

# Gardening with Nature

*A Guide To Native Plant Landscaping  
in the New Jersey Pinelands*



Produced by Pinelands Preservation Alliance  
17 Pemberton Road, Southhampton, NJ 08088 - Phone 609.859.8860

In partnership with:

Pinelands Nursery & Supply - [www.pinelandsnursery.com](http://www.pinelandsnursery.com) - 800-667-2729  
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### But Aren't Fertilizers Good for Plants?

Fertilizers are killing the Pine Barrens. This may seem paradoxical, but it's true. The Pine Barrens is distinctive because its natural soil and water conditions are very acidic and low in nutrients (nitrogen, potassium and phosphorous). Native plants and animals are those that have adapted to these conditions. Adding nutrients or neutralizing the naturally acidic soil changes the chemical properties of the soil, negating the conditions that make this area the Pine Barrens. This not only suppresses many native species, but also opens the door to invasive species that can suppress or even replace native plant and animal communities. In and around the Pinelands, it is best to allow nature to take it's course and put away the fertilizers and lime.

### Critter Control

If you live in a characteristic Pine Barrens area, one of the biggest keys to successful native landscaping is controlling the animals — especially deer — that want to eat your plants. You probably have a wonderful diversity of native plants in and around your landscape, but if deer visit your property you may need to take steps to control deer browsing. Since deer will eat virtually any native plant, the most effective strategy is to exclude them from the portions of your yard that you want to cultivate.

Deer can be excluded (or at least effectively discouraged) either by setting up electric fencing or by installing a 7-8 foot high fence. Various types of deer fencing are available commercially. One rather unobtrusive type is a black plastic mesh that virtually disappears when viewed from a distance. This can effectively exclude the deer while maintaining an open and natural-looking landscape.

### Why Go Native in the Pinelands?

Your yard is a part of the wider landscape in which you live. It can be a haven for native plants and animals, or an island of alien species living here only because we have created artificial conditions in which they can survive and displace native flora. Your lawn can be at one with the natural Pinelands ecosystem, or it can be a beach-head for invasive species and an opening through which human pollutants flow into the soil, the aquifer, streams, and wetlands.

Most of our yards will fit both pictures to some degree. This guide aims to help you make your property an asset to the natural community of the Pinelands, while avoiding harm as much as possible.

There are lots of reasons to plant native plants anywhere you live — but these reasons are even stronger if you live in and around the Pinelands. In this region, our acidic, low-nutrient soils make it all the more important to go native. Native species do better because they are adapted to our unusual soil conditions, and taking care of these plants does not cause the environmental harm that fertilizing and watering non-natives generally brings to our aquifers and the vulnerable Pine Barrens ecosystem.

Here's a quick run-down of the reasons to go native in and around the Pinelands:

- Help save the unique botanical heritage of this extraordinary region.
- Reduce your watering costs.
- Reduce the time and money you spend on maintenance and replacing unsuccessful plants.
- Reduce or eliminate the need to spray pesticides.
- Reduce or eliminate the need to add fertilizers or lime to the soil.
- Attract native species of birds and butterflies.
- Cultivate a garden at one with the land in which you live.

### There's No Place Quite Like It: The Pinelands' Unique Botanical Heritage

The New Jersey Pinelands is home to plant communities found nowhere else on earth, and a growing number of individual species can be found only in our Pinelands, because they have been or are being wiped out in the rest of their natural range. The community of plants found here also does not exist anywhere else, as the New Jersey Pinelands is a unique mixture of southern and northern species that found a haven here after the last ice age and the warming cycles of the past 10,000 years. All this means that we have something very special to protect — and even cultivate.

The New Jersey Pine Barrens isn't barren at all. It's just different from most other regions of North America. It was called barren by early European settlers who found they could not grow their row crops in the sandy, droughty, low-nutrient upland soils. The negative epithet stuck, creating the false impression that things don't grow in the Pine Barrens.

In fact, beyond the familiar pines and oaks of our forests, the New Jersey Pine Barrens ecosystem has about 800 species of flowering plants and 25 species of fern. We have beautiful wildflowers — some common, some very rare even in the heart of the Pinelands — and we have several species of carnivorous plants, like the pitcher plant and sundews. Numerous species are commercially available and easily cultivated. We have beautiful and useful shrubs, like Highbush Blueberry and Low Blueberry, Swamp Azalea, and Mountain Laurel.



