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Dredging And Beach Replenishment Along The Jersey Shore

Zack Karvelas, Assistant Public Information Officer

For more than a century, dredging and beach replenishment projects have shaped the New Jersey coastline. From maintaining navigation channels to rebuilding storm-damaged beaches, these efforts have become vital to protecting coastal communities, sustaining tourism, and preserving waterfront infrastructure. In Monmouth County especially, where rivers, inlets, beaches, and parks are deeply connected to the Atlantic Ocean, dredging and beach nourishment have transformed both the physical landscape and the way residents interact with the shore.

Wills Hole emergency dredging project from April in Point Pleasant and Manasquan to improve navigation safety in the channel. Photo taken at Fisherman's Cove Conservation Area.

Dredging is the process of removing sediment, sand, or debris from the bottom of waterways such as rivers, harbors, and inlets. Beach replenishment, also called beach nourishment, involves placing sand onto eroded beaches to widen shorelines and reduce coastal erosion. In many cases, the two processes work together. Sand removed from navigation channels or offshore areas is often pumped directly onto nearby beaches in a practice widely supported as beneficial reuse of dredged material.

New Jersey was one of the first states in the country to experience large-scale coastal erosion. Because the Jersey Shore was among the earliest heavily developed coastlines in the United States, erosion problems emerged decades before many other coastal regions. During the late nineteenth and early twentieth centuries, railroad access from New York City fueled rapid development along the shore. Resorts, boardwalks, hotels, and beachfront communities expanded quickly throughout Monmouth County and beyond.

Postcard of Sea Bright Railroad Station, 1916 (*NJ State Library postcard collection*)

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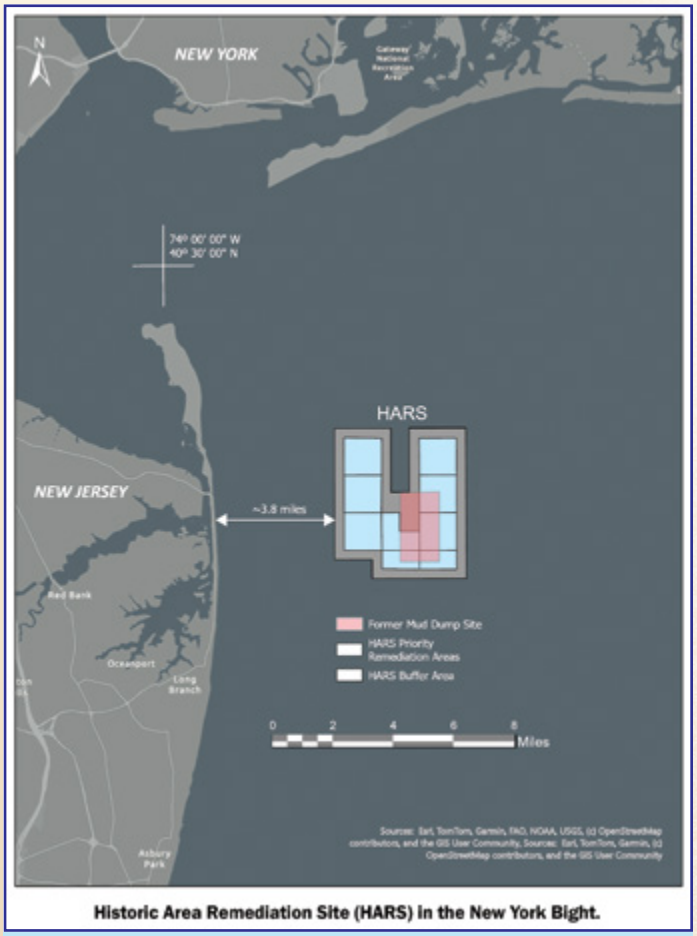
Early dredging efforts in New Jersey focused primarily on maritime commerce and navigation. Throughout the 1800s and early 1900s, channels and inlets were dredged to support the expanding fishing industries, shellfish harvesting, and commercial shipping. In Monmouth County, waterways such as the Shrewsbury River, Navesink River, Shark River, and Manasquan Inlet served as important transportation and recreational corridors and still do! Maintaining these waterways requires regular dredging because sediment naturally accumulates where rivers and tidal currents meet the ocean.

By the mid-twentieth century, dredging operations expanded alongside industrial growth in the Port of New York and New Jersey. To accommodate larger cargo vessels, shipping channels were repeatedly deepened and widened. This expansion strengthened one of the busiest port systems in the United States but also increased the need for ongoing dredging to maintain the proper navigation depth.



Historic Area Remediation Site (HARS) in the New York Bight.

