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# Basic Oak Hickory Forest at Harpers Ferry

## Overview Page

Code: CEGL008514

**Scientific Name:** *Quercus rubra - Quercus prinus - Carya ovalis / (Cercis canadensis) / Solidago (caesia, curtisii)* Forest

**Translated Name:** Northern Red Oak - Chestnut Oak - Red Hickory / (Eastern Redbud) / (Wreath Goldenrod, Curtis' Goldenrod) Forest

**Common Name:** Central Appalachian Basic Oak-Hickory Forest (Western Piedmont / Lower Blue Ridge Type)

### At A Glance

This is an abundantly distributed forest type at Harpers Ferry. It would be expected to be found on sites that are moderately dry but distinctive for being on places where there are minerals in the soil like calcium and magnesium that favor the growth of distinctive plant species.

Like several other forest types at Harpers Ferry, many of the biggest trees in the canopy of the **Basic Oak-Hickory Forest** are oaks. Unlike the similar forests with abundant [chestnut oak, most examples of Basic Oak Hickory Forest at Harpers Ferry have white oak as the most abundant oak, although some examples actually have more hickory than oak. Occasionally you may see a group of chestnut oaks, but this is uncommon, and may represent intergradation with an adjacent community.](http://www.explorenaturalcommunities.org/natural-communities/cegl006299/rock-creek-park) The canopy is reasonably diverse and may also contain hickories, white ash, tuliptree, slippery elm, sugar maple, and other trees.

This forest is found on many of the park’s upper slopes. It primarily grows in *base-rich* [*soil*](http://www.explorenaturalcommunities.org/glossary/term/205)*s* weathered from mafic igneous and metamorphic rocks.

There is some variation among examples of this community. Heaths are rare, except for deerberry in some examples. Some areas exhibit abundant spring wildflowers, as on Maryland Heights. A large number of herbaceous species occur in the type.

Large, mature stands of this community occur on Maryland Heights and Loudon Heights.

### Images of this Natural Community

Community image:

U:\Images\NCR\_photos\Field Guides\

[many more in this folder]

### What to Look For:

Can you find this combination of characteristic features?

* A canopy containing a variety of oaks, but white oak usually dominant, with some black oak, northern red oak and evident hickories, also with white ash and sugar maple. If chestnut oak is present, it will not be dominant.
* Hickories will typically be common to abundant, and a variety of species may be present; more so than in other types
* A group of [*understory*](http://www.explorenaturalcommunities.org/glossary/term/227) trees that can tolerate some dryness but like mineral-rich soils, including white ash, sugar maple, hop-hornbeam, and sassafras, with American beech.
* A shrub layer that lacks heath shrubs, except maybe for deerberry. Mapleleaf viburnum may also be present
* A great diversity of native and/or invasive herbaceous plants

If so, welcome to HAFE’s **Basic Oak-Hickory Forest** Community.

### Tips to Distinguish this community from other similar communities:

1. Basic Oak-Hickory Forest vs. Dry Chestnut Oak-Northern Red Oak / Heath Forest (CEGL008523)

Basic Oak-Hickory Forest will be dominated by a mixture of oaks, with hickories as reliable components in the canopy and understory, including shagbark hickory, red hickory, bitternut hickory, mockernut hickory, and pignut hickory. The oaks may include white oak, black oak, northern red oak, and chestnut oak, which may be present but not dominant. Other canopy or understory indicator trees include white ash and sugar maple. In contrast, the Dry Chestnut Oak-Northern Red Oak / Heath Forest will be dominated by a combination of these two oaks, and will typically have witch-hazel in its shrub layer. In addition, the Dry Chestnut Oak - Northern Red Oak / Heath Forest is confined to exposed, convex, usually south- or west-facing ridge slopes on acidic, nutrient-poor soils, while the Basic Oak-Hickory Forest is more widespread and variable.

1. Basic Oak-Hickory Forest vs. Dry-mesic Chestnut Oak – Red Oak Forest (CEGL006057)

As in the distinction between Basic Oak-Hickory Forest and Dry Chestnut Oak-Northern Red Oak / Heath Forest, Basic Oak-Hickory Forest will be dominated by a mixture of oaks, not just chestnut oak and northern red oak, and with hickories as reliable components in the canopy and understory, and it will have a greater variety of plants in the understory and field layer. It is more extensive and variable, and occupies a greater range of site conditions than either of the chestnut oak - red oak types. In particular, the Dry-Mesic Chestnut Oak - Northern Red Oak Forest is confined to narrow patches on protected, north- to east-facing rocky slopes.

