



The Naturalist

A Newsletter for and by
Barneгат Bay Master Naturalists and our Affiliates

Flock of gulls and terns at Island Beach State Park, photo by Becky Laboy





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Photo: [BugGuide.net](https://www.bugguide.net)

WELCOME SPRING & SUMMER!

Spring is a wonderful time of year! Green shoots emerge above the soil, birds begin to sing and delight us with their fanciful colors, temperatures rise and the great outdoors calls. Summer is right around the corner! There is so much nature to enjoy in the Barnegat Bay watershed - hiking, kayaking, canoeing, bird watching, clamming, boating, sunbathing, or simply relaxing in your favorite chair and feeling the cool salty breeze. There are also lots of opportunities to learn and to offer your valuable volunteer services. Check in with the Barnegat Bay Partnership or your favorite local environmental organization and offer your time this season to help ensure a healthy Barnegat Bay!

MOSQUITOS - an important part of our ecological web of life!

By Becky Laboy, Master Naturalist Course Instructor

Yes, mosquitos can be truly annoying in the summertime when you're trying to enjoy a paddle through the salt marsh. But the truth is, mosquitos play an important role in the bay shore ecosystem. As tiny aquatic larvae, mosquitos are prey food for a variety of native fish, including killifish, minnows, mummichogs and Atlantic silversides. These fish are in-turn food for other animals including larger fish, terrapins, terns and others. Adult mosquitoes are an important food source for hummingbirds, swallows, nighthawks, dragonflies and bats. Mosquito eco-services extend beyond the Barnegat Bay food chain and into our own gardens - they provide pollination services to plants. According to [Barredao and DeGenaro \(2020\)](#), flower nectar, not blood, is the primary food source of adult male mosquitos, and a supplemental food source for females. None of the flora and fauna I mentioned rely specifically on mosquitos for survival. So, its understandable if you take measures to keep your backyard mosquito population in-check. However, use caution and care in the methods you choose. Spraying pesticides will not discriminate between a mosquito and a bee or butterfly, so it's best to avoid spraying toxic chemicals. Instead, target the larvae. Since mosquito larvae require standing water, be sure to dump and refresh your bird bath frequently, or add a pump or fountain to larger basins of water. Create a backyard pond, free of fish. Although mosquitos may lay eggs in your still-water pond, it will also attract dragonflies who will gladly take care of emerging adults. The National Wildlife Federation offers more tips on [how to reduce mosquito bites](#), [what you need to know before spraying mosquitoes](#), and [nature's solution to mosquitos](#).

What Are Plankton?

By Christine Moran, Barnegat Bay Master Naturalist, Class of 2019



Phytoplankton are an essential part of a complex food chain in the Barnegat Bay.

There are many ways that microscopic creatures can be classified. In the marine world, they are called **plankton**, which comes from the Greek meaning “drifter” or “wanderer”. Most of these organisms are at the mercy of ocean and bay winds and currents, and are not able to move great distances on their own.

Plankton are generally divided into two groups based on size and metabolism: **phytoplankton** and **zooplankton**. Phytoplankton are the subset of plankton that perform photosynthesis using the sun and CO₂ to produce their own food. Chlorophyll a, chlorophyll b, chlorophyll c and carotene are the pigments that enable them to absorb sunlight for energy. Because they do not consume other organisms, but are prey for

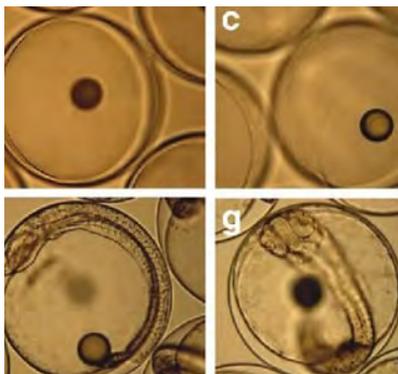
organisms in the food chain, they are called primary producers. They are also important contributors of oxygen in the air we breathe.

Phytoplankton size is generally less than 20um (0.0008 inches). Blue green algae (cyanobacteria), diatoms and dinoflagellates are part of this group. Diatoms are phytoplankton with silica shells that act as protection against predators. Dinoflagellates have two tails, or flagella, that provide them with limited mobility. The occasional red and brown tides are the results of phytoplankton blooms.

Other plankton classified in this size range that do not photosynthesize are protozoans, bacteria and viruses capable of infecting marine organisms. They also drift in the currents and provide food for larger animals.

