

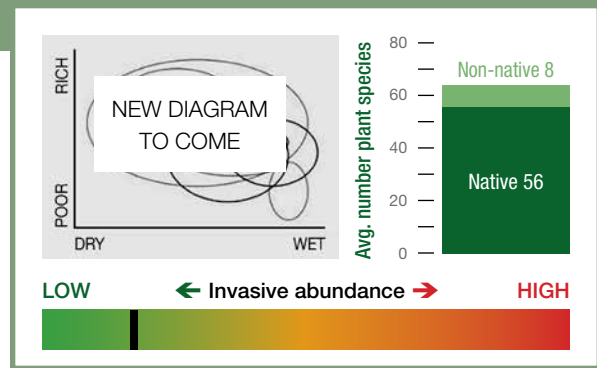
# Oak-Maple Forest



Oak-Maple Forest might well be the most extensive of our mature and often ancient forest habitats, and it often strikes people as a “typical” local forest. It is intermediate in character between Northern Hardwood and Dry Oak Forest, and might be somewhat of a “grab-bag”—including forest stands with different histories and trajectories. Its large oak trees are an important source of timber, and its extensive stands provide habitat for many forest (and especially forest interior) organisms.

## First Glimpse

Oak-Maple Forest tends to feel like a typical deciduous forest with good-sized trees. It is not quite as shady and cool as Northern Hardwood Forest, but also not quite as airy and light-filled as Dry Oak Forest. The understory is relatively open with few shrubs, vines, and ferns, and one feels invited to walk between the stately trees. The largest trees are usually oaks (most often Red Oak, although they are sometimes joined by White, Chestnut, and/or Black Oak), which tend to grow taller and straighter here than in the Dry Oak Forest. In mast years, when the oaks produce ample acorns, moving through this habitat in the autumn can feel like walking on marbles. The crowns of the large oaks tend to emerge above the canopy, which is formed mostly by maple trees (Sugar and/or Red Maple). These may be accompanied by small numbers of other deciduous and—occasionally—evergreen species. Most of the birdlife in this habitat seems to happen out of sight, high up in the canopy.

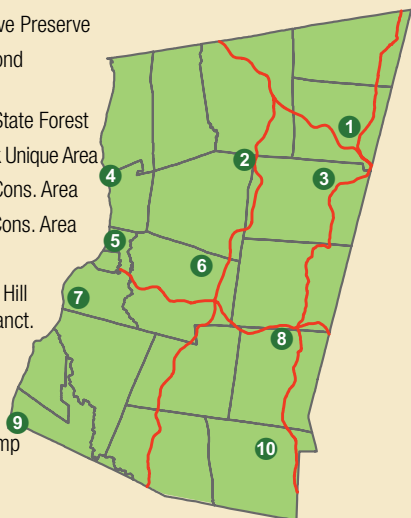


## Location

Oak-Maple Forests can be found throughout the county, but are most extensive in the cooler, northeastern part. They also occur on clay bluffs along the Hudson River and on isolated calcareous hills throughout the county. They tend to be located at low to mid-elevation, often, but not exclusively, on north- or west-facing slopes, and on a variety of soils and bedrock types.

## Distribution of Oak-Maple Forest and Places to Visit

1. Merlin's Cave Preserve
2. Borden's Pond Cons. Area
3. Beebe Hill State Forest
4. Nutten Hook Unique Area
5. Greenport Cons. Area
6. High Falls Cons. Area
7. Olana
8. Rheinstrom Hill Audubon Sanct.
9. Clermont State Park
10. Drowned Lands Swamp Cons. Area



## Visiting

The map highlights only a small selection of the many publicly accessible examples of Oak-Maple Forest in our county. Visit them in spring to look for migratory warblers in the tree canopy and hunt for the sparse yet diverse spring flowers. Go for a refreshing summer walk in the cool shade of one of these forests on the banks of the Hudson, or climb “Old Croken” in Drowned Lands Swamp for an amazing view in any season.

## What to Look For

**Plants:** As described above, the trees of Oak-Maple Forest are dominated by species also common in other habitats. The same is true of the other vegetation layers. Poison Ivy and Virginia Creeper are reliable components of the ground cover, but almost never climb into the canopy in this habitat. Maple-leaved Viburnum, typically knee-high, might be more abundant here than in other forest types. Ferns tend to be scarce. Nevertheless, we did observe quite a variety of rare plants in stands of Oak-Maple Forest on calcium-rich substrate. In addition to those listed in Some Species of Conservation Concern, we also found the locally rare wildflowers Smooth False Foxglove, Seneca Snakeroot, Orange-fruited Horse-gentian, and Yellow Pimpernel associated with this habitat.