(Many species that could be cultivated are not yet easily available, but organizations like the Pinelands Preservation Alliance and some nurseries are working to expand the supply.) Even when you plant common native species, you are helping conserve the rarer species by using plants that are compatible with — will not displace — other natives.

### Principles for Your Garden To Live By

- Each plant in the right place: be sure to follow our guidance on the right conditions for each plant, whether sun or shade, and dry or moist soil.
- Design with nature by creating habitats through your gardening.
- Remove exotic and invasive species wherever you can (see below).
- Water only when you are establishing a planting, or when your plants show signs of stress.
- If you use a sprinkler system, install an automatic rain gauge to prevent watering when it's raining or when the soil already has adequate moisture..
- Install drip irrigation or soaker hoses for more efficient use of water and to prevent excessive watering and loss of water through evaporation from overhead sprinkler systems.
- Eliminate the use of fertilizers, lime, and pesticides, or reduce their use as much as you can.
  - Tolerate low levels of insects (it's natural!).
  - If you use pesticides, do focused spot treatments of infected plants and
  - Try the least-toxic method, such as horticultural oils, insecticidal soaps, biological controls (*Bacillus thuringiensis* -BT), and vinegar (to kill or suppress weeds).
- Mulch: Use composted wood chips or pine needles for mulch. They don't add chemicals to the environment, and they provide a natural, slow release of nutrients.
- Recycle your clippings by making compost, and leave grass clippings in place to naturally fertilize your lawn. Avoid cutting your lawn too low (scalping) to improve lawn vigor and reduce weed competition.



## Natives and Cultivars: What's In a Name?

Native plants are those that came and flourished here without human help because they are adapted to local conditions of climate and soil. In many cases, these native species have been cultivated and hybridized by people seeking to make them showier, hardier, taller or shorter. Cultivars are not strictly native, but are, in some cases, very close to the native species. Some cultivars of native species may be good choices for your garden, but you have to be sure the plant you buy is really a cultivar of a native species, and not some other plant with an ambiguous common name. To do this, take the full scientific name – as in *Kalmia latifolia* for Mountain Laurel – with you when you shop for plants, and confirm from the tag or label on the plant that it is the species you want. Cultivars should be identified with an additional name, as in *Kalmia latifolia* Bravo or *Kalmia latifolia* Pink Charm. Cultivars of native species are not necessarily well-adapted to the typical conditions of true natives, so it's a good idea to do some research before buying.

## Pinelands vs. Pine Barrens

These terms are often confused, but here is the right way to use them. Pine Barrens refers to the ecosystem marked by acidic, low-nutrient soils and waters, and the plants and animals adapted to these conditions. Pinelands refers to the area designated for special controls on development by the Pinelands Protection Act. The Pine Barrens is a creation of nature; the Pinelands a creation of governors and legislators. The Pinelands boundary contains much, but by no means all, of the historic Pine Barrens ecosystem.

## Creating Pinelands Habitats

One of the most interesting and enjoyable ways to landscape is to create genuine characteristic native Pine Barrens habitats on your property. The easiest and most natural approach is simply to help your property – or portions of it – return to the natural habitat it once was. You can promote the species you most enjoy seeing and remove or discourage those you do not want.

If the soils on your property have not been chemically altered (to raise the pH or add more nutrients), then you may want to just manage existing vegetation to suit your tastes. If you have extensive mowed lawn, you can stop mowing some areas and let the local native plants move back in. Mowing once a year or once every other year, in the late winter, can be an excellent way to re-introduce the native diversity to your property, without letting the area grow back into brush land or forest.

In areas where non-natives have been cultivated, especially if lime and fertilizer have been added, the process takes a little more time and effort. The best way to begin is to compare your property with adjacent or nearby natural areas. Tour a variety of local natural areas at various times of the year and take note of the wildflowers and shrubs. A wide variety of field guides are available to help you identify these species. Make a list of the plants you like. Cultivating these natives will probably involve reverse-conditioning of the soil, aggressive control of non-natives, and re-introduction of the natives.

If you have conditioned your soil with lime and fertilizer, it will take time—probably a few years—to reverse-condition it. You may find that some characteristic Pine Barrens plants will not do well in enriched soil since they are better adapted to growing in acidic soils and under low nutrient levels. Also, Pine Barrens soils that have been enriched with compost or rich topsoil are likely to retain more moisture, and dry, upland Pine Barrens species (such as Bearberry) need well-drained conditions.

