MONMOUTH COUNTY PARK SYSTEM
GREEN HERITAGE
The Newsletter of Monmouth County's Open Space, Parks & Recreation Agency *Vol. 55 No. 1 Spring 2021*

Up Close & Personal

Here's something to consider about nature photography…camera improvements, especially the outstanding camera quality of our phones, are helping to foster a more intimate connection with the plants and animals around us. It is possible today–with just a cell phone on the trail—for anyone to take a "gasp-worthy" photo, one that captures a special detail or feature. Plus, with so many of us now taking/posting nature photos, both professionals and novices, we all see more images than we used to.

In the case of common local species such as deer, fox, hawks, falcons, eagles and vultures, it feels like these animals are somehow more abundant and easier to photograph. It could be that we interact more closely with wildlife because so much of their habitat is occupied by humans, at least here in NJ. Perhaps we are outside more, or have grown quieter and more observant because of the pandemic. Or, it could be that certain species are growing more accustomed to our presence and are no longer wary of us. Creatures will sit still longer allowing us to zoom in and focus and, in turn, we don't have to hide in camouflage or wait for hours to capture a great moment.

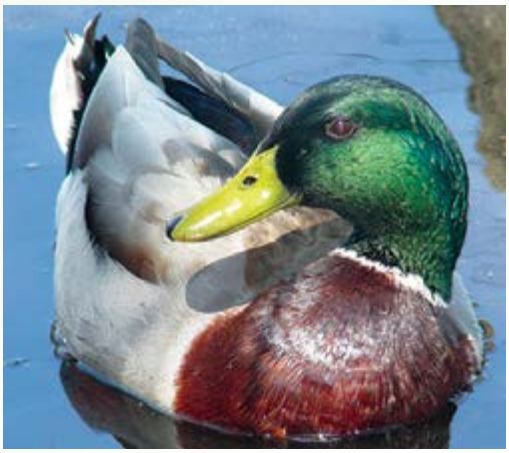
Deer have prominent lashes as well as whiskers around their large eyes. Also, note the wrinkles beneath the ear.

New Views on Common Species

Does this Great Blue Heron look weird stretching its neck out?

This Merlin is literally a "blockhead." Cornell's famous bird ID site (allaboutbirds.org) even says so. . .a" small, stocky falcon with a blocky head."

Hidden beneath its wing feathers, the Red-tail Hawk has these substantial legs.



The common male Mallard looks like a painting in the sun with its beautiful, iridescent feathers.

Note: These photos were all taken with digital (point and shoot) cameras, except the Merlin (DSLR).

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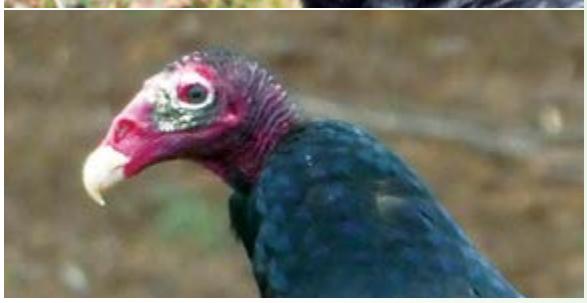
Special thanks to photographers on our staff: Ilona Szabo de Bucs, Chris Lanza, Paul Mandala, Blake Beyer, Andrew Spears, Emerald Platzer, and Bob Henschel (retired).

More Common Species

The Red Fox has a range of eye colors, including red. The Cooper's Hawk also has a fierce-colored eye.



If you have never seen a vulture this close-up (and we can understand why), you might not be aware that we have two common local species, pictured side by side and close up: black and turkey.

Mimic & Mirror

Details of animal behavior can also be revealed in a good quality photo or photo series.

Bald Eagle pair looking down together and squawking in tandem. *(Photos by Aubrey Merrill)*

This field cricket just completed molting (right) and is looking back at the former shell casing of itself (left).

Splish-splash, Osprey taking a bath.

Note: These photos were all taken with digital (point and shoot) cameras, except the Osprey (DSLR). The cricket was taken with an iPhone.

Mushrooms, Naturally Wild

No presentation of unusual details in nature would be complete without some fungi. Fuzzy footed, oddly named and outrageously colored, here are a few local mushrooms worth viewing.

The Fuzzy-footed mushroom (*Xeromphalina campanella*) is so named because of light hairs found at the base of the stalk. The cap of the young mushroom has a bell shape with a navel-like indentation and changes as it grows.