**Birds and Mammals:** Scarlet Tanager and other forest interior birds such as Ovenbird, Wood Thrush, and Eastern Wood-Pewee can be seen in these woods. Turkeys pass through, foraging for acorns and grubs and sometimes roosting overnight high in the forest canopy. As a common part of our forest matrix, this habitat is also frequented by Deer, Raccoon, Coyote, and a range of our other mammals, such as the squirrels and mice that devour the acorns.



White M Hairstreak (Butterfly) NYS  
Aureolaria Seed Borer (Moth) NYS  
Painted Wood Fly NYS

## Characteristic Plants

The following species are common in this habitat, but not necessarily unique to it.

- \* Indicator species
- Non-native species
- Invasive species

### TREES

Hop-hornbeam  
Red Maple  
Red Oak  
Sugar Maple  
White Oak

### SHRUBS

Witch-hazel  
Maple-leaved Viburnum

### FORBS (e.g. WILDFLOWERS)

Blue-stemmed Goldenrod  
Early Meadow-rue  
Garlic Mustard ●  
White Wood Aster

### GRASSES, SEDGES, & RUSHES

Pennsylvania Sedge



A typical Red backed Salamander is pictured on the right, the lead-backed color morph of this species on the left.



The Scarlet Tanager is a forest interior bird that needs large forests to sustain local populations.

*Oak-Maple Forest is most similar to Northern Hardwood Forest, and the distinction is not always clear-cut.*

*Ants of the genus Temnothorax build tiny nests in acorns.*



**Amphibians and Reptiles:** Our common forest amphibians and reptiles, such as Red-backed Salamanders, Wood Frogs, American Toads, Spring Peepers, and Garter Snakes, are probably all regulars in this habitat, augmented in places by Four-toed Salamanders, Gray Treefrogs and some of the mole salamanders such as the Spotted Salamander. Interestingly, while the standard red-backed morph of the Red-backed Salamander was about 40 percent less common in this habitat as compared to in its most favored habitat (Northern Hardwood Forest), the lead-backed morph of this species was about 40 percent more common in Oak-Maple Forest.

**Insects and Other Invertebrates:** Several species of ants (of the genus *Temnothorax*) nest inside hollow acorns and, of all our major forest types, they seem most common



*At right: Ground beetles of the genus Sphaeroderus prey on snails; their pointed head might facilitate entry through the opening in snail shells.*

## Some Species of Conservation Concern

Geographic region of conservation concern is indicated by **CC** (Columbia County), **HV** (Hudson Valley), **NYS** (New York State), **US** (United States); see Introduction for explanation.

### PLANTS

American Ginseng	<b>NYS</b>
Four-leaved Milkweed	<b>HV</b>
Greater Yellow Lady's Slipper	<b>NYS</b>
Hackberry	<b>HV</b>
New Jersey Tea	<b>HV</b>
Nodding Trillium	<b>NYS</b>
Poke Milkweed	<b>HV</b>
Smooth-leaved Honeysuckle	<b>HV</b>

### BIRDS

Cerulean Warbler	<b>US</b>
Kentucky Warbler	<b>US</b>
Red-headed Woodpecker	<b>US</b>
Wood Thrush	<b>US</b>

### REPTILES

Eastern Box Turtle	<b>NYS</b>
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### AMPHIBIANS

Jefferson Salamander	<b>HV</b>
Slimy Salamander	<b>HV</b>

### INSECTS

White M Hairstreak (Butterfly)	<b>NYS</b>
Aureolaria Seed Borer (Moth)	<b>NYS</b>
Painted Wood Fly	<b>NYS</b>



*The Mourning Cloak (drawing by Kathy Schmidt) is often one of the first butterflies seen early in spring, when overwintering adults emerge from their shelter and drink sweet tree sap (which might be oozing from a bark injury or a broken twig of Sugar Maple or other trees).*

in Oak-Maple Forest. Otherwise, the ant fauna does not appear to be very distinct from that of other forest types. Carpenter ants are fairly common, as are other forest ant genera (that is, *Aphenogaster*, *Formica*, *Lasius*, and *Myrmica*) and termites. This habitat shares an abundance of *Pterostichus* ground beetles with our other forested habitats. The relative abundance of the beetle *Sphaeroderus* is probably associated with the regular occurrence of snails, which are among its prey. The widespread Little Wood Satyr and Mourning Cloak butterflies are occasionally observed in Oak-Maple Forest.



