

Tsuga canadensis - *Liriodendron tulipifera* / *Rhododendron maximum* / *Tiarella cordifolia* Forest

COMMON NAME Eastern Hemlock - Tuliptree / Great Rhododendron / Heartleaf Foamflower Forest
SYNONYM Southern Appalachian Acid Cove Forest (Typic Type)
PHYSIOGNOMIC CLASS Forest (I)
PHYSIOGNOMIC SUBCLASS Mixed evergreen-deciduous forest (I.C)
PHYSIOGNOMIC GROUP Mixed needle-leaved evergreen - cold-deciduous forest (I.C.3)
PHYSIOGNOMIC SUBGROUP Natural/Semi-natural (I.C.3.N)
FORMATION Mixed needle-leaved evergreen - cold-deciduous forest (I.C.3.N.a)

ALLIANCE *Tsuga canadensis* - *Liriodendron tulipifera* Forest Alliance

CLASSIFICATION CONFIDENCE LEVEL 1

USFWS WETLAND SYSTEM Upland

RANGE

Globally

This community occurs in the mountains of Georgia, North Carolina, South Carolina, Tennessee, and Virginia and may possibly range into West Virginia.

Great Smoky Mountains National Park

This community was sampled from the Cades Cove quadrangle. Additional historic samples came from the Calderwood and Thunderhead Mountain quadrangles. It undoubtedly occurs in other areas of the Park. Samples from the Cades Cove quadrangle ranged in elevation from 1840 to 3020 feet elevation. In the northern portion of the quadrangle this community was sampled along Victory Branch, along the Left Prong of Anthony Creek, and along Tater Branch, north of Tater Ridge. In the central portion of the quadrangle this community was sampled at several locations in the vicinity of Forge Creek. and at the confluence of Big Tommy Branch and Ekaneetlee Creek.

ENVIRONMENTAL DESCRIPTION

Globally

These forests are typically found at lower elevations of the Blue Ridge escarpment, occurring over acid soils, on gentle to moderately steep, lower slopes and in coves.

Great Smoky Mountains National Park

This community was sampled on low slopes and flats, mostly below 3000 feet elevation. This forest is often associated with streams but is not a wetland.

MOST ABUNDANT SPECIES

Globally

<u>Stratum</u>	<u>Species</u>
Tree canopy	<i>Tsuga canadensis</i> , <i>Liriodendron tulipifera</i> , <i>Betula lenta</i>
Tall Shrub	<i>Rhododendron maximum</i>
Herbaceous	variable

Great Smoky Mountains National Park

<u>Stratum</u>	<u>Species</u>
Tree canopy	<i>Tsuga canadensis</i> , <i>Liriodendron tulipifera</i> , <i>Betula lenta</i>
Tall Shrub	<i>Rhododendron maximum</i>

CHARACTERISTIC SPECIES

Globally

Tsuga canadensis, *Liriodendron tulipifera*, *Betula lenta*, *Leucothoe fontanesiana*, *Tiarella cordifolia*

Great Smoky Mountains National Park

See above

VEGETATION DESCRIPTION

Globally

Forests dominated by *Tsuga canadensis* occurring with deciduous trees such as *Liriodendron tulipifera*, *Betula lenta*, and *Acer rubrum*. Other deciduous species more typical of "rich" coves may occur as scattered individuals, such as *Tilia americana* var. *heterophylla*, *Fraxinus americana*, and *Fagus grandifolia*. Other canopy/subcanopy species often include *Quercus alba*, *Quercus rubra*, *Calycanthus floridus*, *Halesia tetraptera*, and *Pinus strobus*. *Rhododendron maximum* is scattered to dominant in the shrub stratum. Other typical shrubs include *Kalmia latifolia* and *Leucothoe fontanesiana*. Herbaceous cover is sparse but can be diverse. Typical herbs include *Polystichum acrostichoides*, *Goodyera pubescens*, *Thelypteris noveboracensis*, *Galax urceolata*, *Hexastylis* sp., and *Tiarella cordifolia*.

Great Smoky Mountains National Park

The canopy of this forests is dominated by *Tsuga canadensis* occurring with deciduous trees such as *Liriodendron tulipifera*, *Betula lenta*, and *Acer rubrum*. Other deciduous species that will occasionally have high coverage in the canopy or subcanopy include *Betula alleghaniensis*, *Tilia americana* var. *heterophylla*, and *Fagus grandifolia*. Other canopy/subcanopy species can include *Magnolia fraseri*, *Ilex opaca*, *Cornus florida*, *Halesia tetraptera*, *Oxydendrum arboreum*, and *Pinus strobus*. *Rhododendron maximum* is scattered to dominant in the shrub stratum. Other typical shrubs include *Euonymus americanus*, *Ilex opaca*, and *Leucothoe fontanesiana*. Herbaceous cover is sparse. Typical herbs include *Mitchella repens* and *Polystichum acrostichoides*.

OTHER NOTEWORTHY SPECIES

No information

CONSERVATION RANK G5

RANK JUSTIFICATION

DATABASE CODE C EGL007543

COMMENTS

Globally

None.

Great Smoky Mountains National Park

This community can include areas where *Betula lenta* and *Liriodendron tulipifera* dominate over dense *Rhododendron maximum* without canopy *Tsuga canadensis*. This situation was found on the Cades Cove quadrangle at the confluence of Big Tommy Branch and Ekaneetlee Creek. On aerial photography, this community may appear similar to other Hemlock-Hardwood communities (i.e. *Tsuga canadensis* - *Halesia tetraptera* - (*Fagus grandifolia*, *Magnolia fraseri*) / *Rhododendron maximum* / *Dryopteris intermedia* Forest (CEGL007693) and *Tsuga canadensis* - *Betula alleghaniensis* / *Rhododendron maximum* / *Leucothoe fontanesiana* Forest (CEGL007861)). Some occurrences, where *Tsuga canadensis* overtops the deciduous trees, may have signatures similar to Hemlock and Hemlock-White Pine Forests (i.e. *Tsuga canadensis* / *Rhododendron maximum* - *Leucothoe fontanesiana* Forest (CEGL007136) and *Pinus strobus* - *Tsuga canadensis* / *Rhododendron maximum* - *Leucothoe fontanesiana* Forest (CEGL007102)).

REFERENCES

Gettman 1974, Newell and Peet 1995, Patterson 1994, Schafale and Weakley 1990