Historic Area Remediation Site (HARS) in NY Bight. *(US Army Corps of Engineers)*

One of the most controversial chapters in New Jersey's dredging history was the creation of the "Mud Dump Site" off the coast near Sea Bright and Sandy Hook. For decades, dredged material from the New York and New Jersey Harbor was deposited in this offshore area. Over time, concerns grew about contaminated sediments containing industrial pollutants accumulating on the ocean floor.

Environmental concerns led to major regulatory changes. In 1997, the Mud Dump Site was officially closed and redesignated as the Historic Area Remediation Site (HARS). Instead of simply disposing of dredged material, remediation efforts shifted toward capping contaminated sediments with cleaner sand from approved dredging projects.

Today, dredging and beach replenishment are most visible through large-scale shoreline protection efforts along the Jersey Shore. Every few years, the U.S. Army Corps of Engineers dredges sand from offshore areas and pumps it onto beaches stretching from Sea Bright to Manasquan. These projects are designed to reduce coastal storm damage, strengthen dunes, and combat long-term erosion.

Beach replenishment became especially critical after Hurricane Sandy in 2012, which caused widespread flooding and severe beach erosion across New Jersey. The storm reshaped shorelines, damaged infrastructure, and triggered expanded federal and state investment in coastal resilience efforts.

Erosion hotspots on the Jersey Shore. *(image from NJ Spotlight News)*

According to the American Shore and Beach Preservation Association, New Jersey ranks first in the nation in total beach nourishment spending. Since 1936, the state has invested billions of dollars and placed hundreds of millions of cubic yards of sand along its coastline.

These projects are closely tied to New Jersey's tourism economy, which generates tens of billions of dollars annually and supports thousands of jobs along the coast. In Monmouth County, beaches, parks, marinas, and waterfront businesses depend heavily on stable shorelines and navigable waterways. Locations such as Sandy Hook, Seven Presidents Oceanfront Park, and the Shark River area attract millions of visitors each year.

However, beach replenishment projects are not permanent solutions. Many beaches require nourishment every three to five years because storms, tides, and wave action gradually remove the imported sand. Climate change is expected to accelerate this cycle, with sea levels along the New Jersey coast projected to rise significantly by mid-century. Stronger storms and rising waters threaten roads, utilities, homes, and public spaces throughout Monmouth County.

As a result, debates surrounding dredging and beach replenishment continue to grow. Supporters argue these projects are necessary to protect coastal communities, maintain recreation and tourism, and preserve billions of dollars in infrastructure. Critics question the long-term sustainability and environmental impact of continually reshaping the shoreline with expensive engineering interventions.

Seven Presidents Oceanfront Park.

Wills Hole emergency dredging project from April in Point Pleasant and Manasquan to improve navigation safety in the channel. The $1.35 million dollar project restored the channel to a safe navigable depth by dredging approximately 32,000 cubic yards. Photo taken at Fisherman's Cove Conservation Area.

Dredging boats removed a total of 14,000 cubic yards of sediment from the channel. The river is now at least four feet deep at mean low water from the Swimming River Park boat ramp to the Rt. 35 bridge. The dredged material was beneficially utilized as cover at the Monmouth County landfill in Tinton Falls.

Despite these concerns, dredging and beach replenishment remain central to New Jersey's coastal management strategy. The state's shoreline has always been shaped by both natural forces and human intervention. In Monmouth County, rivers, inlets, beaches, and parks continue to reflect this ongoing balance between environmental change, economic development, and engineered protection.

As sea levels rise and coastal populations continue to grow, the future of the Jersey Shore will depend on how effectively New Jersey adapts its shoreline management strategies. Whether through continued dredging, expanded beach nourishment, wetland restoration, or new resilience approaches, coastal engineering will remain a defining feature of life along the Jersey Shore for decades to come.

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HISTORY WITHOUT BOUNDARIES: Bringing Historic Sites Online

Reagan Miller, MA, Historic Preservation Specialist

Step beyond the boundaries of season and schedule and into the past, anytime and anywhere. The Monmouth County Park System's historic sites are becoming more accessible than ever before. Immersive virtual tours bring these remarkable structures, landscapes, and stories to life, year-round. Whether exploring from home or preparing for an in-person visit, users can navigate spaces at their own pace, uncovering layers of history through a self-guided experience that blends technology with history and preservation. These tours not only expand access but invite a deeper, more personal connection to the County's rich cultural heritage.

The irony of utilizing modern technology to showcase historic sites and objects, some of which date to the 18th century, is not lost on us. Our ancestors may have never imagined that future generations would be interested in their daily lives and thoughts. And they most certainly would have never conceived of a camera, much less a computer, that captures it all. This is progress!

Historic Preservation Specialist Reagan Miller recording footage inside the Historic Racing Stable, Thompson Park. The camera is compact and efficient. Captured footage is later edited, uploaded, and refined.

Dollhouse view of the Holmes-Hendrickson House located at Holmdel Park.