### Notable Variations at Harpers Ferry

Many stands of Basic Oak - Hickory Forest at Harpers Ferry have been disturbed in the past and are weedy and/or somewhat atypical in composition compared to older or less disturbed stands.

Examples on Maryland Heights seem to be “richer”, with a greater diversity of wildflowers and ground layer plants, and more abundant hickory. These stands are mapped on Weverton which is anomalous. These have been observed to have a variety of Spring wildflowers (toothworts, yellow fumitory, etc.) as well as invasive herbs (catnip, etc.), and many hickory trees.

At the Murphy Farm, on trails at the south end of this site, the **Basic Oak-Hickory Forest** is mapped as being adjacent to the Dry-mesic Chesnut Oak-Northern Red Oak Forest, but this is not apparent on the ground. This example of the **Basic Oak-Hickory Forest** is drier and not as rich as that on Maryland Heights.

The stands on Bolivar Heights have some impressively large (for Harpers Ferry) white oak trees.

### Conservation Status

To be autopopulated.

### Classification

To be autopopulated

## Where to See It Page

Large, mature stands of this community occur on Maryland Heights and Loudon Heights.

On Maryland Heights, this natural community is extensively developed along the northwestern section of the Stone Fort Loop Trail (blue blaze). There is one part of this trail which alternately passes through areas of **Basic Oak-Hickory Forest** and Dry Chestnut Oak – Northern Red Oak / Heath Forest and. At one spot the Basic Oak-Hickory Forest is essentially above the trail and the Dry Chestnut Oak – Northern Red Oak / Heath Forest is below. In some areas there may be intergradation with the Dry-mesic Chesnut Oak-Northern Red Oak Forest

There are extensive patches of this community circumnavigated by the Upper Loop Trail on Bolivar Heights, above (east of) the large fields east of Bakerton Road. In this area, it is abutted by stands of the Successional Tuliptree Forest and the Successional Mixed Deciduous Forest, neither of which are oak-dominated.

Similarly, on Loudoun Heights, there is a portion of the Appalachian Trail between the Potomac River Bridge and Chestnut Hill Road which winds through an area where the **Basic Oak-Hickory Forest,** the Dry-mesic Chesnut Oak-Northern Red Oak Forest, the Successional Tuliptree Forest, and the Successional Mixed Deciduous Forest are all present and evidently different from one another.

There is also an extensive area at the Murphy Farm, on trails at the south end of this site. Here, the **Basic Oak-Hickory Forest** is mapped as being adjacent to the Dry-mesic Chesnut Oak-Northern Red Oak Forest, but this is not apparent on the ground. This example of the **Basic Oak-Hickory Forest** is drier and not as rich as that on Maryland Heights.

[Currently one of the trails on Loudoun Heights goes through a well-developed and obvious example of this community, but that section is due for closure so that may not be available. In addition, on the Appalachian Trail on the south part of Loudoun Heights, there is a large mapped area of this community, but again, that section of the AT may be relocated, so the result of that on the ground is currently unknown.]

## Seasonal Plant Highlights Page

#### Spring Highlights

Spring wildflowers; yellow corydalis, toothwort; pinkish-purple redbud flowers

#### Summer Highlights

Full green of summer leaves; deerberries, flowers of naked-stem tick-trefoil.

#### Autumn Highlights

Change in leaf colors, oaks, hickories, sugar maple; white wood aster, white snakeroot, and other aster family plants in autumn.

#### Winter Highlights

## Seasonal Animal Highlights Page

#### Spring Highlights

?

#### Summer Highlights

#### Autumn Highlights

**?**

#### Winter Highlights

## Characteristic Species Page

### Canopy Trees

Like several other forest types at Harpers Ferry, many of the biggest trees in the canopy of the **Basic Oak-Hickory Forest** are oaks.Unlike the similar forests with abundant [chestnut oak, most examples of Basic Oak Hickory Forest at Harpers Ferry have white oak as the most abundant oak, although some examples actually have more hickory than oak. Occasionally you may see a group of chestnut oaks, but this is uncommon, and may represent intergradation with an adjacent community.](http://www.explorenaturalcommunities.org/natural-communities/cegl006299/rock-creek-park) The canopy is reasonably diverse and may also contain hickories, white ash, tuliptree, slippery elm, sugar maple, and other trees.

### Understory Trees

The most evident understory trees include white ash, slippery elm, winged elm, redbud, hop-hornbeam, dogwood (which has been reduced through dogwood antracnose), sassafras. Several of these are characteristic of base-rich geologies.