This sweet looking Fairy Helmet has a darker underside. Also known as Bleeding Mycena (*Mycena haematopis*), it oozes red latex when injured. (Ooozing Photo by Ron Pastorino, wikicommons)

You don't see the deep black of Trichoglossum species or the florescent red of Scarlet Waxcap (*Hygrocybe punicea*) everyday.

What is This Thing?

Finally, here are close-ups of some unusual looking and less-than-common park sights.

These red, spear-like projections are actually galls, abnormal tissue growths that serve as a chamber for midges (*Ampelomyia viticola*), a parasitic insect on this porcelain berry plant. Galls may also house other kinds of insects, fungi, bacteria and viruses. It might be helpful to think of galls as a kind of a benign tumor or wart on the plant.

This Bullnose Ray was inadvertently hooked by a young angler on the beach at Seven Presidents Oceanfront Park last summer. A Park Ranger was luckily on hand to help and warn onlookers about the stingray's whip-like barbed tail (and take this photo).

Note: These photos were all taken with a smartphones (except the fairy helmets.)

NEW RECORD-COUNTY AWARDS $3.47 MILLION IN GRANTS TO MUNICIPAL PARKS

Paul Gleitz, P.P., AICP, Principal Park Planner

Monmouth County residents living in the 23 towns listed celebrated the end of 2020 with news that the Board of County Commissioners awarded them $3.47 million in park improvement funds. Monmouth County's Municipal Open Space Grant Program broke records last year for the number of applications submitted, the amount of grant funds requested, the number of matching grants awarded and the amount of grant funding awarded to municipalities throughout the county. The program also saw a number of communities participate for the first time.

This program is the primary method by which the county assists municipalities in meeting the recreation needs of their residents. It provides vital funding to help meet local open space acquisition, recreation, historic and conservation goals. According to County Commissioners:

"This program is an example of how the county works to ensure local park needs are met, especially during this uniquely challenging time when residents need access to parks more than ever to support their mental and physical health."
–County Commissioner Director Thomas A. Arnone

There were 31 applications received in 2020, requesting about $5.5 million in matching grants for open space and recreation. The county's annual disbursement of $2 million in grant funds, combined with an additional $1.34 million of reprogrammed grant funds, allowed the county to award a total of $3.34 million in grant funding last year.

"The county is proud to offer this successful grant program to all Monmouth County municipalities. This past year we had a record number of applications as towns worked hard to meet the increased park demands in their community."
–County Commissioner Lillian Burry

Since the inception of the program in 2003, 50 out of 53 Monmouth County municipalities have now been awarded funding for local parks and acquisition projects—a total of more than $36 million. Of the 256 grants that have been awarded, 196 went toward park development projects and 60 toward open space acquisition projects.

Congratulations 2020 MOSG Award Recipients

Neptune	Sunshine Village Park - Pump Track	$250,000
Tinton Falls	Liberty Park - Dog Park Improvements	$127,000
Interlaken *	Bridelmere Park - Improvements	$175,000
Allentown	George Ashby Memorial Park Phase II	$125,000
Millstone	Millstone Park Phase II Improvements	$250,000
Shrewsbury *	Improvements to Eloise Nagel Park	$115,000
West Long Branch	Owen Farm, Franklin Lake, Sorrentino and Ronan Shirvanian Park - Improvements	$175,000
Asbury Park	Sunset Lake & Springwood Avenue Parks - Improvements	$250,000
Spring Lake Heights	Shore Road Park Improvements	$125,000
Neptune City	Adams Field - Improvements	$250,000
Freehold	Liberty Park Improvements	$250,000
Sea Girt	Edgemere Park - Phase I	$20,000
Lake Como*	Lake Como -Passive Recreation Improvements	$200,000
Spring Lake	Lake Como - Improvements	$200,000
Wall	Community Park South - Phase II	$125,000
Sea Bright	Shrewsbury Riverfront Park - Phase II	$80,000
Holmdel	Allocco Park Playground Improvements	$200,000
Manasquan	Curtis & Skokus Park - Playgrounds - Phase I	$90,000
Oceanport	Community Center Park - Improvements	$150,000
Long Branch	Lake Takanassee Beautification	$40,000
Eatontown	Wampum Park - Site and ADA** Upgrades	$50,000
Avon	Recreation Facility Improvements	$15,000
Atlantic Highlands	Many Mind Park Improvements	$85,000

** First time award recipients*
*** Americans With Disabilities Act*

Previous Grant Projects - Completed In 2020

Neptune Township – Sunshine Fields Skate Park

In 2017, Neptune Township received a grant for $165,000 to assist in the construction of a 6,000 sq. ft skate park at Sunshine Fields with ramps, a small bowl structure, sidewalks, fencing, benches and landscaping. This was the second of three grant projects at Sunshine Fields and one of 10 projects funded by the grant program.