Zooplankton size is approximately 20um to 500um (0.008 to 0.02 inches). Copepods are the dominant species of the Barnegat Bay population, which also includes fish eggs, clam, barnacle, crab and worm larvae, in addition to sea nettles and ctenophores. Zooplankton feed on detritus and phytoplankton. While the growth of phytoplankton depends on the availability of carbon dioxide and sunlight, zooplankton growth is also influenced by the phytoplankton population, salinity, pH, and nitrogen and phosphorous concentrations. Growth in both groups is influenced by temperature. Phytoplankton live in the upper layers of the water column where sunlight is accessible. Zooplankton have some mobility to stay in deeper waters in the daytime and move to the surface at night to consume their phytoplankton prey.

Consumers of zooplankton include commercial species like clams, oysters and mussels that siphon water directly into their bodies to feed. Larval fish and crabs are predators of plankton. Sponges and jellyfish are also considered consumers.



Zooplankton, consisting of eggs and larvae of the Olive Flounder (*Paralichthys olivaceus*).



Diatoms are phytoplankton with silica shells used for protection.



Dinoflagellates have 2 tails called *flagella* that provide them with limited mobility.

The Barnegat Bay can be divided into two environments: the northern part, which has a lower salinity and is less influenced by tidal flow, and the southern portion, which has higher salinity, lower pH (more acidic) and is subject to tidal flow from Little Egg and Barnegat inlets. As a result, some oceanic plankton species are often found in the southern part of the bay.

A 1995 survey found 132 different species of phytoplankton in Barnegat Bay. Previous work, 20 years earlier, cataloged 186 species. Some of the diatoms found have exotic names like *Skeletonema*, *Thalassiosira* and *Chaetoceros*. Blooms occur from spring to fall.

A 2017 study described a zooplankton collection in the bay that took place from 2012-2015. 34 taxa were represented in the sampling. Copepods were most frequently netted with the *Acartia* species found to be most numerous. As with the phytoplankton, oceanic species often find their way into the bay near the two southern inlets.

Plankton support an important and complex food web. While some species can adapt to changes in salinity, temperature, pH and excess nutrients (nitrogen and phosphorous from fertilizer runoff), many cannot. In a changing environment, species diversity could be threatened in a polluted bay.



Phytoplankton.



Zooplankton.

Egrets, herons, terns and gulls feed in the tidal waters of the Sedge Island Marine Conservation Zone, Barnegat Bay. They rely on an intact food web for their health and survival.



Bird ID Quiz

By Sarah Stewart, Master Naturalist,
Class of 2014

Are You a Bird Brain? How are your bird ID skills?

Can you identify the 4 birds below? Click the pic to hear their calls!

(Answers on the last page of the newsletter.)



Photo: Becky Laboy

Species #1: I am comparatively small, and certainly not the most colorful of birds. Some might even say my coloring is downright drab! I may be mistaken for many other species with similar muted coloring by the beginner birder. However, my song is unmistakable with its clear, long 3 syllable tone that shouts out my common name. My preferred place to hang out is a deciduous forest, where I build a nest anywhere between 15 and 70 feet from the ground in an oak, elm or maple tree. My nests are small (3 inch) cups that I make out of grass, twigs and an overlap of lichen for camouflage. My favorite foods are insects, which I catch on the wing, making many “sorties” or “sallies” from the canopy to catch these delicious and nutritious snacks. I belong to the largest family of birds in the world with about 400 known species, the Tyrant Flycatchers.



Photo: Becky Laboy

Species #2: I am a good swimmer and classified with other shorebirds, but you will often find me at home in dry grassy fields, golf courses, lawns and even parking lots, which is where I will make a nest. My partner and I scrape a shallow depression in the ground, and fill it with small rocks, pieces of shell, twigs and even trash! These are high-risk places easily found by predators (and trampled by humans). We have a unique fix for these threats - we run away and fake a broken wing to lure the predator towards us and away from the nest. We also make ourselves look bigger by fluffing up our tail over our head and running towards a predator to try and make it change course. My diet is primarily what I can forage from the ground: insects and worms. My common name reflects my excited and plaintive cry.

Species #3 & 4: Can You Tell Us Apart?

We are both raptors and are easily mistaken for one another, even by experienced birders!

