



MONMOUTH COUNTY PARK SYSTEM GREEN HERITAGE

The Newsletter of Monmouth County's Open Space, Parks & Recreation Agency

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SHRUBS WE LOVE

Lisa Bonelli, Assistant Public Information Officer

You've probably seen the eastern redbud many times. This large woody shrub (or small tree) is common in our local landscapes because it blooms with bright, pinkish-purple flowers in early May. The exact flower color is actually kind of hard to nail down and while they only last a short while, this bloom stands out in the spring landscape. This mature specimen can be found along the banks of Crosswicks Creek at Historic Walnford in Upper Freehold.



Even more interesting than the color is where the flowers bloom on this plant. They sprout directly from the trunk and along the branches, instead of just on the tips. This close-up of an eastern redbud in bloom reminds us there are other shrubs worth noting throughout the parks.



Wickatunk's Wall of Azalea

This relatively new parcel of park land within Wickatunk Recreation Area (acquired 2017), on Harbor Road in Marlboro just behind the former airport, is now called Spring Valley. It serves as a Park System outdoor wedding venue in partnership with Jacques Catering. But before that, it was Peppadew Fresh Vineyard and Winery, a flower farm named for growing the peppadew—a cultivated pepper from South Africa—as well as azaleas, flowering quince, hydrangea, pussy willow and wine grapes. Some of these flower stock remnants have been incorporated into the landscape. Pictured left, a colorful row or "wall" of different color azaleas bloom in mid-May.

Stunning Spirea at Huber Woods Park

When a plant is put in just the right spot it thrives. Clearly, this bridal wreath (Vanhouette spirea) must be overjoyed by its location; just look at the incredible complete bloom last May (right). Located alongside the Environmental Center, let's see if it does the same this year.



Strange Smokebush at Thompson Park

The estate lawn of the Visitor Center in Lincroft is already a feast for the eyes with a variety of trees and shrubs (including mature lilac and quince). But if shrubs with uncommon features are your interest, this one is a real show-stopper. Located along the entrance walkway, people literally stop in their tracks when it blooms in June, because of its striking wispy, pinkish-white tufts (left). The leaf shape is also fun to look at.

About Azaleas vs. Rhododendrons

Azaleas are a subcategory of rhododendron, so all azaleas are rhododendrons—but not vice-versa. In very general terms, for those who wish to distinguish: azaleas are mostly deciduous with smaller leaves and flowers that bloom all over, covering the entire bush in bright color. Rhododendrons are mostly evergreen and tend to be larger with bigger leaves and flowers that seem to bloom in clumps.



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Trailside Treats at Huber & Hartshorne Woods

- **Pinxster Bloom Azalea.** This native shrub blooms trailside in the forest edges of Huber Woods Park (on Many Log Run) and in Hartshorne Woods Park (Candlestick and Laurel Ridge Trails), in late April/early May. A close-up view of the flower detail should illustrate why spotting this plant is such a delight.



Hartshorne Woods Park



Huber Woods Park

- **Mountain Laurel.** When trail users ask where to see spring sights, we usually recommend searching out this shrub. The large, showy plant with shiny green leaves and unusual geometric, pinkish-white blooms grows in abundance along the Laurel Ridge and Candlestick Trails in Hartshorne Woods Park. It also stands out along the Many Log Run Trail in Huber Woods Park. Look for it in mid-May-early June. Note that some varieties start with very pink blooms that lighten as they mature.



Hartshorne Woods Park



Holmdel Park

Shrubs Make Beautiful Photo Subjects

Landing somewhere between the remoteness of a tree and the colorful intimacy of a flower, a shrub in bloom can be the perfect photo subject. Take this buttonbush at Holmdel Park for instance, with its striking white flower balls. Also a friendly host to butterflies and bees, this photo has graced the cover of the Parks Guide now for two years running.



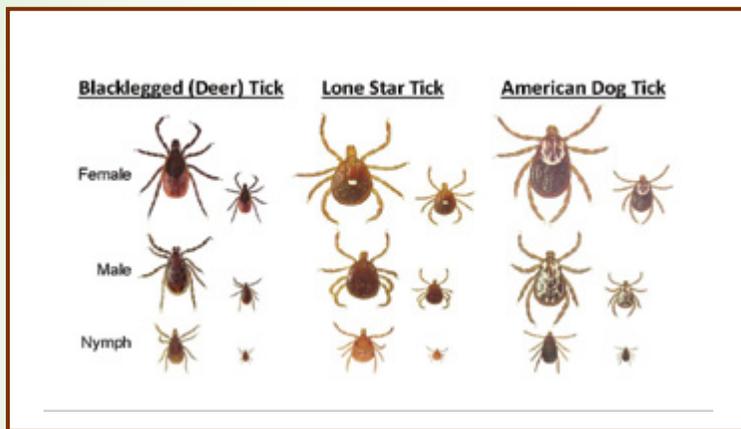
Deep Cut Gardens

Editor's Choice: This particular image of a lacecap hydrangea is a personal favorite, ranking among the "Top 10 Most Beautiful Nature Images" from our entire catalog of thousands. It can be found in glorious bloom each June at Deep Cut Gardens.

