intense algae blooms. While not defined at that time as HAB, the blooms experienced by both lakes were caused by cyanobacteria. For each lake, the battle against HABs began with the preparation of a detailed *Lake and Watershed Restoration Plan*. Through extensive data collection and water quality modeling, each lake's *Plan* identified the causes and reasons for the blooms and identified what needed to be done to decrease their occurrence. The data clearly showed that this would require a reduction of the annual phosphorus loading, the primary driver of lake eutrophication and HABs.

The Lake Mohawk *Plan* determined that the phosphorus released and recycled from the lake's sediments during periods of thermal stratification and deep-water anoxia and the phosphorus introduced via septic systems were the two primary sources of phosphorus requiring immediate control. The first step taken by the LMCC was the installation in 1993 of a first-of-its-kind, automated alum injection/aeration system. The alum/aeration system keeps the lake's water column mixed and also introduces a small amount of alum at a pre-computed daily dose rate. This prevents thermal stratification and deep-water anoxia and decreases the amount of bioavailable phosphorus. This measure reduced cyanobacteria densities and the development of blooms.

The community then worked with Sparta Township to implement special ordinances specific only to the Lake Mohawk Reservation. One mandated septic pump-out once every three years. The other ordinance prohibited the application of phosphorus fertilizers and is very similar to State legislation subsequently enacted in 2012.

To address the lake's external phosphorus load, the LMCC started improving the stormwater collection system, installing over 20 modified catch basins, including two equipped with storm-flow activated alum injectors. The combined phosphorus load reductions achieved through the implementation of these internal and external phosphorus management strategies increased the lake's average mid-summer clarity from 1.5 feet to 6 feet, dramatically decreased mid-summer phosphorus concentrations and helped prevent the occurrence of HABs. The LMCC's success has been recognized by national and state awards and recognition from the North American Lake Management Society (NALMS).

The *Deal Lake Plan* identified that the primary source of phosphorus in need of control was being transported with stormwater runoff originating from the lake's large and extensively developed watershed. The first course of action was to actively work with the seven municipalities located within the watershed to implement enhanced stormwater management measures for all new development. The DLC then identified opportunities where the phosphorus removal capabilities of the watershed's stormwater collection system could be improved through retrofits and upgrades.

This led to the DLC's first 319(h) grant from the US Environmental Protection Agency, which was used to construct two vegetated bio-infiltration basins and a demonstration rain garden and to install a large, subsurface manufactured treatment device (MTD) at one of the lake's primary outfalls. Collectively these projects were shown to annually remove over two tons of litter and enough phosphorus to prevent the growth of over 30,000 pounds of algae.

With another 319(h) grant, the DLC will install two additional MTDs, three curbside


tree boxes, and three floating wetland islands, all of which will further decrease phosphorus and sediment loading and remove litter. The DLC's work with the community has involved:

- green infrastructure education at "breakfast meetings" with public works and municipal officials,
- workshops with residents,
- the active support of a neighborhood groups working to implement lot-specific rain gardens and small community green infrastructure projects, and
- participation in Monmouth University's citizen scientist CLONET program to monitor lake conditions.

The DLC will soon partner with New Jersey Institute of Technology to test a novel nanobubble, a cyanobacteria harvesting barge. In recognition of the DLC's efforts to protect and restore Deal Lake, the DLC received a Lake Management Achievement Award from NALMS.

## Epilogue

The tales of Lake Mohawk and Deal Lake show that with a detailed, data-driven plan supported by residents, a lake community can take on the challenges of HABs and prevail. Their HAB management stories continue because both the LMCC and the DLC understand that perseverance is needed to protect their lakes from HABs. So, stay tuned!

Stephen J. Souza can be reached at [sjsouza.cwc@gmail.com](mailto:sjsouza.cwc@gmail.com), 609-306-5428. 



*The Comstock Avenue helical swirl condenser, which removes sediment, litter, and particulate pollutants from Deal Lake*

# Act to address HABs

By **Randi K. Rothmel**, Ph.D., ANJEC South Jersey Project Director, and **Dan Kurela**, Liberty Twp. Environmental Commission

**Y**ou arrive at a nearby lake for a fishing excursion with your grandchildren on a Sunday afternoon, only to find green slime on the water. Is this the dreaded three letter acronym, HAB, a harmful algal bloom? You take pictures, tell your grandchildren that the fish are not biting today and return home. How did your beautiful lake community come to this? What can you do, what can your town do, and what steps need to be taken to restore the lake to its former grandeur?



*Volunteers plant a rain garden in Liberty Twp*

## Initial steps you should take

First, report any suspected HAB to the NJ Department of Environmental Protection (NJDEP) through the online reporting system at [www.nj.gov/dep/hab/](http://www.nj.gov/dep/hab/) by uploading pictures, providing GPS coordinates, and supplying other requested information.

Secondly, reach out to your local municipality, environmental commission (EC) and lake association about your sighting.