Species #3: I am the smallest Accipiter in North America and am much smaller than my cousin, Bird # 4. Though you may spot me during my fall migration south-



Photo: Becky Laboy

ward, many of us remain here year-round. In summer I spend much of my time deep in the forest, nesting. I have long legs, short wings and a very long tail which helps me maneuver through the forest hunting mice and song birds. Over open fields, my flight pattern is flap-and-glide. My square-tipped tail distinguishes me from Bird #4. Females are much bigger and weigh more than males, which affects the prey we hunt and how our chicks eat. Dad feeds the young nestlings the smaller prey, and as they grow, Mom feeds them the larger prey she captures. As our chicks fledge, we strengthen their flight skills by passing them food in mid-air. Timing is everything as we kick the prey toward the chick and they arrive in flight just in time to grab it. My population dropped sharply due to DDT usage; I am still listed as a species of Special Concern in New Jersey.



Photo: Becky Laboy

Species #4: I am 6 inches larger than Bird #3, but I am still only about the size of a crow. I too have wide wings, and a long, narrow tail that helps me zip around the forest in hot pursuit of my favorite prey – small birds. A few distinct markings may help you discern me from #3: my tail is slightly rounded at the tip with a white edge, my head is large and blocky, and my cap is dark and distinct. In New Jersey, I favor dense deciduous forests where my life-mate and I build our nest, preferably in the fork of a large tree, and refurbish it each year with bark and twigs. Like #3, I look for a stump or log to use as a post, where I consume my prey. Unlike other raptors who bite their prey to render them dead, I squeeze my prey between my talons and toes, or I may drown it before eating. I am known to frequent backyard feeders for the smorgasbord of birds that congregate. I am slowly adapting to urban and suburban life. Perhaps this will aid in supporting my population, as I am also listed as a species of Special Concern in New Jersey.

Plant ID Quiz

By Sarah Stewart, Master Naturalist,
Class of 2014

Are You a Botanical Genius? How are your plant ID skills? Can you identify the plants below?

(Click on photos to reveal each plant's identity. Answers also found on the last page of the newsletter.)

Roots, stems, leaves, flowers, fruits and seeds - all parts of the plant provide botanical clues for identification. Habitat is also an important component of field ID. Can you guess the common name of each of these species? How about the scientific name?

Plant Species #1: My bark tells the whole story and as a result, novice dendrologists readily identify me. As a young tree, my bark is smooth, with peeling becoming more evident and “shaggy” as I grow older. I need a lot of space, as I can easily grow to over 100 ft. tall, with an average lifespan of 200 years or more. Once I reach maturity at 40 years old, I begin to bear fruit. I have been known to produce seeds at 300 years! My leaves are compound with 5 sizable leaflets which turn yellow and brown in the fall. My preferred soil is rich humus in sunny or shady locations. I'm a real “mixer” as I don't usually grow in stands, but often grow in-between other trees. I have a very long tap root, so I don't transplant well. My non-showy flowers bloom in April, developing large fruits (nuts) in the fall which bears, foxes, mice, squirrels, rabbits and some birds love to eat. These nuts were an important food source for indigenous people and early settlers. My wood is prized for its hardness with many uses from firewood, tool handles, ladders, gun stocks, furniture, baseball bats, and also to smoke and cure meats. My name was a nickname for an American president in recognition of his tough character.



Plant Species #2: My drooping clusters of small, white bell-shaped flowers usually appear in April and May. I grow as a large dense shrub or small tree (10-15 feet with a tendency for suckering around the base). I thrive in moist lowland soil, so you will often find me along streams and river banks stabilizing the adjacent land, preventing erosion and creating a fertile shady habitat for other plants and animals. My leaves are opposite and compound with 3 ovate

leaflets that grow to 3 inches long. My pretty tubular flowers turn into large drooping greenish-white papery capsules, turning brown in the fall and persisting through winter. Florists often use these seed pods in flower arrangements. Bees and butterflies value my nectar, and small mammals like to browse my foliage and eat my ripe fruit (nuts), as do people. Nuts can be eaten raw or cooked, and can be a substitution for walnuts.



Plant Species #3: Looking for signs of spring? You will likely find my dainty white flowers in deciduous and coniferous forests blooming mid to late spring as one of the more common spring wildflowers in this region. I am one of the few flowers that has 7 petals (count them!). My preferred habitat is open to dappled shade in moist woods, but I can grow in sandy, acidic soils as well. I am a member of the Primrose family and rely on native bees for pollination. I am considered an herb and usually grow to about “one third of a foot” (scientific name hint) from thin rhizomes. My dormancy period starts mid-summer when my leaves turn yellow and tiny seed pods develop but do not germinate until undergoing a cold period and emerging in the fall of the second year. Gardeners Be Patient!