You can hasten the process of returning to native conditions by repeatedly cutting to the ground and removing the existing non-natives. Removing the cut vegetation (such

as grass clippings) during the growing season helps to weaken the unwanted plants, and it pulls some of the excess nutrient out of the soil. In time, the soil will tend to return to its more natural state.

You can also remove non-natives by uprooting and discarding them (or transplanting them to a non-Pine Barrens location). It's important to not simply plow them under, as this will add nutrient to the soil. Once you have removed most of the non-native plants, you will probably need to follow up by controlling the seedlings that are likely to emerge. This can be accomplished by covering the area with black plastic for a spell. You may need to do this several times, as different seeds will germinate at different times during the growing season.

Another effective non-chemical technique for controlling unwanted plants involves covering them with newspapers. Once most of the plants have been removed or scalped, cover them with three thicknesses of ordinary newspaper (avoid glossy material, as this is likely to contain higher levels of heavy metals), and then cover the newspapers with a few inches of sterile sand. You can arrange the newspapers around plants you wish to preserve or come back later and cut through the newspapers to put in the plants you want.

When you re-introduce native plants, pay special attention to the light and moisture conditions of the area. Some Pine Barrens plants thrive in the shade, while others will prefer a location with partial sun. Some like it droughty, and others are adapted to constant moisture. All the skills of landscaping and cultivating plants need to be employed when re-creating native Pine Barrens habitats.

## Wildlife Will Love Your Garden

The New Jersey Pinelands provides habitat for 290+ kinds of birds, including 140 species that nest within the Pinelands. In addition, 34 kinds of mammals and 58 kinds of reptiles and amphibians live here. Among the Pinelands inhabitants, there are about 21 species of birds and 19 species of reptiles and amphibians listed by the state as threatened or endangered. There are many more birds, plants, reptiles, butterflies, and other invertebrates in the Pinelands listed as species of special concern.



You can help Pinelands creatures by planning your outdoor space to include wildlife habitat. Quality habitat includes high nutrient food sources, structure, adequate shelter, water, and freedom from toxins and non-native predators. You don't need to be an expert gardener to create suitable habitats for wildlife.

Here are some helpful guidelines:

### Create a Plan

Look at your yard. Decide how much space you really need for outdoor activities such as play areas, barbeque and picnic sites. Then decide how much area you can dedicate to wildlife habitat. Remember, even foundation plantings and beds near your entertainment areas can be attractive and wildlife friendly. A spot that gets sunlight for most of the day is a great place for a wildflower garden to attract butterflies and hummingbirds.

### Plant Native

Native plants of the Pinelands have co-evolved with the wildlife. They provide the proper nutrition for local residents. Some insects, including butterflies and moths in their caterpillar stage, are species specific: able to eat only certain plants. Our native oak trees provide food for 43 species of animals and many insects, including butterflies and moths. Many of the frequently planted exotic plants have little or no nutritive value.

### Create Structure

By adding vertical structure to your plantings, you can support a greater diversity of birds and other animals. The next time you walk through a local woodlot, look at its structure. There are usually three obvious levels. The lowest plants make up the groundcover and may include mosses, lichens, grasses, Bracken or other ferns, and small shrubs such as Low Blueberry or Black Huckleberry. The next level includes taller shrubs such as Mountain Laurel, Sheep Laurel, Sweet Pepperbush, Bayberry, Scrub Oak, and Highbush Blueberry. The tallest level includes canopy trees such as Pitch Pine, Post Oak, Red Maple, American Holly, Atlantic White Cedar, and Sour Gum. Many birds and





## Supply and Demand: Where Can We Find these Plants?

Because the sources for many of native species is changing, we list reliable sources on the Pinelands Preservation Alliance web site, [www.pinelandsalliance.org](http://www.pinelandsalliance.org). If you do not have access to the web, please call the Alliance to obtain a current list (see phone number below).

The Pinelands Preservation Alliance holds an annual native plant sale around Earth Day in April, where the species highlighted here may be available for purchase. Contact the Alliance for details.

Sometimes the native species you want are hard to find, and few local gardening stores carry a variety of native species. This guide highlights species that are normally available in southern New Jersey, though some may be difficult to find in your neighborhood. Many plants are available by mail order. Others are probably growing in your yard right now, and simply need to be noticed and protected.

If you are having trouble, please go to the Pinelands Preservation Alliance web site at [www.pinelandsalliance.org](http://www.pinelandsalliance.org) or contact the Pinelands Preservation Alliance at [ppa@pinelandsalliance.org](mailto:ppa@pinelandsalliance.org) or (609) 859-8860.

animals are specific to one or more level of this “house.” When creating plantings, incorporate structure by adding new levels to the existing ones. A trellis, arbor, or pergola, for example, supporting Wild Grape or Virginia Creeper can create middle-level structure quickly.