*Maple-leaved Viburnum is only superficially similar to a true maple; it is distinguished by its velvety leaves and white flower clusters (which produce black berries).*

## Similar Habitats and Variation within the Habitat

Oak-Maple Forest is most similar to Northern Hardwood Forest, and the distinction is not always clear-cut. Both of these habitats have large Red Oak trees (many over 20 inches in DBH), but the largest Sugar Maple trees in Oak-Maple Forest are often smaller (most of them barely reach 15 inches in DBH) than those in Northern Hardwood Forest (which are usually at least 15 inches, often more, in DBH). Furthermore, Oak-Maple Forest tends to have fewer Hemlock, Beech, Basswood, and Yellow Birch, and more oaks in addition to Red Oak. In general, it is a drier habitat, with fewer ferns and spring flowers. Oak-Maple Forest is also somewhat similar to Dry Oak Forest, but tends to have more Sugar Maple and fewer Red Maple and White Oak in the canopy. Also, lowbush blueberries and other indicators of Dry Oak Forest are rare in the ground flora. Oak-Maple Forest can be distinguished from Young Hardwood Forest by the relative scarcity of large Red Oak and the presence of early successional indicators, such as Black Cherry and White Birch.

A botanically species-rich variety of Oak-Maple Forest occurs on limestone hills and the clay banks of the Hudson River. It is in these Oak-Maple Forests where we found most of the rare plants.

## Stewardship

Oak-Maple Forest is one of our “workhorse” forest types. Because of its abundance in our landscape, it provides much of the habitat for forest (and especially forest interior) organisms. Because of its potential to provide marketable timber, it is also a common habitat for logging. Oak-Maple Forest is neither rare nor strictly confined to certain narrowly defined locations in the landscape. As such, we would recommend the generalized “good forest practices” mentioned in the Introduction to Wooded Upland Habitats.

Most Oak-Maple Forest stands are mature forests that would take a century or more to return if clear-cut. Therefore, if timber harvest is desired, we recommend selective logging that only creates small canopy openings and imitates small-scale natural disturbance. We strongly discourage clear-cutting in this habitat. In species-rich Oak-Maple Forests, such as on clay bluffs along the Hudson and on limestone hills in the Harlem Valley, even selective logging could be a problem. These sites seem to be particularly prone to colonization by invasive plants wherever the canopy is opened, and selective logging might quickly make the forest more “weedy.”

## History

All of the Oak-Maple Forest stands we have studied had a closed forest canopy in the 1940s (determined by examining the earliest available aerial photographs of our county). Most of them occur on land whose microtopography shows little sign of past plowing. Many therefore can be considered “ancient forests,” although we suspect that logging might have played an important role in shaping at least some of these stands.

This habitat provides a good venue for considering forest development and for making the point that a given forest type can come about in a variety of ways. We hypothesize that processes leading to Oak-Maple Forest include the following:

1. Such forest may be an “edited” version of a Northern Hardwood Forest. Red Oak and Sugar Maple are currently favored for timber, and when forests are managed long-term for timber production, competing trees of other species are sometimes removed. Furthermore, Red Oak and Sugar Maple are among the tree species that respond well to the small canopy breaks created by selective logging.
2. An Oak-Maple Forest may develop from a Dry-Oak Forest that has undergone “mesophication,” which means moving from a forest type associated with drier conditions toward one associated with moister conditions. Although climate change could presumably lead to such a transformation, forest ecologists such as Michael Nowacki, Mark Abrams, and John Kotar have suggested that reduced burning, because of forest fire control and perhaps changing land-clearing practices (that is, a cessation of the controlled burns once practiced by indigenous and colonial settlers), has resulted in an increase of less fire-adapted species such as the maples.



3. This forest may represent a relatively stable collection of species drawn together by the particular soil, hydrology, and climate of a given site, although true long-term stability in forest composition is unlikely given shifts in climate, together with periodic random events such as blow-downs, ice storms, and pest or disease outbreaks.

Distinguishing these trajectories for any particular location is not easy, but several lines of evidence can provide clues.

First, cut stumps and multi-trunk trees can indicate past logging activity. Forests formed by the first process should show signs of logging, and stump inspections can give you an idea of whether oaks or some other species were removed. The composition of young trees versus canopy trees might help distinguish the second and third trajectories; a forest undergoing mesophication may show an understory with more northern hardwoods (for example, Sugar Maple) than its overstory, whereas relatively stable stands would have a similar tree species composition in the understory and overstory. Furthermore, mesophication would presumably occur in locations similar to those where Dry Oak Forest is now found—that is, thin-soiled, often hilly locations. Finally, a look at the smaller plants may also help; stands arising via the first pathway will likely have a ground flora more reminiscent of Northern Hardwood Forest (for example, more ferns), while those arising through the second pathway may have remnants of the blueberries typical of Dry Oak Forest.