Lacey Township, 2018. *Photo courtesy of Geoff Lohmeyer*

Fighting Fire with Fire - Protecting Ocean County from Disaster

By Rich Biolsi, Barnegat Bay Master Naturalist, Class of Spring 2013

In recent years, many of us have sat in front of our televisions, watching in horror as out of control fires in the western United States took human lives, destroyed whole towns and burned millions of acres of forest. According to a PBS documentary titled “The West Is Burning,” wildfires since the year 2000 have burned an area larger than the entire state of California. Of even more concern, there are still 80 million acres that are at high risk of burning.



Jakes Branch County Park, 2018.
Photo: Geoff Lohmeyer

While it seems clear that climate change has contributed to this problem, with increasing drought, high temperatures with low humidity and increased winds, Mike Mangum, Director of Ocean County Parks and Recreation, believes that the uncontrollable nature of these fires is a result of poor management. Mike received a degree in Parks and Forestry from the University of Vermont and has worked for the county parks since 1977. He has held the position of director since 2003. He is very concerned about the danger of uncontrolled forest fires in our area, and the Parks and Recreation Department practices proactive management techniques in order to guard against them. There are 35,000 acres of Ocean County-owned park land and natural trust land, obviously not close to the millions of acres of forest in the West, but just as ominous considering the nature of the pines and the proximity of development to the forest. A small number of these fires are caused by lightning, but the majority are started by humans, whether intentionally or unintentionally.

The proactive approach to suppressing dangerous forest fires in Ocean County, according to Mangum, has become more and more urgent as development has moved closer to the forest, creating a phenomenon known as wildland-urban interface. Homes and commercial buildings being erected in the proximity of the forest are under increased threat. Besides protecting these areas by mitigating fire hazard, planned burns improve the general health of the forest and enhance the survival of endangered species. The idea is to set fires to burn the dangerous fuels that exist mainly on the forest floor – small shrubs, pine needles, deadfall and other debris. The pines themselves, largely pitch pines, can resist the destruction of the fires because of their thick bark and other factors and, in fact, depend on the intense heat to open their cones and release their seeds. The fire creates conditions on the ground which are vegetation-free and full of minerals, perfect for the growth of young seedlings.

To understand the history of prescribed fires in our area, we go back 1,000 years to what scholars currently refer to as “cultural burning,” that is, the intentional lighting of small fires by indigenous people to enhance their way of life. The Lenni Lenape, native people in New Jersey, used the practice for a variety of reasons, including to facilitate travel, improve hunting, drive away insects and increase the supply of nuts and berries. Early European settlers used prescribed burns to clear the lands for towns, homes and agriculture. Starting in the 1920s, cranberry and blueberry growers used prescribed fires to burn forest fuels that threatened their fields and buildings. In 1948, after years of “experimental” prescribed burns and research, the U.S. Forest Service introduced the practice to the public as a fire management tool.

The process of fire management, explains Geoffrey Lohmeyer, County Parks Manager, is no simple task, requiring much prior preparation and planning. Each individual prescribed burn requires a permit from the New Jersey Forest Fire Service. In addition, if the county seeks what is known as forest stewardship status for a particular area, the approval of the Pinelands Commission of the plan is required. A stewardship plan, which guides the overall management of the area, is developed by an expert in forestry and includes a description of current conditions, including tree species, understory vegetation, water resources, soil conditions, wildlife resources and threatened and endangered species. It then sets goals for the enhanced protection and health of the area with specific activities to achieve those goals. Currently, stewardship plans in Ocean County include Wells Mills County Park and the Forked River Mountains.



There is a fairly narrow window within which a burn permit is valid. Burn plans are written by specialists for each of these prescribed fires. Factors such as temperature, humidity, wind, moisture of the vegetation and conditions for the dispersal of smoke are included in each plan. The period of March through May is in the highest danger for unplanned and uncontrolled fires because of the warmer winds and a lack of shade from leaves.

Prior to each individual burn, in order to prevent the fire from getting out of control and burning beyond the planned location, areas are plowed down to the bare earth, creating what is known as a fireline. Depending on the volume of the dangerous fuels, hand clearing or even machine clearing some of them prior to the burn may be necessary. Once the plan has been approved and the pre-fire precautions have been taken, the fire is lit, burning into the wind, again in order to keep the flames from getting out of control.

So, if we see or smell unexplained smoke in the distant forest, while it should of course be reported, it is likely to be a controlled prescribed burn being conducted by the Parks Department in conjunction with the New Jersey Forest Fire Service. Ocean County residents and nature enthusiasts are lucky to have a Parks Department that provides such a thoughtful approach to our forests by actively managing them to keep them in healthy condition for the present and the future and to protect nearby communities. It truly sets an example of responsible forest management.