Through blending accuracy with immersion, these tours create an educational and visually compelling experience that can be experienced nearly anywhere! Immerse yourself in the history of Monmouth County through 360-degree panoramic images of several of our historic sites, including the Holmes-Hendrickson House and the Waln's Mill at Historic Walnford. Explore room by room and learn about many significant furnishings and artifacts on display.

The Holmes-Hendrickson House is currently open for in-person guided tours on Saturdays and Sundays from 12-3 p.m. through October 18.

Experience live milling demonstrations on Saturdays and Sundays through November!

Generous funding from the Friends of the Monmouth County Park System made this project possible. Our Historic Resources Division purchased a 360-degree camera and a software license through Matterport, a spatial data platform, to begin the task of digitizing several of the Park System's historic sites.

What started as an initiative to make our historic spaces more accessible developed into something much larger. We soon realized that the introduction of virtual tours would allow the Park System to break both physical and geographic barriers. Whether it is mobility challenges, time constraints, or distance, many people miss out on the chance to experience these incredible sites firsthand. Our introduction of virtual tours to the public provides a transformative solution that makes our sites inclusive for much broader audiences.

It's Not AI!

Virtual tours powered by Matterport technology offer an unparalleled way to experience historic sites in interactive and rich detail. Through high-resolution, three-dimensional imaging, visitors can closely examine architectural features, curated interiors, and carefully preserved furnishings, artifacts, and other objects as if they were standing within the space itself. This level of access not only highlights the craftsmanship of these structures and the thoughtful preservation efforts behind each site, but also removes the geographical constraints, welcoming visitors to engage with Monmouth County's history regardless of distance.

Located at the heart of Crosswicks Creek Park in Upper Freehold, explore Waln's Mill, a well-preserved example of a late 19th century gristmill design.

Navigating our virtual tours is simple!

Visit out website and head to "Virtual Tours" under the "Ecology & History" tab. Then, click on the site you wish to "visit." Use your computer mouse or finger to move left or right and up or down to begin. You may click or tap on directional arrows or hotspots to move from one room to another. Tours can be viewed in full screen mode by clicking "View Fullscreen" in the bottom right-hand corner. Access the menu to select specific rooms, view a floorplan layout, or jump to a specific location directly. Look for information icons or "tags" for more details on features found within these curated spaces.

Key Approaches

Key uses of this software within the Park System include documentation for restoration, increasing and enhancing public access, and providing educational, interactive experiences.

ENDLESS POSSIBILITIES

Preservation and Documentation: Virtual tours can create digital twins, a dynamic virtual representation of a physical object or space, that act as documentation for restoration projects, dimensionally accurate views, and capturing details. The Park System now uses this technology to capture spaces prior to their preservation and subsequent rehabilitation. Over time, we will invite the public behind the scenes to see incredible before and after views of some of our rehabilitated spaces, virtually of course!

Restoration and Archiving: These digital models act as enduring archives, capturing a moment in time that can be revisited, studied, and preserved for generations to come. Through these digital records, our preservation staff can develop plans for future restoration and interpretation.

Interactive Education: Our virtual tours include "tags" found within the digital space that allow users to learn more about the history of the site, details about artwork and furnishings, as well as links to additional education materials. Visitors may navigate through history while taking in the details captured through this technology.

Virtual Tourism and Accessibility: Historical sites managed by the Park System can now use 3D virtual tours to provide access, allowing visitors to explore sensitive, historical, and often inaccessible areas at their own pace and on their own time.

The applications of Matterport virtual tours at historic sites extend far beyond simple viewing, serving as powerful tools for preservation, education, and access. Through detailed 3D documentation, these tours create accurate digital records of structures, interiors, and artifacts, all key essential resources for long-term preservation and future restoration efforts. Historic Preservation staff may now use this tool to further their record-keeping of historic spaces and places throughout the County. Additionally, the introduction of this software to the Park System will now welcome future collaborations with local historical societies and educational institutions.

The interactive "tags" found within our virtual tours allow you to learn more about the site.

As this project continues to grow, these virtual tours are just the beginning. Additional historic sites will be brought online throughout the year, each offering new opportunities to explore Monmouth County's past in dynamic and engaging ways. Whether you are revisiting familiar places or discovering something entirely new, there will always be more to experience. Please visit our website to stay tuned as the collection expands.

Deep Cut Gardens
Home Gardener
152 Red Hill Road
Middletown, NJ 07748
GS Parkway Exit 114, to Red Hill Road
732-671-6050

A GARDENER'S PERSPECTIVE: Biodiversity And Climate Change

Kate B. Lepis, Ph.D. Horticulturist

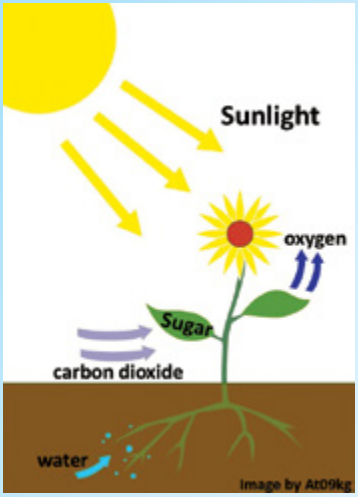
Most have heard the argument that as climates change around the globe that will negatively impact biodiversity. Species that don't have the DNA to allow for speedy migration or to adapt to the change will likely disappear altogether. What is less discussed is the relationship between loss in biodiversity and its contribution to global warming.