### *Provide Shelter*

Mix native evergreens such as American Holly, Short-leaf Pine, and Mountain Laurel into your plantings. They help provide shelter for you and your wild friends from both summer sun and winter winds. Plants placed in groups, rather than rows, provide better shelter. Studies have shown that commonly planted exotics such as Japanese Barberry provide inferior protection for nesting birds. Use natives whenever possible.

### *Provide Water*

Every living creature needs clean water. Birds need the water to drink as well as for bathing. If a natural source of water is nearby, avoid the use of chemicals that may contaminate it. If a natural source is not nearby, create a pond or supply a birdbath, or mister. If providing a birdbath, be sure to change the water frequently and keep it clean. Special heaters are available to keep birdbaths or ponds from freezing in winter.

### *Minimize Toxins*

Everything you do in your yard affects the resident and visiting wildlife. Avoid or minimize chemicals that could injure or kill birds, butterflies, or other wildlife. There are numerous websites that provide information about alternatives to commonly used insecticides and herbicides.

### *Don't Introduce Predators*

According to the U.S. Fish and Wildlife Service, domestic and feral cats may kill hundreds of millions of songbirds and other avian species each year. Scientific studies show that cats, even well fed cats, have a natural instinct to hunt, and will kill birds and other wildlife indiscriminately. For more information on this problem and its remedies go to: [www.njaudubon.org/Conservation/CatsIndoors/FAQ.html](http://www.njaudubon.org/Conservation/CatsIndoors/FAQ.html)

Every year, New Jersey adds 1,600 acres of new development, destroying 2,600 acres of wetland and 4,200 acres of forest. Studies



have shown that the loss of species is proportionate to the loss of habitat. As homeowners, we can make a difference by including a plan for wildlife in our own backyards. The more habitat we create in and around the Pinelands, the better it will be for our native wildlife.

### **Lawns in the Pinelands**

Many of us love our lawns, but there is no getting around the fact that, in the Pinelands, lawns of Kentucky Bluegrass and other common cool-season turf species are not good for the environment. Those turf species are not adapted to local soil conditions, so they require an abundance of fertilizers, lime, pesticides, and irrigation. Much of the fertilizer and pesticide we put on the ground ends up getting washed into the aquifer or directly into streams and wetlands, leading to chemical and biological changes that harm native flora and fauna. Irrigation drains the aquifer, as most of the water pumped up for watering lawns is evaporated and lost to the atmosphere.

We have two suggestions when it comes to lawns:

- Try using native, warm-season grass and sedge species for your lawn. Possible species to try are shown in the plant list of this guide.
- Reduce the size of your lawn as much as possible, compatible with how you actually use your lawn.

## **Fire Safety**

The Pine Barrens is a fire-prone and fire-adapted ecosystem. It's important to design your landscaping to reduce the risk of damage from natural or man-made wildfires.

Here are suggestions for your landscaping:

- Create and Maintain Defensible Space:
  - Selectively remove or thin trees, bushes, shrubs and ground cover, and remove dead plant material, every year, in order to maintain a fire break around buildings as follows:
    - 30 feet in low fire hazard areas (non-Pine Barrens forest and prescribe burned areas).
    - 75 feet in moderate fire hazard areas (Pine Barrens forest including mature forms of pine, pine-oak, and oak-pine).
    - 100 feet in extreme fire hazard areas (immature or dwarf forms of pine-oak or oak-pine forest, all pine-scrub oak & pine lowland forests).
- For foundation plantings, use fire resistant, low growing plants that have a low sap or resin content. Do not use rhododendron, mountain laurel, or other highly flammable evergreens.
- Plant ornamental shrubs and shade trees near your house at least 15 feet apart, and prune tree limbs to a height of 15 feet to prevent the spread of ground fire to tree tops.
- Clean roof and gutters regularly to prevent accumulation of pine needles, twigs, leaves and other flammable materials.
- Remove dead limbs adjacent to or over your house.
- Keep 100 feet of garden hose pre-connected and racked.

For more complete information on fire safety tips, visit the Pinelands Commission's web site at: [www.state.nj.us/pinelands/infor/fact/better%20firetips.pdf](http://www.state.nj.us/pinelands/infor/fact/better%20firetips.pdf).