Ticks Of Monmouth County (2006-2016)

Scientists from the Monmouth County Mosquito Control Division analyzed local tick submissions from their identification and testing service for 11 years from 2006-2016. They published their findings in the journal *PLoS ONE* in 2019. Main findings include:

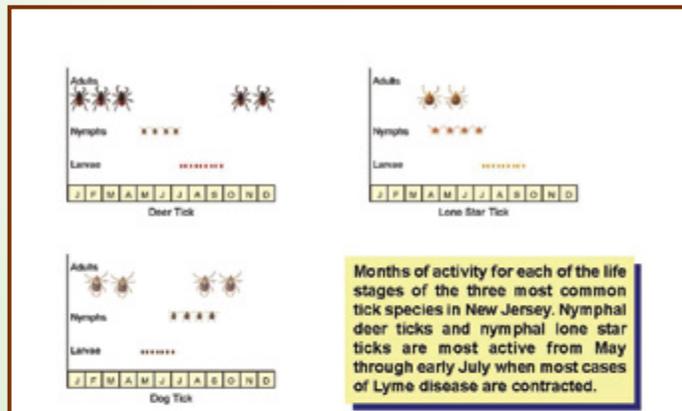
- Lone star and American dog tick numbers increased over the study period, while blacklegged (deer) tick numbers remained steady.
 - Lone star ticks increased dramatically and now make up almost half of tick submissions (48.1%).
- The greatest number of ticks submitted were removed from children under 10 (40.8%) and adults 50 and over (23.8%).
- Significantly more people (43.2%) reported acquiring ticks at their residence than in a park/natural setting (17.9%).
 - This was particularly pronounced for residents 60 and older, where 72.7% of the ticks were acquired at home.
- Where the tick attaches on the body differed by species. Greater numbers of American dog ticks (adult) were removed from the head, while more lone star ticks (adult and nymph) were removed from the lower body. Blacklegged (deer) ticks were more evenly distributed across the body.



KEY POINTS TO REMEMBER

- ◊ Prompt removal of attached ticks greatly reduces the likelihood of disease transmission.
- ◊ While only the black-legged tick can transmit Lyme disease, all three ticks can transmit disease.
- ◊ See your health care provider if you develop symptoms (such as fever, rash, or muscle aches) after any tick bite.
- ◊ Personal precautions (wearing pants, using repellents, etc.) provide the best protection against tick-borne disease.

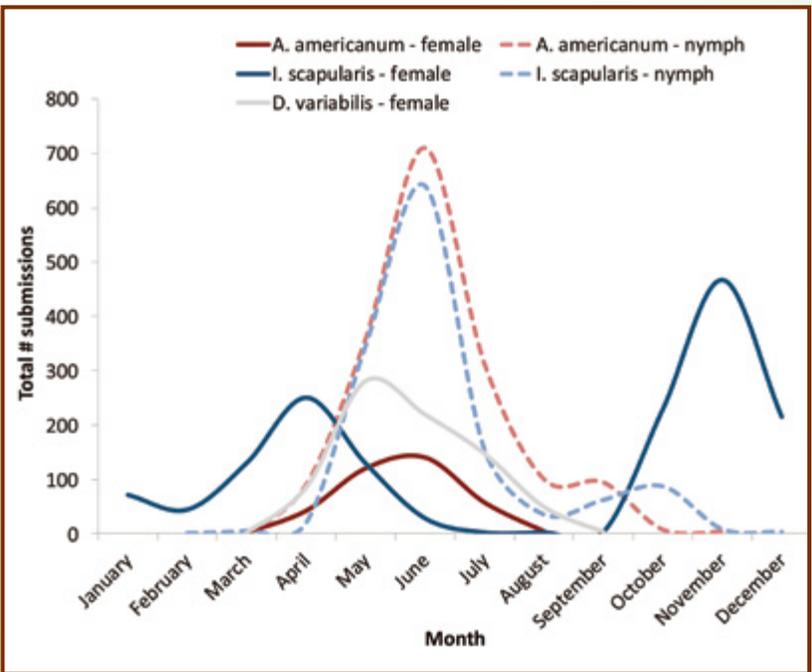
MONMOUTH COUNTY MOSQUITO CONTROL DIVISION
 1901 Wayside Rd., Tinton Falls NJ 07724
 Phone: 732-542-3630 Email: ticks@co.monmouth.nj.us
 For more information visit: visitmonmouth.com/mosquito



Months of activity for each of the life stages of the three most common tick species in New Jersey. Nymphal deer ticks and nymphal lone star ticks are most active from May through early July when most cases of Lyme disease are contracted.