Climate Change in a Nutshell

Since the industrial revolution, human activities have increased the amount of heat trapping greenhouse gases in the atmosphere, most notably carbon dioxide (CO_2). This has been the result of burning fossil fuels and other organic material like wood. It has also been the result of the destruction of once productive ecosystems that remove CO_2 from the atmosphere and trap it within the life they support. These ecosystems have been replaced by buildings, parking lots, and lawn dominated landscapes largely replanted with ornamental species from other continents. These land use conversions have significantly reduced the ability of our terrain to trap carbon and act as a climate change solution. Look to the Home Gardener, Winter 21-22 issue for more on climate change, available on our website or by scanning the QR code in this article.

All Life is Carbon Based

In the 1966 *Star Trek* series, as crew members landed on a new planet the question was often asked, "Are there carbon-based life forms?" This is because all life on Earth is carbon based. Think about why we eat: to obtain energy and nutrients (i.e., building blocks of cells and tissue). Carbon (C) is considered the most important building block for life. It is not cited on the back of multivitamin bottles because most of the listed ingredients have a C structure – it is implied. Where did this C come from? With the help of plants, it ultimately came from the Earth's atmosphere.



During photosynthesis plants use the sun's energy to combine CO_2 and water (H_2O) to make the sugar glucose and the byproduct oxygen (O_2)[1].

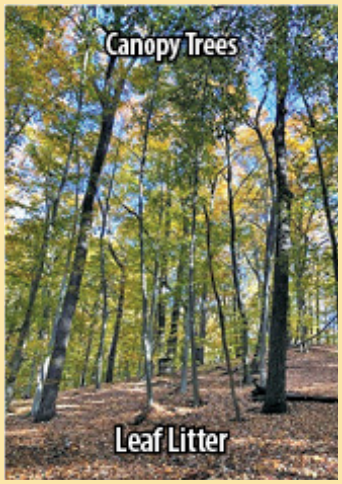
What is Biodiversity?

A way to describe the variety of life forms on Earth. It can be measured in several ways.

1) The number of species found in an ecosystem.

2) On a smaller scale it can measure the array of genes within a given species.

3) On a larger scale it can measure the structural variability provided by a given habitat. For example, a healthy forest has five layers of growth. This allows more species of birds to co-exist as each utilizes different portions of the vertical landscape without directly competing.

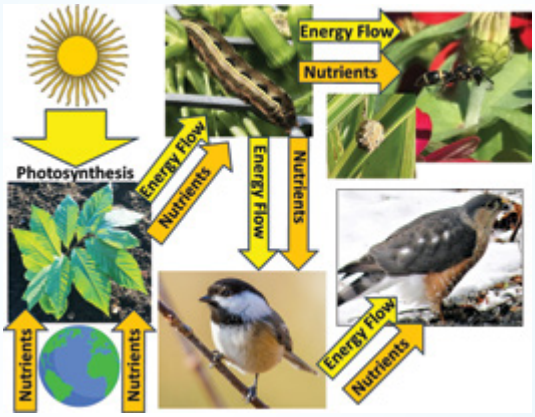


A healthy forest compared to an unhealthy forest with two layers.

Biodiversity globally and locally has been in decline for decades. Consider our shade trees (forest canopy trees). Within several generations we have lost the American chestnut (*Castanea denata*) and American elm (*Ulmus americana*). Currently, American beech (*Fagus grandifolia*), several species of ash (*Fraxinus sp.*), eastern hemlock (*Tsuga canadensis*), and several species of oak (*Quercus sp.*) are threatened with eradication. All this loss is the result of pests or diseases introduced from another continents.

Plants have a superpower: the ability to convert the sun's energy into calories – calories that other life can use to fuel their biological processes. Life on the planet is fueled by the sun. When we walk, talk, blink, or breathe, the energy that allows us to do so comes from the sun. We can't access that energy directly. We must eat photosynthesizers or eat other animals who have eaten plants. In the same sense we cannot access the C floating around in the atmosphere and use that to grow and maintain tissue, but plants can. They convert that inorganic C (CO_2) into carbohydrates, oils (ex. olive oil), and proteins – organic forms of C that other life can use as building blocks.