Union Beach – Helen Harding Hayes Memorial Park Field Lights

In 2018, Union Beach was awarded $125,000 for the installation of six seventy-foot tall field lights to allow for better use of the very popular playing fields at Helen Hayes Park. The field lights consist of galvanized steel poles, each supporting six fixtures. The fixtures are state-of-the-art LEDs, producing lighting levels of 30 foot-candles on the field to help visualize fast–paced team sports.

"The municipal grants are a great way for the MCPS to work with local communities in creating and developing new parks and open space that might not fit into the county's broader vision, but that meet the needs of citizens at the local level."

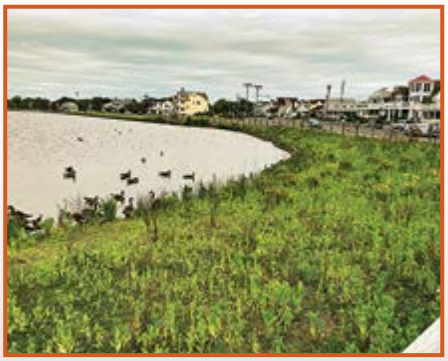
– Chairman of the Monmouth County Board of Recreation Commissioners Kevin Mandeville

Allenhurst – Railroad Plaza Park Improvements

In 2016, Allenhurst received their second grant of $125,000 for the redevelopment of Railroad Plaza Park. The project included a number of improvements designed to be universally accessible and ADA compliant, including the installation of fitness equipment, playground equipment and an inclusive swing set installed on a handicap accessible rubber play surface. The project also included additional park beautification elements such as new plantings, an irrigation system and ten park benches made of recycled materials.

Bradley Beach – Sylvan Lake Park Living Shoreline

Bradley Beach was awarded $161,000 for shoreline improvements along a portion of the southern shore of Sylvan Lake in 2016, one of nine coastal lakes along the Atlantic shoreline in Monmouth County. The lake forms part of the municipal boundary with Avon-by-the-Sea to the south. The project included the installation of 4,400 square feet of living shoreline, a transition area to an existing bulkhead, and the reconstruction of 300 linear feet of bulkhead, as well as the installation of ten park benches, four picnic tables, a decorative sign in a planting bed with additional landscaping materials and plantings.



In 2019, Avon-by-the-Sea also created a living shoreline on its side of the lake. Both projects now contribute to the long term health and viability of this important natural and scenic resource.

Deep Cut Gardens
Home Gardener

152 Red Hill Road
Middletown, NJ 07748

GS Parkway Exit 114, to Red Hill Road
732-671-6050

The Captivating & Complex Orchid

Tanya Dinova, Park Ranger & Horticulturist

Deep Cut Gardens is home to an exquisite collection of beautiful and fascinating orchids from around the world. Orchids bewitch the senses with majestic colors and sweet scents that enchant visitors and keep them coming back. More than just an attractive bloomer, orchids are a mysterious and unique creation.

*Orchids are housed in the Display Greenhouse.**

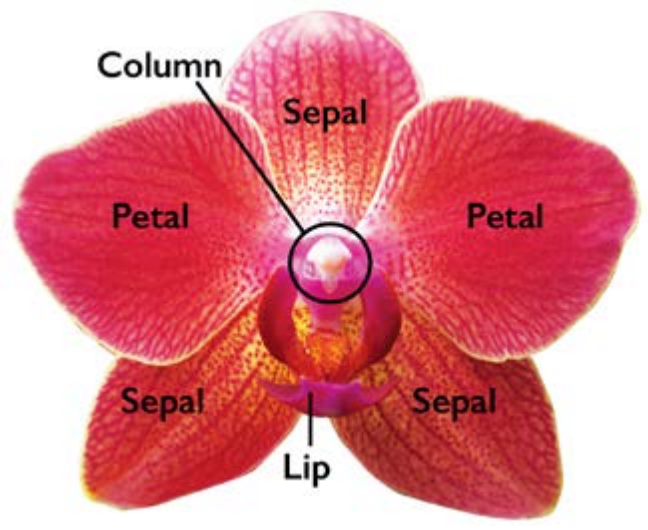
Dangerous Beauty of Orchids

The presence of orchids in human history can be traced back to the time of Confucius (551-479 BC) and the ancient Greeks. When orchids were discovered by British horticulturists in the early 19th century, people were so taken by them their state was described as "orchidelirium." An ecstatic, near-madness obsession caused skyrocketing interest worldwide, and demand for these exotic and beautiful flowers became "big business" overnight.