KEY POINTS TO REMEMBER:

- Female and nymphal ticks feed and can transmit diseases.
- Male ticks do not feed and do not transmit diseases.
- Removing a deer tick within 24 hours greatly reduces the likelihood of Lyme disease transmission.
- Not all ticks are infected. On average 20-40% of deer ticks are able to transmit diseases.
- Personal precautions (wearing pants, using repellents, etc.) provide the best protection from contracting tick-borne diseases.
- Attached ticks can be saved for later identification.



Read the complete study: Jordan, RA, Egzi A (2019). The growing importance of lone star ticks in a Lyme Disease endemic county: Passive tick surveillance in Monmouth County, NJ 2006-2016. *PLoS ONE* 14(2): e0211778. <https://doi.org/10.1371/journal.pone.0211778>



Funded, in part, under Cooperative Agreement (U01DC0020607-01) from the Centers for Disease Control and Prevention



2021 COUNTY GRANT PROGRAM FUNDS MORE NEIGHBORHOOD PARKS

Paul Gleitz, P.P., A.I.C.P, Principal Park Planner

The Monmouth County Board of County Commissioners has awarded another \$2.8 million in grant funds to 19 municipalities through the 2021 round of the Monmouth County Open Space Grant Program (MCOSSG). The program continues to be a successful way for the county to support local park and recreation projects.

This program provides vital funding so towns can meet their local open space, recreation and historic conservation goals. Many of these projects would not be possible without this assistance. An additional round of NJDEP Green Acres grants for park development projects in 2021 encouraged many towns to “think big” when proposing new projects, hoping to receive funding from the state and the county.

Congratulations 2021 Grant Fund Receipts

Millstone	Clarksburg Cultural Center, Phase III	\$150,000
Colts Neck	Laird Road Rec Center and Five Points Park Improvements	\$140,000
Wall	Pickleball Courts at Camp Evans	\$134,000
Eatontown	Nicodemus Park Splash Pad Project	\$48,000
Fair Haven	Spagnuolo Property Acquisition	\$250,000
Bradley Beach	ADA Park Improvements at Lake Terrace Park	\$70,000
Oceanport	Pickleball Court and Community Garden Project	\$53,000
Highlands	Snug Harbor Skate Park Project	\$200,000
Manasquan	Improvements to Curtis Park, Phase II	\$150,000
Keyport	2021 Park Improvement Project	\$140,000
Middletown	McMahon Park Improvements Project	\$200,000
Aberdeen	Cambridge Park Improvements	\$150,000
Monmouth Beach	Griffin Park Improvements	\$100,000
Neptune City	Improvements to Adams Field - Phase II	\$200,000
Atlantic Highlands	2022 Open Space Acquisition	\$250,000
Hazlet	North Hazlet Community Park	\$250,000
Holmdel	Pedestrian & Bikeway Plan, Phase 1	\$114,000
Red Bank	Various Park Improvements, Phase III	\$100,000
Freehold	Various Park Improvements	\$117,000

“As residents continue to get much needed fresh air and exercise in local parks during these difficult times, Monmouth County is proud to continue supporting municipalities to help maintain these neighborhoods as great places to live and play with our families.”

–County Commissioner Director Thomas A. Arnone

Since the inception of the program in 2003, 50 of Monmouth County’s 53 municipalities have been awarded more than \$38 million for local parks and acquisition projects. As of 2021, 275 grants have been awarded with 213 of those grants going toward park development projects and 62 of the grant awards going toward open space acquisition projects.

Notable Projects Completed Last Year

Holmdel – Phillips Park. In 2017, Holmdel received \$43,000 to resurface two existing basketball courts with a polypropylene tile system and replace the backboards and rims.



“I’m very impressed with the hard work and creativity of all of the grant applications received this year. It is no easy task deciding which of the many great projects get funded each year. We look forward to continuing this great program and seeing the completed projects being enjoyed by everyone.”

–County Commissioner Ross Licitra

Keyport – Veterans Park/Benjamin Terry Park. In 2013, Keyport received \$101,000 to construct a gazebo, a new parking lot and to install picnic tables, benches, bike racks, and landscape improvements to this popular waterfront park.



Union Beach – Scholer Park, Phase VII. In 2016, a grant of \$66,000 was awarded to expand an existing parking lot by 20 spaces and install shade trees.

Red Bank – Marine Park. Red Bank received \$188,000 in 2013 for Post-Hurricane Sandy improvements, including relocating the restroom building out of the floodway, sidewalk replacement, LED outdoor lighting, fishing pier light and fixtures, benches and picnic tables, utility power pedestals at the marina, recycling and trash receptacles, and related water and electrical service improvements.



Manasquan – Mallard Park. Grants of \$175,000 (2014) and \$100,000 (2017), scaled back to \$101,000 for both phases, were awarded to rehabilitate two baseball diamond clay infields and outfield sod, and add new backstops, bases and players' benches. Improvements also included landscaping, field irrigation, and water service (with water fountains).