The NJDEP will evaluate reported information and conduct a site survey and/or lab analysis as needed. Once the investigation is complete, results and recommendations for public notices or advisories will be posted. Advisories, if issued, are based on the new five-tiered alert system ([nj.gov/dep/hab/alert-tiers-signs.html](http://nj.gov/dep/hab/alert-tiers-signs.html)). Local partners (park departments, health departments, lake associations) should continue to visually survey confirmed HABs for any changes and can request a phycocyanin meter from the NJDEP for additional monitoring.

## What your town can do

Municipalities and environmental commissions play a critical role in responding to HABs. Recommended action items include:

- Engage and educate – hold a public forum on HABs and utilize the various NJDEP fact sheets to educate the community.
- Establish a lake subcommittee as Liberty Township has done, composed of representatives from the township committee, environmental commission, local lake association, recreation commission and/or open space committee to address lake issues, develop a long-term plan and research funding opportunities.
- Prepare and implement a comprehensive lake management plan. Liberty Township's proposed lake plan to restore and maintain Mountain Lake includes water quality monitoring, issue identification, remediation, mitigation of major sources of impairment; weed and muck control, community outreach and



education, coordination with other lake associations and municipalities, and financing.

- Create a community-based water monitoring group. Reach out to the NJ Watershed Watch Network (<https://njwatershedwatch.org>) for guidance and training for local citizen scientists to monitor and sample lakes for water quality.
- Pass local ordinances to reduce nutrient loading (a key factor in algal blooms) such as:
  - a) an enhanced stormwater management ordinance – <https://anjec.org/stormwater-overview-water-2/>;
  - b) a septic maintenance ordinance – both the Township of Jefferson and West Milford require septic pump-outs every three years;
  - c) a riparian buffer ordinance to protect the shoreline of the lake.
- Promote green infrastructure installation on public and private property.
- Enforce the State’s fertilizer law to ensure no excess nutrients are running into the lakes.
- Develop a plan to control the geese population.
- Perform a stormwater utility feasibility study for your municipality or consider joining with neighboring municipalities to do one at the regional level. Creating a stormwater utility provides revenue on an equitable basis to pay for stormwater reduction measures such as green infrastructure to filter out contaminants that feed algal blooms.

## What the State is doing

In 2019, Governor Murphy announced an initiative to address HABs. A detailed state-wide HAB response has since been developed by the NJDEP, the NJ Cyanobacterial Harmful Algal Bloom (HAB) Response Strategy [www.state.nj.us/dep/hab/download/NJHABResponseStrategy.pdf](http://www.state.nj.us/dep/hab/download/NJHABResponseStrategy.pdf). NJDEP also recruited a team of scientific experts to provide guidance on the best management practices on HAB prevention, mitigation, and management.

In 2020, the NJDEP made \$13.5 million available for local HAB projects, awarding \$3.5 million in grants for projects reducing the impacts of pollution and for development of restoration plans. In addition, \$10 million was made available through the Clean Water State Revolving Fund as principal-forgiveness funds for projects improving water quality. A New Jersey Senate bill (S3618) calls for a supplemental appropriation of \$10 million in grants to improve water quality and increase recreational access to and use of lakes, including projects to control nutrient levels to prevent future HABs.

## Looking forward

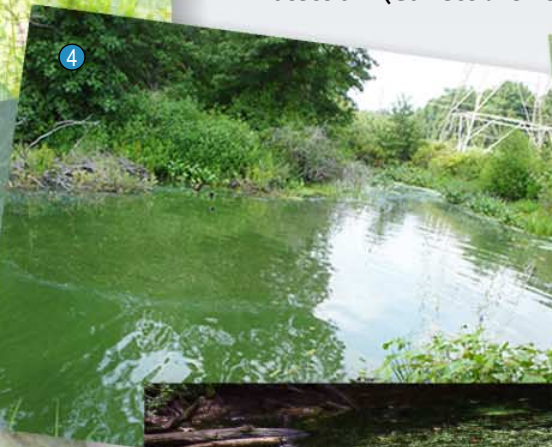
As the State and local governments put in place plans to mitigate current HAB outbreaks and implement maintenance plans to avert future HABs, local commitment, citizen support, motivation, and intervention is paramount so you can reschedule that postponed fishing outing. 🌊

### HAB resources

- NJDEP website page on HABs – [www.nj.gov/dep/hab/](http://www.nj.gov/dep/hab/)
- EPA Harmful Algal Blooms website – [www.epa.gov/nutrientpollution/harmful-algal-blooms](http://www.epa.gov/nutrientpollution/harmful-algal-blooms)
- Fact sheet – Water quality concerns for lakefront communities: [www.nj.gov/dep/hab/download/HAB\\_Lakes\\_Factsheet.pdf](http://www.nj.gov/dep/hab/download/HAB_Lakes_Factsheet.pdf)
- Waterfront homeowners’ planting guide, North Jersey – [www.nj.gov/dep/hab/download/HABGuideNorth0520.pdf](http://www.nj.gov/dep/hab/download/HABGuideNorth0520.pdf)
- Waterfront homeowners’ planting guide, South Jersey – [www.nj.gov/dep/hab/download/HABGuideSouth0520.pdf](http://www.nj.gov/dep/hab/download/HABGuideSouth0520.pdf)
- North American Lake Management Society HAB program – [www.nalms.org/inlandhabs/](http://www.nalms.org/inlandhabs/)
- NY State Federation of Lake Associations HAB web page – [nysfola.org/habs/](http://nysfola.org/habs/)
- Public service announcement video – Algal Blooms Can Harm Your Health: [www.youtube.com/watch?v=oojoYef9oJU](https://www.youtube.com/watch?v=oojoYef9oJU)