More than a dozen orchid species are on display (l to r) Castastetum, Epidendrum, and 'Green Hornet'.

The orchid (*Orchidaceae*) belongs to one of the two largest flower families in the world along with the sunflower (*Asteraceae*). Orchids grow abundantly in the tropics and are found on every continent except Antarctica. Despite their diversity and abundance, individual orchid plants are a rare sight because of poaching, habitat loss and climate change. Currently, the ***IUCN Red List***** of Endangered Species notes that 50% of all wild orchids are endangered or critically endangered.

The lip or labellum on this white orchid is more prominent than the other petals, standing out with yellow/red colors.



Tripartite Orchid Anatomy

Orchid Flower Anatomy

Orchids have a tripartite floral structure, and this is exactly what sets them apart from all other flowering plants. The three parts of an orchid are the outer whorl (sepals) and inner whorl (petals), with one petal modified into a lip (labellum) to attract pollinators. The lip is always quite different than other petals; it is shaped and colored differently, has markings, and is ornamented with hairs, crests and a cushion-like callus. Often the lip is extended backwards to form a nectar containing spur. Orchids have one further unique feature – the column (a combined structure of the male and female organs).

**The greenhouse dates back to the 1950s when Majorie Withol, who donated this property, herself collected exotic and tropical plants. **International Union for Conservation of Nature*

Orchid Growth

Orchids have adapted to living on different surfaces from the ground to the treetops and everything in between. Terrestrial orchids grow in the soil. Epiphytic orchids grow on trees (NOTE: they are not parasitic; they derive no nutrients from the host plant metabolism, it is only for support and a substrate on which to grow). Lithophytic orchids grow on "rocks."

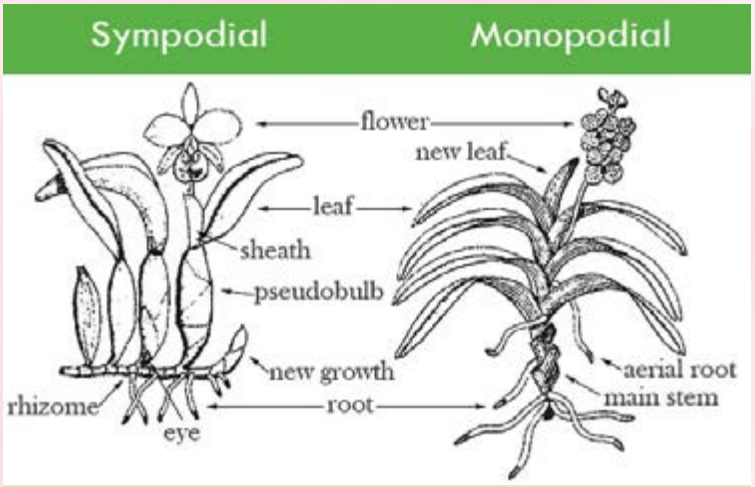


Image Credit:American Orchid Society

There are two orchid growth patterns:

- Sympodial (sim-POH-dee-al), think of this as growing sideways. These orchids grow laterally, producing leafy growths in parallel along a rhizome, like an iris or bamboo. New growth begins at the base of the previous mature growth. Examples include Cattleya, Oncidium, Dendrobium and Cymbidium orchid species.

Example of sideways vs. upright growth in orchids.

- Monopodial (mon-o-POH-dee-al), think of this as "one foot." These orchids grow continuously taller - upwards from a single, occasionally branched stem and may reach many feet in height. Monopodial orchids have alternate leaves the entire length of the stem. Examples include Phalaenopsis and Vanda.

Cattleya orchid (sympodial growth)

Easy-Growing Phalaenopsis (Moth Orchid)

Moth orchids (members of the genus *Phalaenopsis*), with their elegant form, are the most popular orchids in the world, accounting for 75% of all orchid plant sales. Phal orchids are native to climates with even amounts of moisture year-round. Beyond their beauty, they are also among the easiest to grow–in greenhouses, on windowsills, or under artificial lights with individual flowers that can last for up to three months in pristine form.