As with our habitat types, these pathways are over-generalizations; more than one set of influences may have acted on a single location. As such, the pathways are perhaps more useful as mental experiments to help direct your forest explorations than as hard-and-fast road maps.



*Left: The trunks of this Red Oak probably grew up from stump shoots after the larger parent oak was cut. Above: A young Oak-Maple Forest in winter. Note the tree stumps as indicators of past logging.*



*This “botanical portrait” of an Oak-Maple Forest was created by artist Jill Jakimetz using material collected by participants in the habitat outing to an Oak-Maple Forest. The assignment was to collect items that best captured each person’s experience of the habitat.*



*This oak tree would seem to be a dream roost for Turkeys. Such a widely-limbed oak would have grown up initially in the open—not a typical find, but perhaps one sought out by Turkeys.*

## Perspectives

“It seemed like a quintessential forest from around here,” was the view of one participant on a habitat outing to an Oak-Maple Forest. “It was the kind of woods I’m familiar with and comfortable with,” said another. For some, it prompted memories of past outings, or “growing up and being outside in the woods.” For others, it inspired a desire to camp, play, or simply linger.

A summer camp counselor described looking around from a camp perspective and thinking, “Oh, we could play games here ... there’s very few hazards.” Several people noticed the pleasant feeling of walking on soft, dead, matted leaves, and the accompanying smell of decay.

While most habitat outing participants found it a pleasant habitat to be in, a few were less pleased with its qualities. “First thing I noticed is, it was barren,” observed one. “To me it’s a barren understory landscape with nothing there. The lack of biodiversity was palpable with the amount of bugs around our faces. I mean, there’s nothing eating them.”

A hunter might beg to differ. Hunters we spoke to highlighted just this type of forest—with the large oak trees that provide for so many needs in the forest—as being good hunting locations for a variety of animals. For one, the limbs of large oak trees offer roosts for Turkeys. As one hunter explained:

They [Turkeys] want to roost in a big enough tree that it’s comfortable, so usually it’s the big oak trees. ... I just have to kind of cruise around and walk past them and give a call and see if anybody is home, and there’s a good chance that there will be.

The Oak-Maple Forest is also valued by foresters for producing trees of high timber value. Red Oak in particular stands out as one of the most valuable timber trees. One forester explained: “In my experience, particularly the Northern Red Oak is high value. It has a very clear bole typically, and it can be managed quite effectively.” Sugar Maple is also of high timber value, though as this forester explained, “It’s much harder to get clear Sugar Maple than it is to get clear Red Oak for veneer. You can, but it’s not as easy.”



*Participants in a habitat outing with the Farmscape Ecology Program record their impressions of an Oak-Maple Forest at the Schor Conservation Area in East Chatham.*



## Interact with an Oak-Maple Forest

Experience the soil through “soil tasting”

The Oak-Maple Forest might be called the “Goldilocks” of the mature hardwood forest types. It is not as dry as the Dry Oak Forest, not as moist as the Northern Hardwood Forest, and therefore ...?

It can be hard to pin this forest down, but one way to explore its place on this dry/moist spectrum is to dig under the surface. It is, in fact, the soil that inspires terms like “dry” and “moist.” Use a stick to probe just a few inches beneath the surface to unearth a handful of soil. What is it like rubbed between your fingers, brought to your nose, or held to your ear?

The Soil Tasting Card has a series of prompts designed to capture a sensory “soil print” of your experience. This can then be compared to its moister cousin, the Northern Hardwood Forest. If you’re inspired, you can also explore

the other side of the spectrum by digging into a Dry Oak Forest and completing this exercise there as well. For comparative purposes, be sure to visit these different habitats in similar weather conditions. Once you’ve dug into the soils of both (or all three) habitats and have your “soil prints” to compare, what similarities or differences do you notice?

One of our team’s biologists with a lot of soil digging experience suggests, “It’s worthwhile to note the abundance or lack of fine roots as you dig, and color is also really informative, especially color change over depth.”

This “soil tasting” activity was originally developed by Jill Jakimetz from the Hawthorne Valley Institute for Mindful Agriculture in collaboration with the Farmscape Ecology Program. Please note the idea of “tasting” is metaphorical; no actual tasting required!



*The Oak-Maple Forest might be called the “Goldilocks” of the mature hardwood forest types.*

*Participants in a “soil tasting” banquet at the Farmscape Ecology Program’s Open House.*

### Soil Tasting Card

**I Smell:**

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**I Feel:**

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**I Hear:**

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**I See:**

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**I Wonder:**

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