# Which contaminant (You may b

Can you tell whether a wa  
harmful algal blooms just b  
not so simple. Test yoursel  
courtesy of the NJ Depart  
Protection. (Correct answer

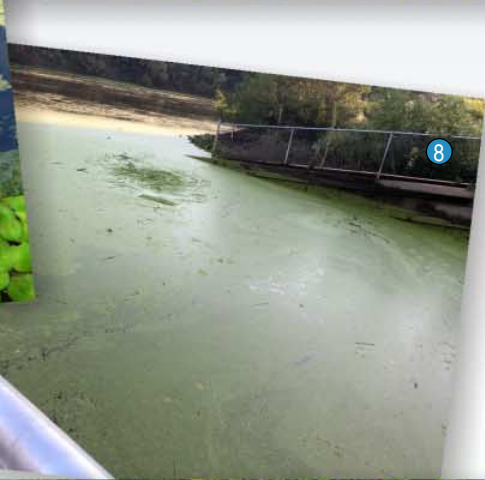
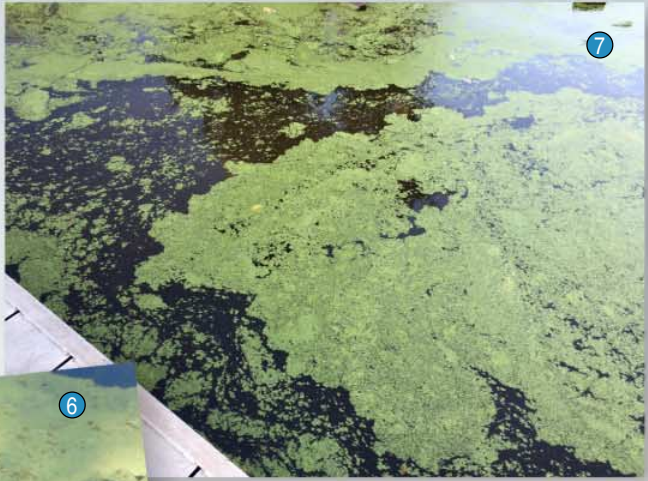


Answers: HAB photos 1, 2, 3, 4, 9 Non-HAB  
Photos provided courtesy of the NJ Depart  
tal Protection – [www.nj.gov/dep/hab/photos](http://www.nj.gov/dep/hab/photos)



# Water is contaminated by HABs? (Don't be surprised!)

Water body is contaminated with  
HABs. Can you tell just  
by looking at it? Maybe it's  
not. Check out these photos provided  
by the Department of Environmental  
Protection (see the list of Environmental  
Hotspots below)



See photos 5, 6, 7, 8.  
Department of Environmen-  
tation. [epa.html](#)

# Septic system maintenance keeps lakes clean

By Alex Ambrose, ANJEC Policy Associate

In the summer of 2019, New Jersey was facing an unprecedented problem: a huge number of harmful algal blooms (HABs), caused by a mix of pollutants and high temperatures that forced the closure of many beloved lakes. These HABs not only directly harmed the wildlife, residents and ecology of the area, they also harmed our economy, and the businesses around Lake Hopatcong felt the pain.

Back in 2006, a Princeton Hydro study showed that Jefferson Township's Lake Shawnee, relatively small at only 83 acres, was contributing up to 7 percent of the phosphorus load in Lake Hopatcong – not a small feat for such a tiny lake.

With the threat of an explosion in development, the New Jersey Department of Environmental Protection (NJDEP) and Jefferson Township wanted to run a pilot program to monitor the lake to measure the impact of a septic management program. The initiative determined that septic systems were the biggest contributor to the nonpoint source pollution threatening the water quality.

Mayor Eric Wilsusen of Jefferson Township spoke about the town's septic management program on a recent webinar, organized by the Sussex County Municipal Utilities Authority (SCMUA) -Wallkill River Watershed Management Group in partnership with the Greater

Culver Lake Watershed Conservation Foundation. He said that septic system maintenance is not only important for the environment, but also is essentially an insurance policy. Replacing a septic system can easily cost over \$30,000, but with proper maintenance, homeowners can avoid the financial burden and hassle of replacing their system.

The program, established by the Township's subsurface sewage disposal system management ordinance, is simple: every three years, a homeowner is required to hire a certified septic maintenance technician to pump out their septic system and inspect it. Jefferson's health department maintains records, sends reminders and handles the certification of each pump-out. Mayor Wilsusen said one of the most important parts of this program is education. Many new homeowners from suburban or urban areas don't understand the difference between a septic system, which is essentially a living organism that digests waste, and a sewer system.

It worked! With only regular maintenance of septic systems and no other required


*Septic systems require regular maintenance.*





programs, the phosphorus load in Lake Shawnee has been reduced by 25 percent. While no direct studies were conducted on other lakes in the area, scientists are confident that this program is having a positive impact on Lake Hopatcong by reducing pollutants.