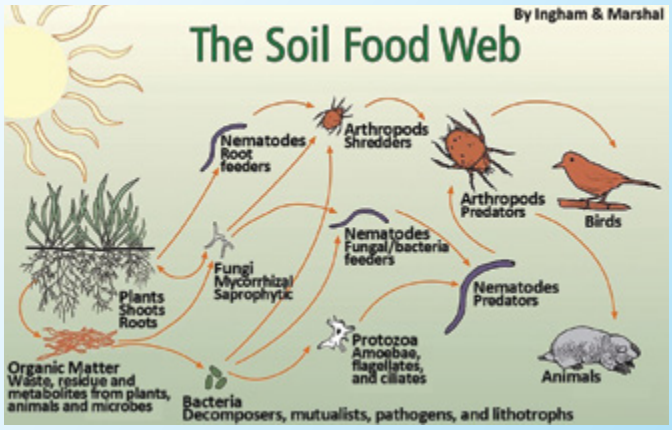
Simple Food Web: Solar energy and nutrients from Earth flow through plants (paw paw:Asimia triloba) to herbivores (caterpillar: Spodoptera ornithogalli), then to carnivores (potter wasp: Euodynerus megaera or black capped chickadee: Poecile atricapillus l), then to top predators (sharp-shinned hawk:Accipiter striatus).



Gardeners Uniquely Positioned to Fight Climate Change

The challenges society faces with climate change are complex and require action on a global scale, but the individual gardener can make a positive contribution to the solution today. Two major strategies can be employed to maximize the C storing capacity that exists on all our properties. One is to adopt organic gardening practices and the other is to plant native species.

Some say that organic gardeners don't grow plants, they grow soil[3]. At the core, organic methods cultivate living soil – teeming with microscopic organisms, invertebrates, and vertebrates. Simply put, healthy soil grows healthy plants. A robust subterranean ecosystem makes nutrients available to plants and protects them from disease. Living soil also improves the ground's ability to absorb and store water. This provides the added benefit of making our watersheds more resilient to damaging runoff and drought and soil organisms are C-based! The more life we nurture beneath our feet the more C storage we achieve underground.



Organic matter jumpstarts a vibrant soil ecosystem. Making compost and applying that to garden beds is one facet of organic gardening. One could also allow the leaves that fall annually in shrub/tree beds to remain there and decompose in place. A second aspect is foregoing the use of pesticides and harsh chemical fertilizers. Pesticides are used to control undesirable organisms, but too often kill non-targeted species. Much of the synthetic fertilizers applied to crops are not absorbed by roots. On average, 50-70% of nitrogen applied to vegetable crops washes away with stormwater runoff ending up in waterways as pollution[4]. There it decreases the amount of C-based life in aquatic systems[5]. Synthetic fertilizers also have a direct

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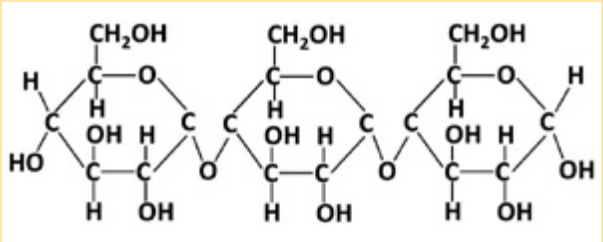
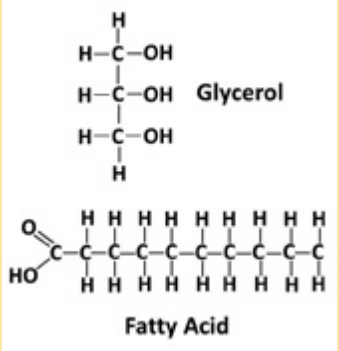
You Are What You Eat – A Whole Lot of Carbon

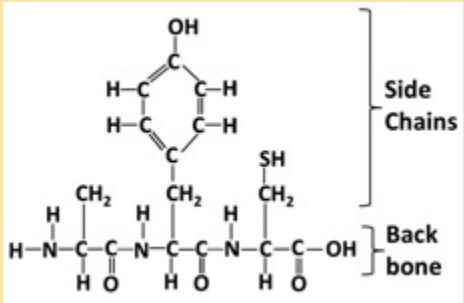
If we look at the basic chemical structure of carbohydrates, fats, and proteins – they are C-based structures. Plants store excess glucose from photosynthesis as the carbohydrate starch. When animals eat carbohydrates, the excess is converted to fats for storage. Proteins do so much for life: structural proteins hold us together, transport proteins (ex. hemoglobin) move molecules around, and enzymes facilitate virtually every biochemical reaction that takes place inside all living things. Even the genetic material that determines who we are is a molecule with a C backbone.



Carbohydrates are long chains of glucose molecules – each a ring of carbon.



Fats consist of one glycerol and three fatty acid molecules[2].