Rumson – Piping Rock Park. In 2014-15, Rumson received two grant awards totaling \$387,000 for a two-phase project to redevelop the park with a natural turf multi-purpose field, benches, bleachers, walkways, fencing, and relocation of the municipal 9/11 Memorial and flagpole, as well as a softball/baseball field with backstop/dugouts, benches/bleachers, a new parking lot and a new playground with a tot lot and rubberized safety surface.



Keansburg – Baywalk East. Keansburg was granted \$73,000 in 2016 to replace wood deck boards, steps and handrails, and improve entrance ramps to be ADA compliant for this very popular site.



Tinton Falls – Walz Property. This 2018 grant of \$250,000 helped purchase the 59.47-acre Walz Farm in the southern section of the Borough, just north of Shark River Road.



Hazlet – Natco Lake Trail Improvements. In 2011, Hazlet was initially awarded \$200,000 and the project scope was reduced to \$48,000 for the removal of fallen trees, 70 new trail markers, installation of wooden access gates at four trail heads to prevent ATVs/motorized vehicle access, a series of trail maps at trail heads, and five nature identification signs.

Little Silver – Challenger Fields. Little Silver was awarded \$190,000 in 2017 to purchase the property at 14 Park Avenue to provide access to the ball fields, and \$125,000 in 2018 for site improvements. Proposed improvements include a parking area with signage, curbing and sidewalks for ADA accessibility, a bathroom and storage facility (with lighting and utility service connection), planting of eight shade trees, and topsoil/seeding the site.



Middletown – Croydon Hall Turf Fields and Playground – Two grants were awarded, \$201,000 in 2015 and \$150,000 in 2017, to construct a multi-sport synthetic field with bleachers, benches, two football/soccer goals and scoreboard, plus walkways, a retaining wall, sports lighting and electric service, and landscape plantings. The project also included a universally accessible playground with swings, a workout station with engineered wood fiber mulch safety surface, ADA accessible walkways and tables, benches and a central landscape strip.



How Native Species Benefit Our Landscape

Horticulturist Kate B. Lepis, Ph.D.

There have been many articles written about the benefits of choosing native plants for your landscape over the non-native Asian and European species so common in our markets. Even so, it is a legitimate question to ask: “What difference does it make?” The exotic plants we commonly buy have a multitude of desirable traits – that’s why we bought them. But it is also true that many species from other continents do not function in North America in a significant ecological way, they simply do not support enough life.

What does it mean to function ecologically? You can think of an ecosystem as an engine and the species that exist within as the engine parts. This engine does not run on gasoline; it runs on the interactions between species as they go about their daily quest to stay alive and reproduce. Exotic species did not evolve with the native community and therefore do not interact with each other to the same degree that natives do. Adding an exotic species to an ecosystem can be like adding a dummy part to an engine that does not contribute to it running.



Coastal Azalea



Sweet Azalea



Flame Azalea

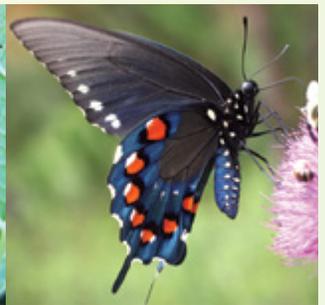
The azalea commonly planted is Asian in origin. Consider planting these native azaleas instead: coastal (*Rhododendron atlanticum*), sweet (*R. arborescens*; Wikimedia⁷), or flame (*R. calendulaceum*; Wikimedia⁷).

Native vs. Exotic Plants in the Landscape

Species that are native to a particular area have been living and evolving together for thousands, if not millions of years. The gradual evolution that has taken place creates a balance in the system. Conversely, exotic species have been abruptly added to an ecosystem. They lack the intimate relationships that occur between species that have coexisted for countless generations. Since they did not evolve with the other members of the community, very few animals can rely on these plants for food. Here’s why.

Plants have evolved an arsenal of chemical weapons to avoid being eaten. It is no small feat to inherit the ability to munch on food that others find poisonous. Native plant eaters have simply not spent enough time with our exotic landscape plants to evolve the ability to neutralize the toxins within their leaves.¹ This is one big reason why they are popular in our gardens—they tend to be problem free.

The unpalatable nature of exotic plants would not be an ecological issue if these species stayed within our gardens, or if our region was not dominated by human landscapes. Unfortunately, neither is the case. Wild areas throughout our state have been converted to human use and those that remain have largely been degraded by exotic invasive plants that originated as garden escapees.



Dutchman’s pipe (*Aristolochia macrophylla*), planted on the All-American Garden entrance trellis, is the only species used by the pipevine swallowtail caterpillar (*Battus philenor*). Butterfly photo by John Flannery; Wikimedia.⁷ Caterpillar photo by Donna Baginsky.



The flowering dogwood (*Cornus florida*) and red bud (*Cercis canadensis*), pictured center, create a stunning spring display and support the caterpillars of one of our largest moths, cecropia (left, *Hyalophora cecropia*; photo by Marvin Smith; Wikimedia⁷) and the more subtle butterfly, Henry’s elfin (right, *Callophrys henrici*; caterpillar photo by Audre Huff; Flickr; butterfly photo by Judy Gallagher; Flickr).