Classic pink phalaenopsis, the "Moth Orchid"

Spots & Stripes of Phalaenopsis

There's logic to the pattern on a flower and how it relates to its function in the natural world. Most orchid lovers are familiar with the elegant white, pink and striped hybrids, but a revolution in *Phalaenopsis* breeding has resulted in an entirely new, diverse and wonderful array of flower colors and patterns. Colors include white, yellow, green, apricot, pink, magenta and dark maroon, with different-colored centers or margins and patterns including spots and stripes.

Hybrid apricot and maroon spotted Phalaenopsis with a bright pink labellum.

Orchids don't display their flowers simply for our delight – they are holding out for insects to pollinate them and employ tricks to ensure their success. Blossoms that mimic bees can attract real bees by luring them to the center of the flower.

Some orchids mimic the appearance and odor of female insects in order to attract males who pollinate them ("pseudocopulation"). Others produce flowers that antagonize territorial bees, tricking them into furiously bumping the flower to pollinate them like airborne bulls ("pseudoantagonism"). Yet others offer foul smells to attract flies and in turn tricking them into pollination. Orchids accomplish their reproductive feats with variations of their three sepals and three petals.

Continues next page...

The presence of flower spots is most appealing to bees; they help save time by directly steering a path to the nectar. Many flowers including the orchids, produce spots for that reason alone. Yet in nature more broadly, spotted coats are often the product of camouflage and breeding display. Although some orchids are naturally spotted, artificial selection and genetic technology breakthroughs are responsible for amazing variations of spot colors. The newest harlequin flowers, white or yellow with irregular purple blotches, command a premium price.

Harlequin spotted Phalaenopsis (white and yellow)

Stripes are one of the most common floral pigmentation patterns. Stripes that follow flower veins can be seen in many flowering plants. Did you picture a tulip? These venation patterns are prevalent in nature because they can be useful nectar guides, particularly when they also increase flower visibility. In pitcher plants, venation increases the ability to lure more insects.

Stripes in orchids are called candy stripes. Candy stripe Phalaenopsis are a fairly recent development. Besides pink or rose, there also are yellow candy stripes all as a result of our artificial selection. Yet venation patterns are as old as life. They are fundamental building blocks of nature and can be observed in leaves as well as dragonfly wings. We hope that nature may inspire you to look above and below the surface for that universal beauty that connects us all. If you don't know where to start, come visit the orchids at Deep Cut Gardens.

Striped Phalaenopsis with beautiful pink color and elaborate venation pattern.

Inspired By Shapes In Nature? Take Some Photos

Like the pattern in an orchid petal, the underlying geometry of nature with its shapes, fractals, reccurring patterns and ratios holds more than visual stimulation. Such patterns are efficient, balancing and optimal…even a sacred expression of life energy. Recognizing such patterns is not limited to gardeners. Artists, philosophers and musicians all have used these shapes–Da Vinci, Pythagoras, Galileo and Mozart for example– from a simple pine cone, to a snail shell, to the human body, to the Great Pyramids of Giza. Now local photographers will have their chance, too.

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Photography Exhibit

CALL FOR ENTRIES!

Fractal Geometry of Nature in the Garden

Connect with the amazing shapes displayed by plants all around the gardens.

Entry deadlines per season:

*** Winter: March 21, 2021**

*** Spring: June 20, 2021**

*** Summer: September 26, 2021**

*** Fall: November 28, 2021**

The photographs will be displayed at the Horticultural Center during January 2022. For full details and an Entry Form, visit the Deep Cut Gardens page at ***www.MonmouthCountyParks.com.***

Caring For Orchids

Kate B. Lepis, Ph.D. Horticulturist

Caring for orchids can be challenging, because most require humid conditions that humans find uncomfortable in the home. If you want to be successful at growing any plant, find out where they live in nature and try to replicate that environment.

Epiphyte Brassia orchid growing mounted to a piece of wood.

Most household orchids are epiphytes (air plants) - in nature you would find them on the branch of a tree in a humid tropical rainforest. These plants evolved adaptations that allow them to absorb all of the water and most of the nutrients they need directly out of the air.

Other common houseplants, such as bromeliads and certain ferns and jungle cacti, also live this type of lifestyle in the wild.

Examples of household epiphytes: an assortment of bromeliads and Fish Bone/Zigzag Cactus (Disocactus anguliger).

When trying to re-create a native orchid habitat, your first step is to realize these plants like it humid but not wet. You should never let your orchid sit in water. Here are the answers to some commonly asked questions about orchids.

How Much Light?