Proteins are complex chains of amino acids with a carbon-nitrogen backbone[2]. Bonds between each amino acid are shown in red.

negative impact on soil biology[6]. The energy required to manufacture these products is also significant – contributing to increased CO_2 in the atmosphere. Organic farmers have developed methods that have freed them from the need for pesticides and synthetic nutrients by using compost and cover crops[7]. It can be said that while conventional gardening solves problems by eliminating life, organic gardening solves problems by promoting life.

Replacing lawn and exotic ornamental plants with species native to this region will also increase the C storing capacity of our landscapes. Lawn often requires a lot of input in the form of fertilizer, pesticides, and water – large resource investments with very little biological return[8]. Exotic landscape plants also pale in comparison to native plants' ability to support other life[8]. When any woody plant, exotic or native, photosynthesizes much of the CO_2 taken in is assimilated into building more woody tissue.

Wood is made of the carbohydrate cellulose – another C-based molecule.

Where the two plant types diverge is the native species' ability to pass significantly more C onto other life (above ground and below). All plants have chemical defenses that prevent herbivory. It requires a geological time scale for a species to evolve the ability to break down toxins and digest particular plant tissue. Our native insects have not spent enough time with exotic plants to evolve the ability to use them as food – they lack the proper DNA. Inserting exotic plants into the local food web severs the flow of energy and nutrients (including C) onto native insect herbivores. This in turn breaks the flow of energy and nutrients that support carnivores and top predators because insect herbivores feed so many other species[8]. Simply stated: exotic plants fail to support an adequate amount of C-based life on the continents where they were introduced.

Adopting these strategies will nurture a more vigorous food web. One that supports more species and higher densities of C-based individuals. This will facilitate more C moving around the food web instead of accumulating in the atmosphere. Alone, these methods will not solve all our climate change problems. They can, however, give the individual power knowing they are contributing to a solution. "Many hands make light work." The more households that take up this endeavor the bigger impact we will have.

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Meet The BEETLES!

Stephanie Horton, Former Recreation Leader

If you scoop up a handful of soil from a New Jersey garden, chances are good that at least one beetle is living in it. Beetles (Order *Coleoptera*) are the most species-rich group of animals on Earth. Scientists have described more than 400,000 species worldwide, and estimates suggest hundreds of thousands more remain unnamed[1]. From tropical rainforests to suburban lawns in Monmouth County, beetles quietly shape ecosystems at nearly every level.

So, what makes beetles so extraordinarily successful? Part of the answer lies in their adaptations. All beetles share hardened forewings called *elytra* which are protective wing covers that shield their delicate flight wings and prevents desiccation. Other beetles evolved specialized mouthparts that allow them to occupy vastly different feeding niches. Anatomical differences in development illustrate how beetles diversified alongside flowering plants revealing a co-evolutionary history that helped drive their global distribution[1]. Their relationship to flowering plants isn't just beneficial to the beetles, some beetles aid in the reproduction of plant species.

The bull-headed dung beetle (*Onthophagus taurus*) is native to the Mediterranean but has been introduced here in New Jersey specifically in agricultural fields.These are the strongest insects in the world – capable of hauling or lifting 1,141 times their body weight!

When we think of pollinators, bees usually come to mind. But beetles were pollinating plants millions of years before bees evolved. This ancient pollination system is called *cantharophily*, and it still exists today. In North America, magnolias (including species planted ornamentally throughout New Jersey) are classic beetle-pollinated plants. Their thick, sturdy petals evolved to withstand the chewing of visiting beetles. Flower beetles, such as *Euphoria inda* (the bumble flower beetle) which are found in New Jersey, crawl within magnolia blooms feeding on pollen and inadvertently transferring it between flowers.

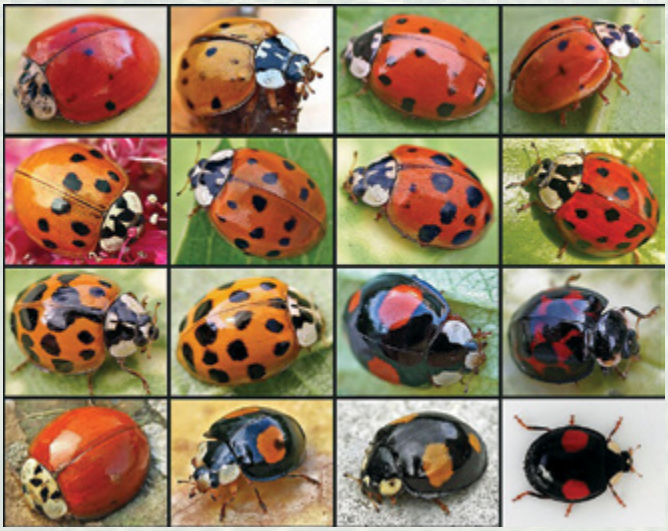
In these systems, beetles are not tidy nectar sippers. They chew, crawl, and linger, but they pollinate, nonetheless. This challenges our neat distinction between "destructive" and "beneficial" insects.