Miller Airpark, 2019. *Photo courtesy of Geoff Lohmeyer*



Manchester Township. *Photo courtesy of Geoff Lohmeyer*

Attract Wildlife to Your Jersey-Friendly Yard

By Becky Laboy, M.Ed., Instructor for Barnegat Bay Master Naturalists, and Education Outreach Specialist for Ocean County Soil Conservation District

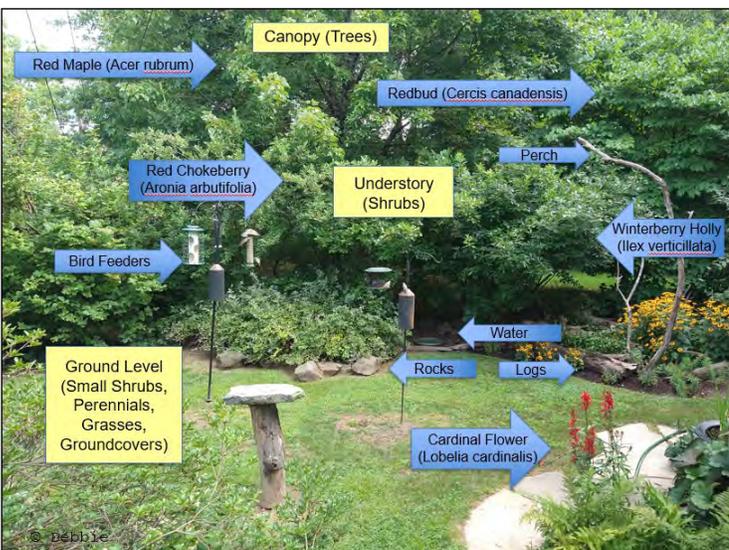
It's not easy for wildlife to eek out an existence in our human-dominated planet. In many suburban areas, we've cleared the land of all native vegetation, built large homes that fill most of the lot, planted non-native shrubs and trees, and installed thirsty turf grass. Very few native species of birds or other wildlife can adapt and survive in this "food desert." However, there is a growing movement of people who wish to re-connect with nature. We are finally realizing the need and the value of creating healthier landscapes for both humans and wildlife. You can attract hummingbirds, butterflies and box turtles to your yard by creating habitat. The higher the quality of backyard habitat we create, the more species diversity we can attract and support.

Use the [Jersey-Friendly Yards](#) website for guidance. It offers a plethora of tools and information to help you select bird-, butterfly- and bee-friendly plants for your yard. Read *Backyards for Nature*, *The Living Landscape* and *The Nature of Oaks* by entomologist Dr. Doug Tallamy. Additional favorite landscaping books include *Planting in a Post Wild World* by Thomas Rainer and Claudia West, and *Integrated Landscaping, Following Nature's Lead*, authored by Lauren Chase-Rowell, Mary Tebo Davis, Katherine Hartnett and Marilyn Wyzga.

Follow Mother Nature's lead and use the natural semblance of plants to create your wildlife-friendly yard. Native trees and shrubs provide the foundation for a bird-friendly yard. They offer cover from predators, shelter from the weather, places to nest and an abundance of food. Perennial flowers, vines, grasses and groundcovers offer additional resources for nesting materials, protection and food.

Consider the concept of an "ecosystem" when planning your landscape. An ecosystem is a biological community of interacting organisms and their physical environment. Depending on where you live - near the coast, in a development that was once a grassland, or in a community built on land that was once a forest - keep in mind the features of these natural ecosystems to gain inspiration and to help guide your wildlife-friendly landscape plan for your yard. Within this ecosystem is where an animal finds everything it needs to survive, including food, water, shelter and a place to raise its family - this is the habitat. Trees and shrubs, in particular, create the foundation for a complex habitat. A tree with a spreading canopy will provide the overstory. Smaller trees or tall shrubs provide the structure of the understory. Below are smaller shrubs, flowers, ferns, and grasses. Different species use different levels of the vertical landscape to find food, nesting places, roosting places and shelter.

A wildlife-friendly backyard habitat includes a blend of native plants, as well as carefully selected nature-inspired manmade or natural structures. A branch dug into the ground vertically like a post offers a perch for a cooper's hawk or a hummingbird. Logs provide a smorgasbord of invertebrates for birds, turtles and toads to eat, while the wood adds nutrients to the soil as it slowly decomposes. Rocks offer places for birds, garter snakes (harmless!) and lizards to hide from predators or to find shade and shelter. Bird feeders, water features, and nest boxes tucked within the trees and shrubs, as well as other natural ornaments, all replicate elements found in nature. These natural features not only add a creative and decorative touch, they provide places for animals to relax, roost, and thrive.