The most common orchid raised as a houseplant, Phalaenopsis, requires bright filtered light, but not direct sun. You can achieve this with an east facing window. If placed near a south or west facing view, the plant should be several feet away from the window to avoid direct sun.

How Often Do I Water?

The best way to judge when to water is to feel the potting mix; if it is moist or damp, leave it alone. Let the top inch or so dry out between watering. If you keep the potting mix too wet, the roots will rot. If in doubt, wait and check again a couple of days later. Since they "learned" to live in the air, orchids can withstand a brief dry spell better than too much moisture.

Place any houseplant that isn't too big into a sink and water thoroughly so at least 10% of what you put in the top drains out the bottom. This helps prevent damaging salts from collecting in the mix over time. Water in the morning and avoid wetting the leaves. Droplets that remain on the leaves overnight can lead to black fungal spots.

How Often Do I Fertilize?

Once a month should be adequate. A foliar spray may work better for orchids than the type that gets watered into the potting mix. Foliar sprays allow the nutrients to absorb through the leaf surface, while the latter is absorbed by the roots. When applying a foliar spray, coat the roots that may be sticking out of the pot as well.

How Do I Get My Orchid to Flower Again?

Typically, in the home setting, Phalaenopsis will flower once a year, but luckily these blooms can last for months. Once all blooms have faded, leave the stalk in place as long as the tiny bud at the tip looks healthy (not brown or shriveled). If the plant is happy, it will send out a new flowering branch off the old stalk.

A young Phalaenopsis plantlet developed on top of the flowering stalk (original parent plant at the base).

Sometimes the tiny bud at the stem tip will develop into a whole new plant. Once roots form, wrap them in moist sheet moss and keep moist. When the plantlet develops well-formed roots at least one inch long, remove from the stem, and pot. If the old flower stalk begins to look brown and shriveled, trim it back to the base and wait for a new one to emerge. If your plant hasn't re-flowered in over a year and looks healthy (with plump green leaves) you may want to try putting it in a brighter location.

How Often Do I Repot?

Repot your orchid every two years into a slightly larger container that drains readily. Pots made especially for orchids will have holes on the sides. Bark–based potting mixes are commonly used because they drain readily and create a humid (but not wet) environment around the roots. Remove the plant and gently knock away the old medium. Trim away any dead roots and place in the new container with fresh potting mix. Allow your plant to recoup in a shady location for three to four weeks.

References: Kindersley, D. (ed.) 1979. Reader's Digest Success with Houseplants. The Reader's Digest, Inc., Pleasantville, NY