## Thanks to ANJEC member communities

We are grateful to the thousands of volunteers serving as local officials in more than 260 municipalities and counties that are members of ANJEC. These dedicated people – from municipal and regional environmental commissions and green teams to open space committees, planning boards, governing bodies, shade tree commissions and zoning boards – dedicate their time and efforts to assure a clean environment and high quality of life in their communities throughout our State. Thank you! 


### So what can YOU do?

As all ANJEC webinars are since 2020, the recording of the septic maintenance training is available on ANJEC's Youtube page, which can be found by searching "ANJEC Views." If your town has septic systems, this video is an easy way to educate the residents of your municipality on the importance of maintaining their own systems. The New Jersey Highlands Council, which partially funded the Jefferson Township pilot program, is a great resource as well. Reach out to your municipal liaison with any questions and they may also be able to provide help.

Mayor Eric Wilsusen of Jefferson Township is President of the Lake Shawnee Club since 2007 and a Commissioner on the Lake Hopatcong Commission since 2016.

Mayor Wilsusen can be reached at [mayor@jeffersontownship.net](mailto:mayor@jeffersontownship.net), and a copy of the Subsurface Sewage Disposal System Management ordinance can be found on Jefferson Township's website at [www.jeffersontownship.net/](http://www.jeffersontownship.net/).

#### More information

ANJEC Resource Paper "Septic System Management for Clean Water" – [anjec.org/publications/](http://anjec.org/publications/) 


**Editor's note:** *As of the date of publication, HABs have been identified in Spruce Run Reservoir, and it has been closed to recreation. In 2019, more than 60 water bodies in the state were closed due to HABs. Any additional HAB outbreaks and closures will be listed on NJDEP's website.*

## Candace McKee Ashmun Memorial Fund

The ANJEC family honors the memory of our founding executive director, friend, colleague and mentor Candy Ashmun, who was our most loyal supporter and volunteer right up to her last days.

ANJEC has established the Candace McKee Ashmun Memorial Fund in her honor. Donations to the fund will be used to support the ANJEC Open Space Stewardship Grant Program, an annual program for municipal environmental commissions to carry out local stewardship projects.

Candy's support of ANJEC's mission and her unwavering belief in the power of the local environmental commission makes this program a perfect way to remember her legacy for years to come.

**To donate,** mail a check to ANJEC, PO Box 157, Mendham NJ 07945. 

# Hop to it:

## A beginner's look at NJ's Amphibian Crossing Project

By **Ethan Gilardi**, Wildlife Biologist  
with Conserve Wildlife Foundation of New Jersey

*"April showers bring May flowers,"*  
or so the saying goes...

...but what about March showers? If you ask a biologist, they may let you in on a secret: March showers bring amphibians! On early spring nights when the temperature has finally crept above freezing and the evening rain turns the dry winter earth into mud, hundreds of frogs and salamanders emerge from their burrows and journey to their breeding pools.

While this migration is sometimes only a few hundred feet long, it can be a dangerous one for these early spring breeders like the yellow spotted salamander, wood frog, and spring peeper.


While the cover of night protects them from predators, all too often amphibians find the path between their hibernacula and the vernal pools they breed in bisected by roadways. Still shaking off their winter sleep, a cold-blooded amphibian moves slowly and, due to their size and color, is virtually invisible to a driver on a dark roadway.

To keep populations from crashing due to road mortality, the New Jersey Amphibian Crossing Project, a partnership between Conserve Wildlife Foundation of New

Jersey and NJ's Endangered and Nongame Species Program, has been providing amphibian crossing guards since 2002. Each spring during peak migration nights, teams of volunteers clad in hi-vis vests and headlamps ferry amphibians across the road at rescue sites, collect data on the numbers and species seen and measure the impacts of vehicular traffic.

Over the course of the project, an estimated 14,000 creatures have been helped across the road at the Byram Township site alone! And on the first night of the 2021 crossing, they crossed 1,215 amphibians at Byram Twp., 1,132 at Stillwater, and 963 in Liberty Twp.

The habitat fragmentation caused by roads is a problem for all wildlife in New Jersey, not just amphibians. Long-term solutions are needed to connect our habitat and reduce road mortality, like under-road tunnels that can allow animals to cross safely and independently. Until then, our frogs and salamanders can rely on the wonderful Amphibian Crossing Project volunteers to keep them safe.

To learn more, visit: [conservewildlifenj.org/protecting/projects/amphibian\\_crossing/](https://conservewildlifenj.org/protecting/projects/amphibian_crossing/). 



*A wood frog while crossing Beekman Road in East Brunswick.*

Photo by Ethan Gilardi

# ANJEC hosts first statewide Earth Day Fair

By Julie Lange Groth, ANJEC Report Editor

**E**nvironmental commissions (ECs), green teams and organizations from all over New Jersey showed off their projects and shared information at ANJEC's 2021 Virtual Earth Day Celebration & Fair on April 22. There were 19 virtual festival booths and, similar to an actual outdoor venue, the nearly 100 attendees could visit them at their leisure via an online platform called Hopin. Visitors could find out about many innovative efforts by local environmentalists from Allamuchy to Alloway and lots of places in between.