How the Ecosystem “Engine” Works

Plants are like the engine of a terrestrial ecosystem. They provide the structure that creates habitat for other life. They also act as gatekeepers of the solar energy that fuels all life and the nutritional building blocks needed to grow and maintain bodily tissue.

Animals cannot directly absorb the sun’s energy and use that to make hearts beat or legs run. They also cannot directly absorb the nutrients that originate from the Earth’s crust. Think about what would happen if you consumed tiny pebbles as a source of calcium. If small enough, they could be swallowed without complications, but would pass through without lending any benefit. Gratefully, plants can access these vital inorganic resources and convert them into foods that can be used by other life.

Another crucial part of the eco-engine are plant eaters. What probably first comes to mind are deer and rabbits, but insect herbivores are probably the most crucial group of herbivores because they are so good at passing the energy and nutrients harnessed by plants onto other life. Insects are a critical part of the ecosystem because they pollinate plants and feed so much life.

Birds Eat Insects That Eat Native Plants

In particular, the ability of birds to thrive is intimately intertwined with the insect world. Virtually all (96%) of North American terrestrial bird species feed insects to their young.¹ Most birds feed their young soft-bodied insects like caterpillars. They are easy to digest and highly nutritious. One pair of black-capped chickadees harvests 6,000-9,000 caterpillars to raise one clutch to the point they can leave the nest.¹



Black-capped chickadee (Poecile atricapillus); Photo by Minette Layne: Wikimedia⁷

We can have beautiful yards filled with ample nesting sites and bird feeders galore, but if the vast majority of plants are exotic then we’ve broken the food chain that feeds baby birds to maturity. We are simply not making the most of our yards’ potential to support life. Landscaping in a way that encourages caterpillars will not only promote our favorite pollinators, but provide for more avian young. Most caterpillars are host-specific and require native plants to thrive.



Sugar maples (Acer saccharum) not only provide cool shade and striking fall color, but feed caterpillars of the rosy maple moth (Dryocampa rubicunda; moth photo by Christina Butler: Flickr; caterpillar photo by A. Reago & C. McClarren:Wikimedia⁷).

Like so many of the planet’s species, our beautiful birds are in trouble. In North America we’ve lost 2.9 billion birds since 1970.² With 62% of the plant species in our state non-native, birds need better habitat.³

Strong Ecosystems Help Offset Development & Protect Resources

The NJDEP categorizes the biggest threat to the health of our environment as the conversion of wild or agricultural lands to urban and suburban uses.⁴ Development not only reduces the total acreage of open space but divides once-large parcels into small fragments. This fragmentation makes wild lands more vulnerable to degradation and small tracts are unsuitable habitat for many species. As wild parcels become smaller and smaller, their ability to contribute to a well-running eco-engine diminishes. Home gardeners can ameliorate these problems by planting native and allowing our yards to function as habitat.



Two winter forest tracts in Middletown, NJ. Left is a healthy woodland, while on the right is a degraded tract overrun by exotic invasive vines.

A healthy ecosystem is more resilient to environmental stress and better at providing needed resources such as freshwater, clean air, and fertile soil. Consider, for example, how rainwater is cleansed as it moves slowly through a healthy system. Trees, shrubs and herbaceous plants slow down the falling water, allowing it to seep into the soil where it is filtered by the root/soil matrix. This groundwater replenishes underlying aquifers and moves gradually to rivers and reservoirs.

Rainwater in a dismantled ecosystem tends to fall on impervious surfaces like rooftops and roads, and moves quickly as runoff, picking up pollutants and contributing to flashfloods.

The Power of Home Gardening: Connecting Here & There

Our yards are just as much a part of the ecosystem as any of the parks we visit. Given widespread human land use, there is only so much that islands of preserved open space can achieve ecologically in a sea of development. It's important that we promote a biodiversity on our property, so our landscapes can be part of the solution.

The average East Coast homeowner maintains 90% of their property as lawn.⁵ Lawn is practically a biological desert and leads to runoff during rainstorms. One can strive to convert as much lawn to tree and shrub beds as possible. To alleviate the potential hazard of mature trees toppling in bad weather, plant in groups and with layers.

Mimic nature by planting a tree (or trees) with surrounding shrubs, interspersed with ground cover plants. As the plants mature their roots intertwine, fortifying one another.⁶ Allow many food-worthy caterpillars the ability to pupate underground by keeping fallen leaves in those beds.⁶ Leaves act as natural mulch, protecting roots from weather extremes. As they decompose, the soil quality improves and the system can recycle the nutrients from old leaves into the building blocks of new. No fertilizer required.

Consider gardening organically so you can act as an ecological facilitator by using methods that promote a diversity of life in the garden. The idea is to help nature regulate itself by supporting as many species as possible. It's an approach that attempts to solve problems by promoting life, instead of solving problems by eliminating life with toxic chemicals.