### Shrubs, Saplings, & Vines

There is some variation among examples of this community. Heaths are rare, except for deerberry in some examples. Components include maple-leaved viburnum,

### Low Plants (Field Layer)

Some areas exhibit abundant spring wildflowers, as on Maryland Heights. Yellow fumitory, false Solomon’s seal, toothworts, as well as invasive herbs (garlic mustard, catnip, mile-a-minute weed, motherwort, ivy-leaved speedwell, soapwort, chickweed, great mullein, motherwort, etc.).

### Characteristic Species

(Tag by season, common/occasional/invasive & non-native, and canopy/understory/ shrubs, saplings&vines/ herbs & ground layer)

|  |  |
| --- | --- |
| Layer | Common Species |
| Trees – Canopy | white oak, white ash, mockernut hickory, pignut hickory, |
| Trees – Understory | white ash, sugar maple, American beech, redbud |
| Shrubs, Saplings & Vines |  |
| Low Plants (Field Layer) | Virginia stickseed (beggar’s-lice), smooth rockcress, naked-stem tick-trefoil |

|  |  |
| --- | --- |
| Layer | Occasional Species |
| Trees – Canopy | Bitternut hickory, shagbark hickory, red hickory, northern red oak, chestnut oak |
| Trees – Understory | dogwood, common serviceberry, winged elm, sugarberry, black walnut, sassafras |
| Shrubs, Saplings & Vines | deerberry, |
| Low Plants (Field Layer) | sweet cicely, yellow corydalis, false Solomon’s seal |

|  |  |
| --- | --- |
| Layer | Invasive & Non-native Species |
| Trees – Canopy | tree-of-heaven |
| Trees – Understory | tree-of-heaven, sweet cherry |
| Shrubs, Saplings & Vines | wineberry |
| Herbs/Ground layer | Garlic mustard, catnip, mile-a-minute weed, motherwort, ivy-leaved speedwell, soapwort, chickweed, great mullein |

### Non-native invasive plants:

(see [**http://www.fs.fed.us/invasivespecies/speciesprofiles/documents/garlic\_mustard.pdf**](http://www.fs.fed.us/invasivespecies/speciesprofiles/documents/garlic_mustard.pdf) for more info).

### In brief:

### Plant Life

### Animal Life

## Physical Setting: Basic Mesic Forest at Harpers Ferry

### Indicator Plants:

Trees: various hickory species (shagbark hickory, red hickory, bitternut hickory, mockernut hickory, and pignut hickory); white oak, white ash

### Stand Size

Stands may be small patches, or long an linear areas that conform to topographic and geologic situations. They vary in size (apparently) from about 1.5-2 ha (4-5 acres) up to 60 ha (150 acres).

### Landscape Position

It is found on lower- to middle-elevation slopes, but also on upper slopes and wide ridges, as on Maryland Heights.

### Soils

### Geology

Found (from west to east) on Antietam phyllitic metasiltstone, Tomstown limestone, Harpers phyllitic metasiltstone, Weverton formation, (somewhat improbably?), Loudoun phyllite, and Garnet monzogranite (minor area). The Antietam, Weverton, and Loudoun formations are components of the Chilhowee Group.

### Physical Setting Full Description

This is a common forest type at Harpers Ferry, and is apparently found on a variety of sites that are generally dry to moderately dry. Some are diverse in spring wildflowers. It is found on lower- to middle-elevation slopes, but also on upper slopes and wide ridges, as on Maryland Heights. The number of different plant species that call it home may vary across its sites. Like several other forest types, it is intermediate in its relative elevation, being higher on the slope than the rich mesic or cove forests, but not as dry, exposed, and acidic as the forests dominated by chestnut oak and mountain laurel. This forest is found on many of the park’s dry-mesic upper slopes, where the soils and geology are favorable for it. It primarily grows in [*soil*](http://www.explorenaturalcommunities.org/glossary/term/205) weathered from [*bedrock*](http://www.explorenaturalcommunities.org/glossary/term/38)that contains calcium, magnesium, and other base-rich minerals.

### Natural Processes

Fires historically occurred in this community, in the past when people used fire more and it was harder to put out wildfires. The steam engines of the trains also caused fires, which could burn all the way up the hill. The composition and the landscape position of this community meant that fires had a great deal of effect on this community. When fires were more frequent, the community could have appeared very different from how it does today.

### Large-Scale Natural Processes and Ecological Systems

Leave this section for Mary or someone else.

### Explore this Ecological System

Leave this section for Mary or someone else.

### List of Threats

Generated list?

### List of Non-native invasive plant species

Catnip (Maryland heights); tree-of-heaven, mile-a-minute weed, garlic mustard, wineberry

Generated list?

### Stewardship