A goldenrod soldier beetle (*Chauliognathus pensylvanicus*) gathers pollen on its mouthparts as it forages on pollen and nectar from a purple coneflower (*Echinacea purpurea*).

Some may be pollinators, but what other benefits can beetles bring? Within New Jersey's agricultural soils, ground beetles (in the family *Carabidae*) act as nocturnal pest control. Species such as the native *Harpalus pensylvanicus* and the non-native *Pterostichus melanarius* are common in farm fields throughout the Mid-Atlantic region. They feed on cutworms, caterpillars, and weed seeds, providing measurable biological control services. Because their diversity declines in heavily disturbed or pesticide-intensive systems, ecologists often use ground beetle communities as indicators of sustainable farming practices[1].

Then there are the familiar "ladybugs", more accurately called lady beetles (family *Coccinellidae*). Native species such as the nine-spotted lady beetle (*Coccinella novemnotata*) have historically played a major role in aphid control across the Northeast.

However, many of the "ladybugs" now seen in New Jersey homes are actually the *Asian lady beetle* (*Harmonia axyridis*), introduced for biological control. They are not a different kind of insect (they are still lady beetles), but they are a non-native species. Compared to most native species, *Harmonia axyridis* is more aggressive, more likely to overwinter inside houses, and may outcompete native lady beetles for resources. So, when people say, "These aren't ladybugs," they're partly reacting to behavior, not biology. The Asian lady beetle is a lady beetle, just not a native one. And like our native species, it still consumes large numbers of aphids[4].



The Asian lady beetle is one of the most variable lady beetle species in the world, with an exceptionally wide range of color forms.

Of course, not all beetle impacts feel beneficial.

The Japanese beetle (*Popillia japonica*), first detected in the U.S. in 1916, feeds on more than 300 plant species. In Central New Jersey, it commonly damages roses, grapes, linden trees, and turfgrass. The larvae (white grubs) feed on grass roots, sometimes causing brown patches in lawns[5]. The key point is scale. A native leaf beetle feeding modestly within a balanced ecosystem rarely causes economic alarm. But when a non-native species arrives without its natural predators, population explosions can shift ecological balance and agricultural outcomes.

Japanese beetles (*Popillia japonica*) tend to forage on plant material in between a leaf's veins, leaving the plant's foliage skeletonized.

In daily life, our encounters with beetles are often reactive. We notice them when they chew leaves, cluster on siding, or crawl across kitchen windowsills. Rarely do we notice the ground beetle hunting pests beneath mulch, or the flower beetle pollinating a magnolia bloom in spring. Beetles decompose wood, recycle nutrients, aerate soil, suppress pests, pollinate ancient plant lineages, and provide food for birds and amphibians. Their ecological roles are as diverse as their forms. The question for us as gardeners, homeowners, and residents of Central New Jersey is not whether beetles matter. They clearly do. The question is whether our perception of them is overly narrow.

If we see beetles only as nuisances, we miss the deeper story: that this extraordinarily diverse group of insects underpins many of the ecological systems that make our farms productive and our landscapes vibrant. The next time you see a beetle it may be worth pausing before deciding whether it's a villain or an ally.

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Nature Corner

SUMMER: A Season At Its Peak

Veronica Puza, Park Naturalist

Just a few months ago, I admitted that winter has never been my favorite season. The cold, the quiet, and the shortened days often leave me longing for something more. And now, as summer settles in with its warmth and abundance, it's easy to remember what I was missing. Yet just as winter plays a vital role in the rhythm of the natural world, so too does summer, reaching its peak at the summer solstice, the longest day of the year.

Each June, the solstice marks a moment that is both a celebration and a turning point. It is the height of light, when the sun lingers longest in the sky, casting extended hours of warmth across the landscape. But it is also a subtle shift, because from this point forward, the days will begin to grow shorter again, even if we hardly notice the change at first.

Summer Landscape

The Longest Day of the Year

The summer solstice occurs each year around June 20th or 21st and marks the longest day and shortest night of the year in the Northern Hemisphere. On this day, the sun reaches its highest point in the sky and follows its longest path from sunrise to sunset, giving us those extended daylight hours that define early summer.

This happens because the Earth is tilted on its axis—about 23.5 degrees—as it orbits the sun. During the solstice, the Northern Hemisphere is tilted most directly toward the sun, allowing sunlight to strike it more directly and for a longer portion of the day. The result is not just more daylight, but a different quality of light—one that feels stronger, warmer, and more persistent.

Celebrating the Longest Day

Long before the summer solstice could be explained by astronomy, people recognized its significance simply by watching the sky. Across cultures and continents, the longest day of the year became a time to gather, celebrate, and mark the height of the sun's power.