New Jersey is part of a contiguous biome that stretches across the eastern United States, called the Eastern Deciduous Forest region. Tree species consists predominantly of deciduous broadleaf trees such as oak, maple, birch, beech, hickory, basswood, just to name a few. These trees have leaves that drop from the branches in the fall, an adaptation allowing for the tree to conserve water and energy in the winter. Conifer trees include hemlock, spruce, fir, and pine, although they are outnumbered by the broadleaf deciduous trees. An exception is the Pine Plains within the Pine Barrens region of our state, as well as the dry rocky outcrops in northern New Jersey, where there are vast forests of Pitch Pine. Oak-pine forests dominate the southern half of our state, including the Barnegat Bay watershed. As with any garden, a wildlife garden starts with the plants. Selecting appropriate native plants that provide direct benefits to wildlife is a wildlife gardener's number one priority.





Photo by Karmela Moneta

Red Maple (*Acer rubrum*) is one of our earliest flowering trees. The early-spring blooming red flowers of Red Maple are a beacon for birds, and make the tree easy for humans to identify. Emerging new growth on Red Maple, including fruit, twigs and leaf stalks are all red. Migrating birds, including Ruby-crowned Kinglets (pictured left), forage on native Red Maple, looking for caterpillars and other insects. Kinglets are small birds, larger than a hummingbird but smaller than a chickadee. They forage at mid-level to the top of the canopy. They have high energy and rarely sit still. They use their small tweezer-like bill to pluck tiny insects from the branches. Luckily for the Ruby-crowned Kinglet and its Golden-crowned cousin, 285 species of caterpillars use maple as a host plant.

Oaks (*Quercus spp.*) are another great choice for your backyard canopy. There are over 50 native oak species in eastern North America to choose from. All Oaks produce acorns. Acorns are food for Wild Turkeys, Blue Jays, Northern Bobwhite Quail and other wildlife, including squirrels and mice. Squirrels and mice are food for many raptors. This immature Red-shouldered Hawk enjoys a meal in the safety of the canopy. Raptors, also known as birds of prey, are a keystone species, without which an ecosystem would fail.

Oaks support 534 species of caterpillars, such as the Polyphemus Moth caterpillar. It uses oak leaves as protection during pupation, which can often last through winter. "Leaving the leaves" is a concept you may be familiar with. Leaving the leaves may take some patience, tolerance and creativity. Try raking your leaves into shallow piles under your shrubs or use them as a winter blanket for your tender perennials and ferns. Leaves will not only offer habitat for moth and butterfly larvae, but will also benefit ground-scratching birds. Eastern Towhees, Fox Sparrows and many other birds prefer to forage for insects, worms and other soil dwellers in the leaf litter. Box Turtles often find refuge under a pile of leaves.

Redbud (*Cercis canadensis*) is a relatively small tree, perfect for suburban backyards. It showcases bright pink flowers that bloom in early spring - a magnet for bees. Once the flowers have finished blooming, the tree begins to grow heart-shaped leaves. The fruit matures into a flattened pea-pod containing dry seeds. Wildlife will eat the seeds in the winter, or, you may find a few extra Redbud saplings in your yard next season.



Photo by Becky Laboy



Photo by Karmela Moneta

Eastern Red Cedar is an easy-to-grow evergreen. It is an early successional tree, and one of the first trees to occupy disturbed soils. Eastern Red Cedars tolerate nutrient-poor soil and a wide range in pH, as well as salty conditions, air pollution and deer. The reddish-brown bark exfoliates in thin shreddy strips on mature trees, and is used by Cardinals and Fish Crows as nesting material. Eastern Red Cedar is not a true cedar, it is a juniper (*Juniperus virginiana*). The berries are commonly called juniper berries, although they are actually unusually shaped cones. This tree is dioecious - there are separate male and female plants. You'll need one of each in the yard or in the neighborhood for the female to produce the cones. Over 80 species of birds depend on Eastern Red Cedar berries as a food source, including Yellow-rumped Warblers, American Robins, Fish Crows and Cedar Wax-wings. Its dense evergreen boughs provide a Northern Saw-whet Owl with a thick, protective cover for shelter, roosting and eating.