There was even a main stage event featuring music by the Package Goods Orchestra, a popular South Jersey band performing favorites from several decades. The group includes Galloway Twp. EC Cochairs Steve Fiedler on drums and vocalist Barbara Fiedler. Rounding out the band's good-time sound were Bette Kaminsky doing vocals, Bill Johnson on rhythm guitar, Steve Friedland on bass guitar and David Pinto playing mandolin.

Response to the Earth Day Fair was overwhelmingly positive, with lots of lively conversation in the chatrooms. One of the exhibitors, KerriAnn Lombardi of NJ's Clean Energy Program, commented, "Wow! I love Packaged Goods Orchestra! Great song choices and fantastic sound! Such a nice touch...it really enhances the atmosphere of the entire event!"

*The Package Goods Orchestra performed on the main stage at ANJEC's virtual Earth Day Fair.*



ANJEC Executive Director Jennifer Coffey extended hearty thanks to everyone who joined in the fun to celebrate Earth Day safely. 🎵

The Package Goods Orchestra can be reached by email at [packagegoodsorchestra@yahoo.com](mailto:packagegoodsorchestra@yahoo.com) and their website is [packagegoodsorchestra.com/](http://packagegoodsorchestra.com/).

## Participating exhibitors at ANJEC's Earth Day event

ANJEC  
Clinton Township EC  
Monmouth Beach EC  
West Windsor EC  
Wyckoff Twp EC  
South Orange Green Team  
Long Branch Green Team  
Alloway Twp EC  
Lambertville EC  
NJ Composting Council  
Florham Park EC  
NJ Clean Energy Program  
Allamuchy EC  
Citizens Climate Lobby  
Princeton EC  
Believe in the Bees Project  
South Mountain Elementary School  
Essex County EC  
Maplewood Environmental Advisory Committee

# Sound solar siting is essential to meet clean energy goals

By **Tom Gilbert**, Campaign Director, ReThinkEnergy NJ and New Jersey Conservation Foundation

**A**s New Jersey advances solar and wind energy projects under a new *Energy Master Plan* to achieve 100 percent clean energy by 2050, municipalities increasingly will face proposals from developers to build solar arrays or transmission infrastructure to connect renewable energy projects to the grid. It will take sound planning and policies to ensure that clean energy infrastructure is sited in an environmentally and socially responsible manner. Several recent massive proposed solar projects that are poorly sited are examples of what's at stake.

The more than 800-acre Pilesgrove solar project in Salem County is one of two huge solar fields proposed on prime farmland that falls within Agricultural Development Areas prioritized for preservation to sustain the long-term viability of agriculture in New Jersey.<sup>1</sup> The other, approved by Harmony Township in Warren County, would cover more than 600 acres of prime farmland.

Pending legislation (S-2605), backed by Dakota Power – which is behind both projects – would create a State program to incentivize such projects and leave New Jersey's forests and high-priority farmland vulnerable to solar development.

## Not whether but where

Let's be clear about one thing: Expanding New Jersey's use of solar power and other clean sources of energy, and decreasing our reliance on dirty fossil fuels, are necessary to address the climate crisis and reduce the costly and deadly health impacts of burning fossil fuels. The question isn't *whether* to greatly expand the use of solar panels in the State, but *where*.

It doesn't make sense, especially in the nation's most densely populated state – where precious open space and farmland are under constant development pressure – to install huge arrays of solar panels on top of our best farms and forests. Ironically, Dakota Power is using that development pressure as an argument *for* these massive solar projects on prime farmland. The flimsy case they make is that solar development is better than residential development, and that the land can be returned to agriculture 30 years in the future, which seems unlikely at best.

The company is wrong to suggest that ruining prime farmland is the best way to avoid sprawl. There are two compelling



<sup>1</sup> On May 19, the Pilesgrove Township Zoning Board of Adjustment denied Dakota Solar's 800-acre commercial solar application.





*Solar fields should not be build on prime farmland.*

reasons why that makes no sense: One, more sensible locations exist for solar arrays and, two, the land Dakota Power would use for massive solar installations is prioritized for farmland preservation, the best way to retain the long-term agricultural values of the land. Anyone who drives around New Jersey knows the Garden State has plenty of parking lots, landfills, brownfields and enormous warehouse rooftops that would be ideal locations for solar panels. New Jersey absolutely could meet its energy goals without using top-quality farmland.

## Sound policy needed

The New Jersey Conservation Foundation proposes solar-siting policy that would:

- exclude our most productive soils within designated Agricultural Development Areas (ADAs) that the State and counties have prioritized for farmland preservation to sustain the long-term viability of agriculture;
- prohibit cutting down our forests, which store the equivalent of 8 percent of New Jersey's annual greenhouse gas emissions and provide clean air and water;
- prioritize existing rooftops, parking lots, brownfields, landfills, and marginal lands for solar.

New Jersey has an enviable record of preserving open space and farmland. Recognizing the importance of stopping sprawl and saving our shrinking open spaces, Gov. Christie Whitman set a goal of


preserving one million acres of open space.