Planting native does not mean your yard has to look wild and weedy. Like exotic plants, the native palette lends itself to an array of design schemes. Nurseries are starting to carry more native plants, but will only expand their inventories if the demand exists.

Look to the New Jersey Native Plant Society website to find out where they can be purchased: www.npsnj.org.

This article was inspired by books written by Douglas W. Tallamy: *The Nature of Oaks*, *Nature's Best Hope*, and *Bringing Nature Home*.



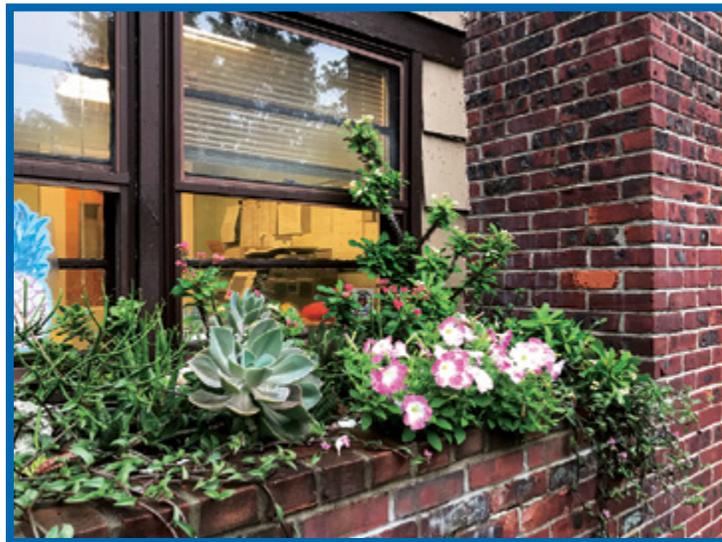
This perennial/shrub border is 85% native.

References: 1. Tallamy, D. 2021. *Bringing Nature Home*. How You Can Sustain Wildlife with Native Plants. Timber Press, Portland, OR. 2. Rahooof, A. 2019. Biodiversity Crisis: North America Lost 2.9 Billion Birds Since 1970. Earth-Orig. Sept. 23rd. <https://earth.org/biodiversity-crisis-north-america-lost-2-9-billion-birds-since-1970/> 3. USFWS. 2006. The Highlands Region. Landscape Planning to Protect Vital Water and Wildlife Resources. https://www.fws.gov/northeast/njfieldoffice/pdf/Fact%20Sheets%20PDF%20holding/Highlands_NJ_web.pdf 4. NJDEP, Division of Science and Research. 2003. Final Report of the New Jersey Comparative Risk Project. <https://www.state.nj.us/dep/dsr/njcrp/njcrp-final.pdf> 5. Tallamy, D. 2019. *Nature's Best Hope*. A New Approach to Conservation That Starts in Your Yard. Timber Press, Portland, OR. 6. Tallamy, D. 2021. *The Nature of Oaks*. The Rich Ecology of Our Most Essential Native Trees. Timber Press, Portland, OR. 7. Wikimedia photos. Creative Commons License Agreement. <https://creativecommons.org/licenses/by-sa/2.0/deed.en>

Garden Surprises: Flowers that “Volunteer”

Tanya Dinova, Horticulturist & Park Ranger

A garden bed is the product of careful planning and constant care, but it is also mixed with a bit of luck and random chance. Here at Deep Cut Gardens, we are continuously surprised by the unexpected manifestations of Mother Nature and happily welcome her “volunteer plant.”



This pink petunia “volunteered” in our coral reef window box display.

“Volunteer plants” are the ones that appear in the garden with no effort on your part. They bring smiles of excitement to gardeners, who may embrace the chance appearance and nurture it with a sense of wonder. Sometimes that mysterious seedling turns out to be a beautiful flower to adore and cherish, other times it's a weed, but either way the experience is appreciated.



Volunteer pink celosia and purple floss flower appeared in the bed underneath our coral reef display. A close-up of floss flower (ageratum).

In addition to arriving *free of charge*, volunteer plants play an active role in signaling. They are the “green light” letting you know it is safe to plant this plant outside now. If there is a bean sprouting in your vegetable garden on its own, you know it is okay to plant beans there.

Volunteers are one of the many joys of spring in the garden. They are an indicator of the vitality of the garden soil. Just picture yourself discovering a cluster of tomato sprouts in your garden that you did not sow. Who doesn't like free plants?

Where Do Volunteer Plants Come From?

- Last year's seeds, that germinated this spring
- A bird's last meal, before visiting your yard
- Your compost
- Furry garden visitors who "deliver" seeds attached to their coats
- Underground roots that creep under fences from the other side and sprout

Volunteer plants generally grow where their parents used to live. Some gardeners think of them as free bonus plants, others consider them weeds. Regardless of how they found your garden, once they arrive you must decide which ones are keepers. Our practice varies depending on the plant type and location; here are our most useful approaches:

Relocation – When a seedling is growing in a place it is not suited for, we carefully dig it up and plant it in a more suitable place. The best examples are tree seedlings. We encounter tree seedlings in many of our flower beds, we transplant them in pots to monitor their growth. When they are established we find them a permanent home in the garden. Similarly, we collect vegetable and flower sprouts of interest. They make great gifts for neighbors and friends, if we do not have room to raise them on site.