In parts of northern Europe, traditions of Midsummer have been celebrated for centuries. In countries like Sweden and Finland, people welcome the solstice with festivals that include dancing, music, and the raising of maypoles, often surrounded by flowers and greenery that reflect the fullness of the season. Bonfires are also a common feature in many of these celebrations, symbolizing light and warmth at their peak.

In England, the ancient stone circle of Stonehenge continues to draw visitors who gather to watch the sunrise align with the monument's stones on the morning of the solstice. Though its exact original purpose is still debated, its connection to the movement of the sun is unmistakable.

Sunrise at Stonehenge on the Summer Solstice

In the United States, the summer solstice often passes without large-scale tradition, but that doesn't mean it goes unnoticed. Instead, it tends to be reflected in the way people naturally respond to the season—lingering outside later in the evening, gathering with friends and family, or taking advantage of the extra daylight for walks, time in the yard, or visits to local parks. Fireflies begin to flicker at dusk, warm air settles in after sunset, and the day feels like it stretches just a little longer than expected.

Fireflies

While these moments may not always be recognized as part of a formal celebration, they reflect something deeply familiar: an instinct to enjoy and make use of the light while it lasts.

Life in the Longest Days

By the time the summer solstice arrives, the natural world is already in motion everywhere you look. What may feel like a single, long day to us is, for many plants and animals, part of a much larger seasonal rhythm driven by light.

Across the landscape, plants are making the most of the long days of early summer. Trees such as black cherry and tulip poplar are now fully leafed out, their canopies working at full capacity to capture sunlight and fuel growth. In open fields and along trail edges, species like goldenrod, milkweed, and common yarrow continue to expand, forming dense patches of vegetation that support a wide range of insects and other wildlife. This surge of plant growth, driven by extended daylight, forms the foundation for the burst of activity seen throughout the rest of the ecosystem.

That activity becomes especially noticeable in species like the black swallowtail butterfly. Often seen drifting through gardens and fields, these butterflies rely on plants in the carrot family, including parsley, dill, and golden alexanders, as host plants for their caterpillars. The timing of their life cycle is closely tied to the season, ensuring that when eggs hatch, the right plants are available to support the next generation.

Black Swallowtail Caterpillar

Black Swallowtail Butterfly

Bird activity reflects this abundance as well. Over open water and nearby coastlines, ospreys can often be seen circling or diving, taking advantage of long daylight hours to hunt for fish and feed their young. For them, this stretch of summer is a critical window as more daylight means more opportunities to hunt, and greater success in raising their chicks.

Osprey

The timing of these events—leafing trees, active pollinators, nesting birds—is part of what scientists call phenology, the study of how seasonal changes influence the life cycles of plants and animals. It's a way of understanding nature not just by what is present, but by when it happens.

And yet, despite all this activity, the solstice marks a subtle shift. From this point forward, daylight begins to decrease, gradually influencing flowering cycles, insect activity, and animal behavior across the landscape. What feels like a season at its fullest is also the beginning of its transition.

Sunset at Manasquan Reservoir

Just as winter's quiet has its purpose, so too does summer's abundance. The long days surrounding the solstice offer more than just extra daylight—they create conditions that allow so much life to grow, feed, and reproduce in a relatively short window of time.

As the season continues, that abundance will begin to shift slowly and almost unnoticed at first. But for now, this is a moment worth paying attention to. Whether it's the movement of pollinators through a field, the call of a young bird, or the flicker of fireflies at dusk, the signs of the season are everywhere.

Taking the time to notice them offers a deeper connection to the natural world—and a reminder that even the longest day is just one part of a much larger cycle.

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Photo by Derek Ramsey https://commons.wikimedia.org/wiki/File:Black_Swallowtail_Papilio_polyxenes_Closeup.jpg

GREEN HERITAGE

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A Blast From the Past

The sights, sounds, and smells of rural Monmouth County in the 1890s have been re-created on nine acres at Historic Longstreet Farm in Holmdel Park, Holmdel. Interpreters in period dress show both daily and seasonal agricultural and domestic activities. This site is dedicated to being an accurate historic representation of a working farm in the 1890.

Longstreet Farm is open daily year-round from 10 a.m.-4 p.m. Visitors may enter at their leisure, free of charge. From Memorial Day through Labor Day the farm is open 9 a.m.-5 p.m. *Pets are not allowed within the farm.*

Longstreet Farmhouse-1890

Longstreet Farmhouse extension-Jan 2003

Longstreet Farmhouse Restoration-1981

Originally built as a two-room Dutch cottage prior to 1775, the house was expanded and redesigned over time. In the 1790s, the large two-story main section was constructed. A larger kitchen and the present porch were added around 1840. The site is maintained as a living historical farm with the purpose of interpreting the agricultural activities in Monmouth County's rural past.

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