To date, the State Farmland Preservation Program has partnered with counties and municipalities to preserve over 230,000 acres out of New Jersey's 720,000 acres of farmland. The State has identified the need to preserve a total of over 500,000 acres of farmland to sustain the farming industry in New Jersey. Doing so would provide far more enduring protection than

building solar panels where they aren't needed and hoping everything turns out okay decades from now.

Excluding the best soils in the ADAs would still leave over 100,000 acres of farmland for possible solar development. In combination with opportunities to develop solar on the NJ Department of Environmental Protection's "preferred" locations for solar siting – brownfields, landfills, rooftops and parking lots – this should be sufficient to meet the utility-scale solar targets envisioned under the proposed legislation.

A solar proceeding underway at the New Jersey Board of Public Utilities (NJBPU) to develop a successor to the SREC program is the appropriate forum to address the role of utility-scale solar in meeting the targets of the *Clean Energy Law*. Any legislation focusing on utility-scale solar must be consistent with the NJBPU's budget-based approach to the successor program and include sound siting restrictions to protect our forests and best farmland soils prioritized for preservation.

Local governments in New Jersey should weigh in on the need for sound State solar policies and make sure their master plans and zoning are crystal clear on where solar development should and should not go in their communities. With thoughtful planning and policies, we can expand clean solar energy without sacrificing the lands that are essential to keep the garden in the Garden State, and to our quality of life. 

Save the dates!



# ANJEC'S 48th Annual Environmental Congress

**Tuesday, October 19 – Friday, October 22**  
Mark your calendar for this fully virtual event.

**Highlights include:** Workshop sessions (morning, afternoon and evening), presentation of 2021 ANJEC environmental achievement awards, evening of entertainment and much more!

Please watch our website ([www.anjec.org](http://www.anjec.org)) and social media for more details soon!

## New website aims to reduce plastic pollution



New Jersey communities are scurrying to prepare for the implementation of the *Plastic Pollution Reduction Act*. In November plastic straws will only be available upon request in restaurants and other dining facilities and the remainder of the *Law* goes into effect in May 2022 with prohibitions on single-use plastic bags, brown paper bags except at small retail establishments, and bans on polystyrene food containers.

To help with the transition, ANJEC has launched a new website, *NJNoPlastics.org*, offering educational materials and up-to-date resources to help you and your community comply with the new law. It's loaded with FAQ's for residents, municipalities and businesses, with template resources to help with education.

This website is evolving as we work with our partners, the NJ Department of Environmental Protection and NJ Clean Communities, so be sure to check back often for updates. 💧

[www.NJNoPlastics.org](http://www.NJNoPlastics.org)

# ANJEC's 2021 Environmental Achievement Awards

To be presented at the 48th ANJEC Annual Environmental Congress

Entry Deadline: Entries must be received by September 10, 2021

Email entries to [info@anjec.org](mailto:info@anjec.org)

For categories, application form and additional details go to [www.anjec.org](http://www.anjec.org)

or call ANJEC at (973) 539-7547

ANJEC depends on our business members to help pay for the cost of printing the *ANJEC Report*. Please let them know that you saw their ad here. Remember, however, that ANJEC does not necessarily endorse any of these firms.



**BRYAN ELECTRIC**  
*We don't just charge at stations, WE INSTALL THEM TOO!*



- The only ChargePoint Partner located in NJ
- Installed over 500 Charging Stations across NJ Through our Turn-key solutions

Contact us Today: [EV@bryanelectricco.com](mailto:EV@bryanelectricco.com)  
Phone: (609) 393-8325  
[www.bryanelectricco.com](http://www.bryanelectricco.com)


 @bryan.electric.co
 
 @bryan\_electric\_



 Awarded ES&NJ State Co-Op #ES&NJ18/19-40  
 Electric Vehicle Charging Stations  
 Contract Award: 3/22/19-3/22/21



Let's talk about how **LSRPA** can assist ANJEC members with your site remediation questions.

**Call Us: (856) 291-5650**

Visit [www.lsrpa.org](http://www.lsrpa.org) for membership information, more news, events, and social media access!



**ANJEC News**  
[www.anjecnews.com](http://www.anjecnews.com)



**Richard A. McCoy  
Horticultural Services Inc.**

[www.mccoyfinegardens.com](http://www.mccoyfinegardens.com)  
**1.866.MCCOY95**

**Ecological Land Care Specialists  
Fine Gardening & Organic Lawn Care**

Sustainable Landscape Design - Ecological Property Enhancement  
Organic Lawn Care - Flea, Tick and Mosquito Treatments

#EcologyMatters   





ANJEC depends on our business members to help pay for the cost of printing the *ANJEC Report*. Please let them know that you saw their ad here. Remember, however, that ANJEC does not necessarily endorse any of these firms.