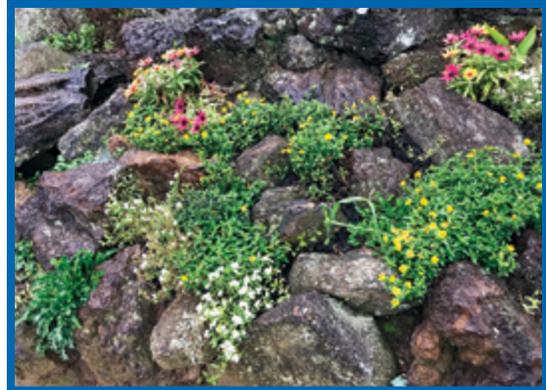
Thinning – Sometimes we let nature's course play out and leave the strongest few seedlings to grow and mature at the location they sprouted. We simply thin out the smaller seedlings to free up room for growth and access to resources.



This volunteer yellow *Melampodium* stands out next to the landscape around the parking lot.



A colorful pink *Portulaca* makes itself right at home in this bed of fern.



The rockery is full of volunteer plants such as sweet asylum (white), zinnia (pink), and *Sanvitalia* (yellow).

Common volunteer plants include many of the annuals we rely on to fill flower beds, as well as wildflowers and herbs; and many are great for pollinators and beneficial insects. It is impossible to list them all, but here are a few examples: petunia, Johnny jump up violet, spider flower (*Cleome hassleriana*), snapdragons; larkspur, amaranths, ornamental peppers, periwinkle, celosia, cleome, cosmos, marigolds, white alyssum, impatiens, salvia coccinea, purslane, torenia, melampodium, rudbeckia, Asters (*Aster spp.*), milkweed (*Asclepias spp.*), Shasta daisies (*Leucanthemum x superbum*), dill (*Anethum graveolens*), or love-in-a-mist (*Nigella damascena*).

NEW! Pollinator Week

This year from June 20-26, the Park System will be hosting a multi-park week of programs to honor these amazing animals and their critical role in the environment. Activities will include nature walking tours, butterfly workshops, and native plant gardening. Look for details in the Summer Parks & Programs Guide (available May 6).



CORNER

NATURE

Knobbed Whelk: State Treasure of the Jersey Shore

Joe Reynolds, Principal Park Naturalist

The fun of finding potential treasures is one big reason why so many people go beachcombing: to search the shoreline for shells, sea glass, gemstones, and yes, even the occasional message in a bottle.

The term “beachcomber” was first used in the early 1800s according to the Merriam-Webster Dictionary. It originally referred to sailors who escaped the harsh life onboard a ship to make a living by selling items that washed up on a beach. American novelist Herman Melville is the first person to use the term in print. In his second book, *Omoo: A Narrative of Adventures in the South Seas*, published in 1847, Melville describes a group of former sailors living in the South Pacific islands who “comb” beaches for valuable treasures.

Value is in the eye of the beholder, and for me, the perfect beachcombing treasure is an empty knobbed whelk shell (*Busycon carica*), especially if it is not broken. A large, intact shell with its beautiful shape and color is a special prize any time of year.

Knobbed Whelk Shell Details



The beautiful knobbed whelk



Whelk opening

The strikingly smooth and unique pear-shaped spiral is wonderfully surrounded by several triangular knobs or bumps on its shoulder, hence the name “knobbed.”

The aperture (opening) of this sea creature is on the right side as you look down. But don't think you will hear the ocean by putting the shell's aperture next to your ear. This falsehood has been around for a long time. What you're really hearing are surrounding noises, such as wind, distant traffic, or birds. When the sounds around a beach enter a large whelk shell, they bounce around and get combined into a type of white noise or hum, thus emitting the sound we know as the “ocean.”

Find a freshly washed-up shell and you will be greeted with a solid cream, grey or tan exterior with a cream or orange interior. Juveniles are marked with brown and white streaks, which fade as they get older. Whelk shells can also come in other colors, depending on where they were before being discovered. A pure white ivory shell usually means it has been bleached by the sun from sitting outside. A dark grey or black shell might indicate it was lying in mud. A tan or reddish shell perhaps means it was lying in a deposit of sand with iron sediment.



Adult whelk shell color comparison



Juvenile stripes

With its handsome colors and contours, people have long been delighted by knobbed whelk shells. So much so that New Jersey Governor Christine Todd Whitman made it the official state shell on April 13, 1995. The knobbed whelk has been the official state seashell in Georgia since 1987.