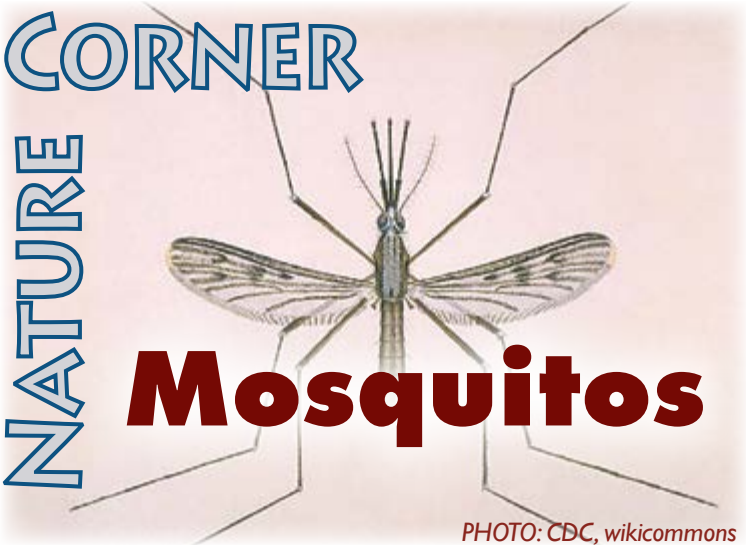


PHOTO: CDC, wikicommons

Jason Goldman, Park Naturalist

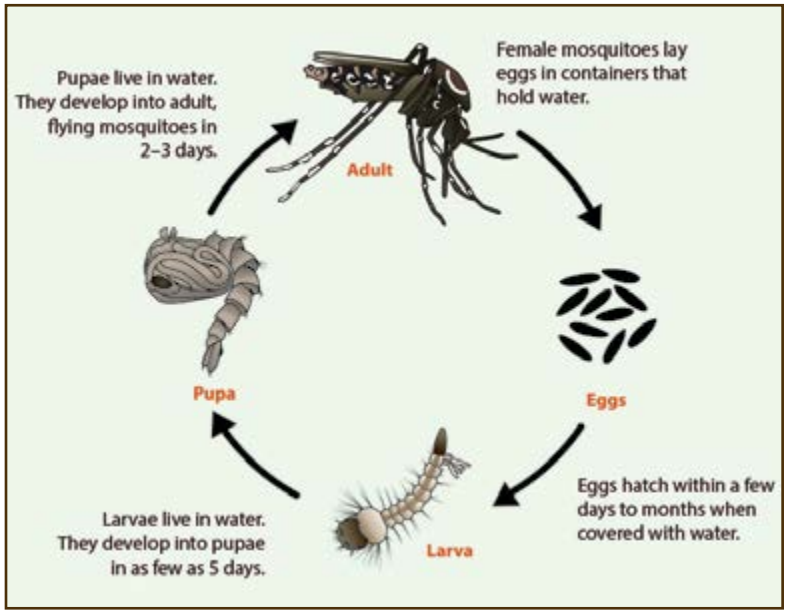
You may be asking "Why on earth would someone write an article about mosquitoes? They're the worst! Who needs them anyway?!" Often vilified for their itchy attributes and disease carrying potential, there IS a reason that mosquitoes exist. To understand why, it's important to review their biology first.

Special thanks to Tony Acquaviva, an Entomologist for the Monmouth County Mosquito Control Division, for providing expert information for this article.

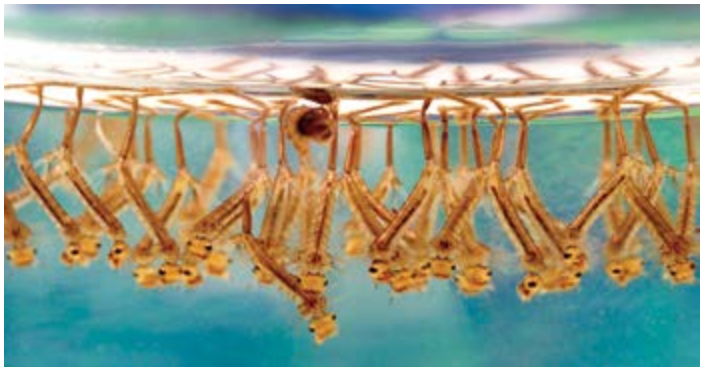
The Mosquito Life Cycle

Adult Aedes species of mosquito PHOTO: JGathany, CDC, wikicommons

All mosquitoes have one thing in common: the need to lay eggs in water. Water sources vary; some species prefer vernal pools (shallow, temporary bodies of water), others seek wetlands, and a lucky few can even spawn in that empty flower pot in your yard with an inch of rain water.



Mosquito Life Cycle. IMAGE: CDC, wikicommons



Larvae of Culex species in water. PHOTO James Gathany CDC, wikicommons

After the eggs hatch, larvae spend their time wiggling about in the water as filter feeders, using fan-like structures to bring in food (microorganisms and decaying organic matter). Equipped with a posterior siphon, larvae must surface in order to breathe air.

After one to two weeks, larvae transform into pupae. This non-feeding stage also requires air to breathe. After a couple days more, the pupae rise to the surface and emerge as fully formed adults.

Mosquito Behavior & Types

You may be surprised to learn that all mosquitoes drink plant nectar. The males don't even drink blood, only females do. Protein-rich blood is an essential ingredient needed for the females to develop their eggs. To accomplish this, mosquito mouths contain two tubes, one of which pumps anticoagulant saliva into the host, while the other sucks up the blood. The mosquito uses these same mouthparts to drink both nectar and blood.

Mosquito feeding on nectar. PHOTO:Abhishek, wikicommons

Female Anopheles during a blood meal. PHOTO: CDC Gathany, wikicommons

More than 60 species of mosquito have been identified in NJ (63 at the time of this article's publishing). More than 40 of them have been found right here in Monmouth County due to our diverse array of habitats, moreso than our inland neighbors. According to Tony Acquaviva, forests, meadows, rivers and wetlands all work together to create various niches, which in turn allow different mosquito species to coexist without competing against one another (known as niche partitioning).