As part of your understory, try these two fantastic native shrubs: **Winterberry Holly** (*Ilex verticillata*) and **Inkberry Holly** (*Ilex glabra*). Both have a height and spread of about 6-10 ft. They prefer acidic soils and moist to wet conditions, although they can both tolerate dryer conditions once they are established. They grow in full sun to part shade. Both feature small white flowers that bloom in June and July, and are attractive to bees and butterflies. Winterberry Holly develops bright red berries that cling to the stem throughout the winter, even after the leaves drop on this deciduous shrub. Black berries develop on Inkberry Holly, and persist throughout the winter, tucked between the evergreen leaves. Berries that fall to the ground are forage for turtles and small mammals - kept in check by our raptors.

The space beneath these shrubs is also useful habitat for wildlife - a protective shelter for secretive ground-scratching sparrows. Sparrows occupy the lower levels of the ecosystem, utilizing medium to small shrubs, ferns, grasses, flowering herbs and groundcovers for food, nesting places and shelter. Ground level plants provide hiding spaces and nesting places for shy birds.



Photo by Becky Laboy

[Summersweet](#) or Sweet Pepperbush (*Clethra alnifolia*) is a versatile, attractive, wildlife-friendly shrub. It prefers partial shade, slightly moist soil, and makes an excellent understory plant. It is multi-branched, deciduous, with dark green, aromatic leaves, and grows 5-8 ft. tall and 4-6 ft. wide. The summer-blooming, sweet-smelling clusters of white flowers are extremely attractive to pollinators. Nectar foragers include hummingbirds, native bees and butterflies including Spicebush Swallowtail (pictured right). Tiny soldier beetles congregate on the flowers to harvest pollen. The flowers are followed by dried fruit capsules that house the seeds, which are enjoyed by birds, including American Goldfinch. Summersweet is slow to establish but relatively easy to grow. It's delightful!



Flowering perennials, grasses, ferns and groundcovers provide important resources for wildlife ranging from food to shelter to nesting places. Include a variety of species of ground-level plants in your yard or garden. Tuck them beneath your understory shrubs or around the sunny edges of your canopy.

[Woodland Sunflowers](#) (*Helianthus divaricatus*) grow to be 5-6 ft tall and provide long-lasting summer blooms. A variety of pollinators visit the flowers, including bees, butterflies and hummingbirds. Once the seeds begin to mature, American Goldfinches prop themselves on the sturdy stems and lean-in to pluck the seeds. It's entertaining to watch them perform botanical acrobatics in the garden. Woodland Sunflowers aren't picky about the soil and can thrive in sand, loam and clay. They are drought-tolerant and grow in both full sun and partial shade.



[Cardinal Flower](#) (*Lobelia cardinalis*) prefers more moisture in the soil and won't tolerate full sun. A slightly moist, partly shady area within your understory will provide the perfect spot. The ruby red flowers attract Ruby-throated hummingbirds - the only hummer species to migrate east of the Appalachian Mountains. They will be competing for nectar with swallowtail butterflies and long-tongued bees, who are also attracted to the bright color, and can access the nectar within the tubular-shaped flowers.

Ferns add greenery and texture that keep a garden looking fresh all season long. The 'fuzz' that covers the fiddleheads of the [Cinnamon Fern](#) (*Osmunda cinnamomea*) is used as nesting material by birds, including Chickadees and Tufted Titmice, who like to line their nest with soft materials. [Bearberry](#) (*Artostaphalos uva-ursi*) and Prickly Pear Cactus (*Opuntia humifusa*) are both excellent groundcovers for dry, sandy soils. Bearberry is

native to the Pine Barrens and Prickly Pear, New Jersey's only native cactus, grows prolifically on the coast. Both have flowers that offer nectar and pollen to pollinators, as well as fruit for birds, turtles and other wildlife.

To compliment your suite of native plants, add some nature-inspired human-made features to your yard such as a nest or roosting box, a bird bath, pan of water or pond, a brush pile, and a bird feeder. Supplementing wildlife with items that provide functions typically found in nature offers additional support in their daily quest to survive and thrive. Want more ideas? Consult the [Jersey-Friendly Yards](#) website!



How to Grow and Propagate Elderberry

By Lisa Mazzuca

Barnegat Bay Master Naturalist, Class of Spring 2018

Easy-to-Grow Native Beauty

The genus *Sambucus* is a group of flowering plants in the family Adoxaceae. American Elderberry (*Sambucus canadensis*) is native to the northeastern U.S. They are fast-growing, fountain-shaped shrubs that are found along the forest's edge, streams and roadsides. The mature height can be 10'-12' which they will achieve within 3 years of planting.