- Endangered Species Surveys
- Wildlife Inventories/Studies
- Habitat Mitigation Proposals



**Biostar Associates, Inc.**  
 ENVIRONMENTAL CONSULTANTS  
 Jill Stein Dodds  
 President

jsdodds@biostarassociates.com  
 (908) 996-3214


- Wetland Delineations
- Ecological Impact Assessments
- Photography
- Expert Testimony

**The environmentally-conscious choice for safe, responsible, and efficient concrete washout!**



**Lower Total Cost Alternative**  
**100% Compliant**  
**EPA Recommended**  
**Reclaimed Concrete is Recycled**

**roger@concretestwashoutnjny.com**  
**www.concretestwashoutnjny.com**  
**973-942-3131**




DELAWARE VALLEY  
**dvrpc**  
 REGIONAL  
 PLANNING COMMISSION

DVRPC provides **natural resource** and **open space planning services** for local governments.

[www.dvrpc.org/MuniToolsServices/EnvironmentalPlanningServices/](http://www.dvrpc.org/MuniToolsServices/EnvironmentalPlanningServices/)

CONNECT WITH US




1805 Atlantic Avenue  
 Manasquan, NJ 08736  
 P 973.776.3762 | F 732.223.3666  
[bsobol@vhb.com](mailto:bsobol@vhb.com)  
**Engineers | Scientists | Planners | Designers**  
[www.vhb.com](http://www.vhb.com)

**24/7/365 ER SERVICES NATIONWIDE**

INDUSTRIAL SERVICES  
 DECON SERVICES  
 DISPOSAL SERVICES  
 FIELD SERVICES  
 LAB PACK & ONSITE SERVICES  
 TRANSPORTATION  
 REMEDIATION SERVICES



**RICHARD FOXX 410-980-3697**  
**877-7-SPILLS | ACVENVIRO.COM**

GZA GEOENVIRONMENTAL, INC. ECOLOGICAL



**ECOLOGICAL SERVICES**

- Wetland delineation
- Flood hazard assessment
- Natural resource inventory
- Engineering and construction support

Three NJ offices, 973-774-3318  
[www.gza.com](http://www.gza.com)



Known for excellence.  
 Built on trust.



ANJEC depends on our business members to help pay for the cost of printing the *ANJEC Report*. Please let them know that you saw their ad here. Remember, however, that ANJEC does not necessarily endorse any of these firms.


**Casey & Keller, Inc.**  
 CIVIL ENGINEERS, LAND SURVEYORS,  
 PLANNERS



P.O. Box 191  
 258 Main Street  
 Millburn, NJ 07041  
 Ph 973-379-3280  
 Fx 973-379-7993

PARK DESIGN  
 GREEN ACRES SURVEYS  
 REDEVELOPMENT

[www.caseyandkeller.com](http://www.caseyandkeller.com)



**AMY GREENE**  
 ENVIRONMENTAL

a **DAVEY** company

Ecological Surveys • EIS • Habitat Restoration  
 Wetland Delineation • Permitting • GIS Mapping

4 Walter E. Foran Boulevard, Suite 209  
 Flemington, NJ 08822  
 Tel. 908-788-9676

[agemarketing@davey.com](mailto:agemarketing@davey.com) • [amygreene.com](http://amygreene.com)

**Providing Environmental and Ecological Services for Over 34 Years**

**PRINCETON HYDRO**  
 SCIENCE ENGINEERING DESIGN

*We provide integrated ecological and engineering consulting services throughout the Mid-Atlantic and New England regions with expertise in:*

- Water Resources Engineering
- Stormwater & Green Infrastructure
- Natural Resources Management
- Regulatory Compliance/Permitting
- Pond & Lake Management
- Geoscience Engineering & Lab



908-237-5660

[PrincetonHydro.com](https://www.PrincetonHydro.com)



**H|G|A**

HEYER, GRUEL & ASSOCIATES  
 COMMUNITY PLANNING CONSULTANTS

236 BROAD STREET, RED BANK, NJ 07701  
 TEL 732.741.2900 • FAX 732.741.2929  
 MAIL@HGAPA.COM • WWW.HGAPA.COM

LAND USE • URBAN DESIGN • SUSTAINABILITY  
 REDEVELOPMENT • AFFORDABLE HOUSING • OPEN SPACE

**Garden State Laboratories, Inc.**  
 BACTERIOLOGICAL & CHEMICAL TESTING

*"Quality is No Accident"*  
 – Mathew Klein, MS,  
 Founder



[info@gsllabs.com](mailto:info@gsllabs.com)  
[www.gsllabs.com](http://www.gsllabs.com)



410 Hillside Ave • Hillside, NJ 07205 • (800) 273-8901

**ECO SYSTEMS**  
 Environmental Consulting

**Thomas D'Angelo**  
 17 Indian Terrace  
 Lafayette, NJ 07848  
 973•875•8585  
 Fax: 973•875•8080



Environmental Impacts • Wetlands • [www.njeco.com](http://www.njeco.com)

- Home Energy Assessments
- Insulation & Air-Sealing
- Alternative Energy
- Energy-Efficient Heating, Cooling, Lighting & Technology



[cielpower.com](http://cielpower.com)

ANJEC depends on our business members to help pay for the cost of printing the *ANJEC Report*. Please let them know that you saw their ad here. Remember, however, that ANJEC does not necessarily endorse any of these firms.