Aedes albopictus, Asian Tiger Mosquito

I think it's safe to assume that the most publicized species around here is the Asian Tiger Mosquito. This non-native was first found on American soil in Texas in 1985. Ten years later, it was first spotted in Monmouth County (by Tony of all people!) These especially pesky mosquitoes can be identified by their characteristic black and white leg stripes, as well as the single white stripe running down the head and back. Whereas most mosquitoes are crepuscular, or active during dawn and dusk, the Asian Tiger Mosquito often feeds during the middle of the day.

***Fun Fact:** I've heard rumors that mosquitoes don't travel very far from the water source they hatched in. According to Tony, this is mostly true. Most species travel only a few hundred feet from their water of origin. However, salt marsh mosquitos are more likely to travel vast distances because coastal winds blow them around. Those tales of fishermen far out at sea becoming inundated by mosquitoes now make sense!*

Mosquitoes In The Yard, Help!

The first step to understanding where they are coming from is to identify the water source they are breeding in. Asian Tiger mosquitoes, for example, thrive in shallow stagnant water, which can be found in anything from stacks of flower pots, to tires on the lawn and clogged gutters. Indeed, checking those gutters for leaf clutter is key! Decomposing leaves in stagnant water signal to mosquitoes that this is a great spot to breed in.

Clogged gutters attract mosquitos. PHOTO: wikicommons

If your space is clear of breeding sites, the source is probably nearby, perhaps a natural pool in the woods. In this case, repelling mosquitoes with bug spray is a good act to take. Picaridin can be used for skin application, whereas Permethrin can only be applied to clothing and lasts for a few wash cycles.

Certain oils can repel mosquitoes–eucalyptus, lemongrass and citronella. However, planting citronella in your yard will not necessarily work; the leaves must be damaged or crushed to release the aromatic compounds that repel mosquitoes.

Also, avoid plants that attract mosquitoes. Last summer I planted a beautiful cover crop of white alyssum flowers in the garden. They were beautiful and attracted beneficial insects such as lacewings and bees. But the thick carpet also acted as a safe house for swarms of Asian Tiger Mosquitoes.

One of the best ways to limit mosquitoes is by encouraging nature to do the work. Dragonflies, Little Brown Bats, and even the Ruby-throated Hummingbird all consume mosquitoes while in flight. Installing a pond feature, a bat house, or hanging a hummingbird feeder may help.

Monmouth County Mosquito Control Division (MCMCD)

Throughout the world, mosquitoes are vectors for diseases such as malaria, yellow fever, and the Zika virus. Here in NJ, our colder climate severely limits which diseases can survive. Fortunately, this means viruses such as Zika have not been transmitted in our state. However, NJ mosquitoes can act as a vector for the West Nile Virus and Eastern Equine Encephalitis.

If you have a mosquito problem you can't solve, the Mosquito Control Division is here to help. They work to prevent these infections by limiting mosquito breeding sites. First, they perform courtesy inspections. (You can apply for one on their website **www.visitmonmouth.com** click Departments). After analyzing an area, they may recommend:

- Simple solutions such as removing standing water (e.g. turning over empty garden pots and unclogging gutters.)
- Integrated Pest Management (IPM), the practice of mimicking nature to control a pest species. For mosquitoes, a small fish species like the Fathead Minnow can be introduced to dine on larva.
- Application of a larvicide on site. One of the most accessible larvicides used today contains an ingredient called Bt, short for the bacteria *Bacillus thuringiensis*. Each strain of Bt specializes in controlling a specific type of larvae.

The Big Picture

Going back to the question that started this article, who needs mosquitoes? You'll see, we've already answered it!

- All stages of the mosquito life cycle are a food source for other animals. Larvae are fed on by dragonfly nymphs, small fish-like minnows, and tadpoles. Adult mosquitoes are hunted by spiders, dragonflies, hummingbirds, bats, and even sundew plants!
- Mosquitos are also pollinators. By feeding on nectar, they transfer pollen from one plant to another.
- This final role may be the least desirable, but it is vital. Mosquitoes are vectors for spreading disease; and similar to the way predators stave off overpopulation of prey species, diseases can help keep populations in check. These dynamics help keep ecosystems in balance.

Finding a way to co-exist with mosquitos while minimizing human harm is integral. Perhaps that means respecting their place in the ecosystem from afar.

GREEN HERITAGE

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PERSPECTIVE

Is this a satellite photo of a meandering river or a microscopic view of a plant cell? Neither, it's just pollen floating on a lake.

In this issue, we explore how photos can reveal details of nature in **UP CLOSE & PERSONAL**, we review **COUNTY GRANT FUNDED** parks & land projects near you, and learn more about **ORCHIDS** and **MOSQUITOS**.