Elderberry is easy to grow in residential landscapes in New Jersey. As a large, fast-growing shrub, it provides a quick privacy barrier between you and your neighbors, intoxicating smells while blooming in summer and a lush backdrop for perennial borders. This plant thrives in part-shade conditions; the edges of branches can wilt during hot dry periods when located in full sun. It needs no fertilizer, even in low nutrient soils, and provides even more functionality by supporting wildlife with edible berries in August.



Mature Elderberry (*Sambucus canadensis*) Photo: Lisa Mazzuca

Edible and Medicinal

Elderberry produces flowers in summer with tiny white blooms that create large umbrels, which make the whole yard smell absolutely divine! The flowers are followed by bunches of small green berries that turn black when ripe. These berries are coveted for their medicinal properties, as well as their flavor and sweetness. Beware that raw berries are toxic and can cause stomach upset. They are best enjoyed when processed into syrup, wine, baked goods, or jam.



Elderberry flowers (*Sambucus canadensis*) Photo: Lisa Mazzuca

Harvest ripe berries by clipping the bunches from the shrub and gathering in large bags or buckets. One mature elderberry can yield a large garbage bag full of elderberry bunches!



Bunches of fresh elderberries (*Sambucus canadensis*) Photo: Lisa Mazzuca

Recipe for Elderberry Syrup:

- 6 cups of water
- 4 cups of fresh elderberries
- 1/2 tsp dried ginger
- 1/2 tsp powdered cinnamon
- 1 1/2 cups raw honey
- 1 cup vodka

Combine berries and herbs with cold water in pot and bring to a boil. Reduce heat and allow herbs to simmer 30 to 40 minutes. Remove from heat and let steep 1 hour. Strain berries and herbs using a sieve overlaid with doubled cheesecloth and squeeze out liquid (careful, liquid will likely still be hot!). Discard used herbs in compost. This leaves you with approximately 5 cups of liquid. After it's almost cool to just above room temperature, add 1 1/2 cups raw honey and 1 cup vodka and stir to incorporate. Bottle in sterilized glass and store in the refrigerator. It's very stable. I freeze anything I won't use within 3 months. Frozen syrup is viable for up to 1 year.

How to Make More Elderberry Plants

1



1) In early spring, take cuttings that are about 8"-12" from the ends of your elderberry branches.

2) Put them in water and change the water every 2 or 3 days. To encourage roots to form, I like to include one or two branches of willow in the water with my elderberry cuttings. Willow branches release a natural rooting hormone. Within 2 weeks you will start to see roots! Keep changing the water until the roots are substantial enough to support the plant in soil. I like to wait until I see at least 2 or 3 inches of roots coming from more than one spot on the submerged part of the branch.

2



3



3) At that point, get some pots with drainage holes, and carefully pot up the rooted cuttings. The roots that form in water are VERY fragile, so add the soil cautiously around those delicate roots so they don't snap off.

4) Keep them well-watered and out of direct sunlight for a week or two.

4



5



5) The new plants can be moved outdoors safely in May.

Watch this video showing how I prune and propagate my elderberry plants from cuttings. <https://youtu.be/ZCM2XXL4FYU>

Once the cuttings form roots, it's time to pot them up! Watch this video to see how to do it. <https://youtu.be/pzdEZNO5JSg>

A Newsletter for and by
Barnegat Bay Master Naturalists and our Affiliates

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- Connect with other Barnegat Bay Master Naturalists through our [Barnegat Bay Master Naturalists Facebook Group](#).
- Join the [Barnegat Bay Master Naturalist iNaturalist group](#) and share photos of your nature sightings with fellow BBVMNs.

We're on the web! www.BarnegatBayPartnership.org

LEARN, PROTECT, EXPLORE



Answers to Species ID Quizzes

Are you a Bird Brain?: Species 1: **Eastern Wood Peewee**, Song Source: Andrew Spencer, XC33539. Accessible at www.xeno-canto.org/533539 2: **Killdeer**, Song Source: Ed Pandolfino, XC482277 Accessible at www.xeno-canto.org/482277 3: **Sharp-shinned Hawk**, Song Source: William Whitehead, XC660802 Accessible at www.xeno-canto.org/660802 4: **Cooper's Hawk**, Song Source: Lance A. M. Benner, XC388120 Accessible at www.xeno-canto.org/388120.

Are you a Botanical Genius?: Species 1: **Shagbark Hickory** (*Carya ovata*), Species 2: **Bladdernut** (*Staphylia trifolia*), Species 3: **Star Flower** (*Trientalis borealis*)