**ENVIRONMENTAL & ENGINEERING STUDIES**

- Environmental Impact Statements
- Wetland Studies
- Floodplain Studies and Flood Control
- Stormwater Best Management Practices
- Natural Resource Inventories
- Site Evaluation Studies
- Permits
- Expert Testimony

**ENVIRONMENTAL LAND USE PLANNING**

- Community Master Plans
- Zoning and Land Development Ordinances
- Environmental Ordinances
- Site Plans & Subdivisions
- Development Feasibility Studies
- Expert Testimony

14 Upper Kingtown Road • Pittstown, NJ 08867  
Tel: 908.238.0473  
john.thonet@gmail.com  
[www.thonetassociates.com](http://www.thonetassociates.com)



**Kratzer Environmental Services**  
[www.kratzerenv.com](http://www.kratzerenv.com)

Environmental Resource Inventories  
Natural Resource Inventories  
GIS Maps  
Data Analysis & Management  
Vernal Pool Surveys

19 Hill Road Deborah J. Kratzer  
Frenchtown, NJ 08825 President  
908-996-2576 [kratzerenv@gmail.com](mailto:kratzerenv@gmail.com)

**Environmental Strategy Consulting**



TheNomadGroup.com (973) 771-3745  
[info@thenomadgroup.com](mailto:info@thenomadgroup.com)

Thanks to ANJEC Supporters

**PSEG**

Atlantic City Electric  
An Exelon Company

Church & Dwight Co., Inc.

ANJEC depends on our business members to help pay for the cost of printing the *ANJEC Report*. Please let them know that you saw their ad here. Remember, however, that ANJEC does not necessarily endorse any of these firms.



# Clean water starts with a clean earth.

Globally, our demand for natural resources will more than double our current supply. If we don't start working towards a solution now, it will be too late.

That's why SUEZ is consolidating our businesses around a single mission. By pooling our resources today, we're able to bring a global network to work on a local level. We do this so you can continue to enjoy the water and wastewater services you do today, for many years to come.

Find out more at [www.mysuezwater.com](http://www.mysuezwater.com)

 SUEZ Water North Jersey

 @SUEZWaterNJ





ANJEC depends on our business members to help pay for the cost of printing the *ANJEC Report*. Please let them know that you saw their ad here. Remember, however, that ANJEC does not necessarily endorse any of these firms.



## NEW JERSEY IS LIGHTING THE WAY TO A CLEAN ENERGY FUTURE



Largest Single Offshore  
Wind Award in the U.S.



#1 in Community Solar  
for Low/Moderate-  
Income Residents



Nation-Leading Energy  
Efficiency Standards

Learn more about financial incentives, programs, and services for New Jersey residents, business owners, and local governments to create a more energy efficient Garden State.

**Schools and municipalities  
are eligible for enhanced  
clean energy incentives.**

@NJCleanEnergy  

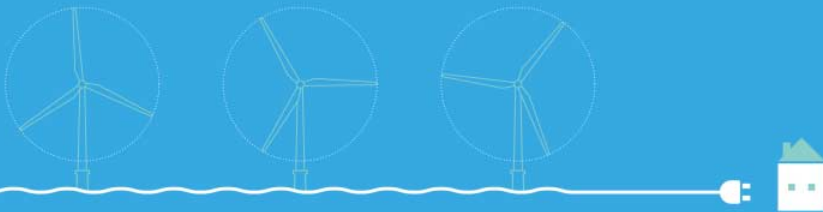
[www.NJCleanEnergy.com](http://www.NJCleanEnergy.com)



ANJEC depends on our business members to help pay for the cost of printing the *ANJEC Report*. Please let them know that you saw their ad here. Remember, however, that ANJEC does not necessarily endorse any of these firms.

# Ocean Wind

Leading the way  
toward New Jersey's  
clean energy future



**Orsted**

[oceanwind.com](http://oceanwind.com) @OrstedUS

ANJEC depends on our business members to help pay for the cost of printing the *ANJEC Report*. Please let them know that you saw their ad here. Remember, however, that ANJEC does not necessarily endorse any of these firms.



# DELIVERING A CLEAN ENERGY FUTURE

We're committed to powering a cleaner and brighter future for our customers and communities and are working to bring the next generation of energy services to southern New Jersey, while helping the state achieve its environmental goals.

[atlanticcityelectric.com](http://atlanticcityelectric.com)

 **atlantic city electric**  
An Exelon Company

An Exelon Company

© Atlantic City Electric, 2019

ANJEC depends on our business members to help pay for the cost of printing the *ANJEC Report*. Please let them know that you saw their ad here. Remember, however, that ANJEC does not necessarily endorse any of these firms.



**ENVIRONMENTAL  
STEWARDSHIP**

**COMES NATURALLY**

As stewards of the earth's most precious natural resource, we know the importance of protecting our environment. All living things need water to survive. By investing in water conservation education, innovative treatment and delivery technologies, and source water protection programs, we are working to make a difference for our communities and our world. Learn more at [newjerseyamwater.com](http://newjerseyamwater.com). Be sure to check out our tips on how to use water wisely, because every drop counts!



**NEW JERSEY  
AMERICAN WATER**

**WE KEEP LIFE FLOWING™**



Non Profit Org.  
U.S. Postage  
**PAID**  
Trenton, NJ  
Permit No. 114