Inside the Knobbed Whelk



Knobbed whelk creature

There's more to a knobbed whelk than just a pretty shell. If you are lucky enough to discover a living whelk on a beach, take a quick look inside before returning the creature to the water. You might see something that resembles a snail.

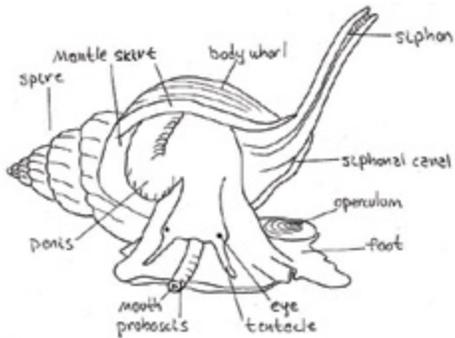
Whelks belong to a large taxonomic class of invertebrates commonly known as gastropods. This class is comprised of snails and slugs from all over the world, on land and in fresh and saltwater. There are 65,000-80,000 living snail and slug species globally, including over 50 species of whelks.

Knobbed whelks are marine gastropods that live in coastal waters and tidal estuaries along the Atlantic coast, from Cape Cod, Massachusetts to Cape Canaveral, Florida. They can be found all along the Jersey Shore, from Raritan Bay to Delaware Bay.

Knobbed Whelk Anatomy & Feeding

Knobbed whelks have a slimy muscular foot on the bottom of their body that is used for locomotion, and a siphon on top of its head to draw in oxygen-rich water to breath. They also have two pairs of tentacles on their head: one senses light, while the other senses touch/smell to help search for food. Whelks are carnivores and mainly feed on worms, clams, mussels, other snails, and even dead organisms.

With generally poor eyesight, they depend on their sense of smell to find a meal. When water enters their head siphon, chemoreceptors locate prey by detecting chemical stimuli in the water. This information is relayed to the central nervous system, which then moves its body towards the prey.



Simplified whelk anatomy. From Invertebrate Anatomy OnlineWhelk. 3jul2006. Copyright 2003 by Richard Fox Lander University <http://lanwebs.lander.edu/faculty/rsfox/invertebrates/busycon.html>

Whelks migrate during the winter from shallow estuaries to deep waters offshore (150 ft.) to look for food. It is an amazing journey considering an adult whelk can only move about 3.9 inches per minute. Consider its relative the slow-moving snail who makes up for lack of speed with its solid shell. A hungry predator, such as a gull, crab, sea turtle, sea star or other sea urchin will not have any easy time penetrating that shell for a meal. Plus, a snail can retract inside its shell for safety.

Similarly, the knobbed whelk can retract using a hard plate (operculum) on its foot that acts like a trap-door, forcibly shutting its opening. While predators will have difficulty



Snail

smashing through the strong shell and operculum of an adult whelk, juveniles who generally have thinner shells are vulnerable to attack from predators like sea turtles and other snails.

Life Cycle

Knobbed whelks begin life as a small crawling snail that emerges from an egg capsule. An adult pregnant whelk will lay a string of spiraling egg cases and deposit them in the water twice a year, usually April-May and September-October. Each fertilized egg capsule, which looks like a long line of yellow bubble wrap, is regularly strung together in a spiral with many other capsules, sometimes a foot or more in length, containing over 50 capsules. This string of capsules is called an egg case.



Photo from NJ Fish & Wildlife

Each tiny snail that emerges from an egg case is born with a shell. It will take three to five years before a juvenile whelk reaches maturity. Adult knobbed whelks measure five to nine inches in length and can live up to 40 years.

Other Whelks & More

The channel whelk (*Busycotypus canaliculatus*) is another marine snail at home on the Jersey Shore. It has a smooth, broad whorled shell instead of a lumpy one, and is generally smaller in length and more commonly found than the knobbed whelk.



Further south, including Virginia and the Carolinas, you may find lightning whelks (*Busycon sinistrum*). These look similar to the knobbed whelk, but the opening is on the left.



Photo from NJ Fish & Wildlife

In tropical waters there are several species of conchs, including the queen conch (*Strombus gigas*), a large marine snail that lives in the Caribbean Sea. In NJ, whelks are often called conchs, but this is incorrect. Even though they are related, there are important differences: whelks prefer the chilly water of the North Atlantic, while conchs favor tropical waters. Whelks are also carnivores, whereas conchs are herbivores.



Whelk or conch, marine snails are unquestionably treasures from the sea. Beautiful shells with unique wild organisms living inside. Remember, when beachcombing this spring, please don't take many treasures home! Always leave some whelk and other shells on the beach for animals to find. This is important because hermit crabs, for example, use whelk shells as a protective covering against predators, and small fish use large shells to hide from bigger fish.

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GREEN HERITAGE

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Spring Signal:

Look trailside for mountain laurel shrubs like this one, found throughout parks in May.

In This Issue:

Spring Shrubs, County Funds More Neighborhood Parks, Why Native Plants Matter, the Knobbed Whelk and more.

