

***Tsuga canadensis* - *Halesia tetraptera* - (*Fagus grandifolia*, *Magnolia fraseri*) /
Rhododendron maximum / *Dryopteris intermedia* Forest**

COMMON NAME	Eastern Hemlock - Mountain Silverbell - (American Beech, Fraser Magnolia) / Great Rhododendron / Fancy Fern Forest
SYNONYM	Southern Appalachian Acid Cove Forest (Silverbell 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	<i>Tsuga canadensis</i> - <i>Liriodendron tulipifera</i> Forest Alliance
CLASSIFICATION CONFIDENCE LEVEL	1
USFWS WETLAND SYSTEM	Upland

RANGE

Globally

This association is known from the mountains of eastern Tennessee and western North Carolina.

Great Smoky Mountains National Park

This community was sampled from the Cades Cove, Mount Le Conte, and Mount Guyot quadrangles. Historic samples come from the Thunderhead Mountain quadrangle (3420 to 4600 feet elevation). Samples of this community from the Cades Cove quadrangle ranged in elevation from 2720 to 3900 feet. Recent and historic samples from the Cades Cove quadrangle come from low slopes above the Left Prong of Anthony Creek; from protected slopes and coves north of McCampbell Knob; and in the vicinity of Forge Creek. Samples from the Mount Le Conte quadrangle ranged from 2602 to 4120 feet elevation and included samples from the western portion of the quadrangle near the Cherokee Orchard–Rainbow Falls trailhead and from coves east of Piney Mountain above Rocky Spur Branch. In the eastern portion of the Mount Le Conte quadrangle this community was sampled from low slopes above Horseshoe Branch and from Upper Porter’s Creek on the far southwestern part of Mount Guyot quadrangle.

ENVIRONMENTAL DESCRIPTION

Globally

This community occurs on protected slopes and coves at elevations between 2800 to 4600 feet.

Great Smoky Mountains National Park

This community is found on moderately steep, protected slopes and coves with western to northeastern aspects. Samples had a mean elevation of 3475 feet, ranging from 2600 to 4600 feet.

MOST ABUNDANT SPECIES

Globally

<u>Stratum</u>	<u>Species</u>
Tree canopy	<i>Tsuga canadensis</i> , <i>Halesia tetraptera</i> var. <i>monticola</i>
Tall shrub	(<i>Rhododendron maximum</i>)
Herbaceous	<i>Dryopteris intermedia</i>

Great Smoky Mountains National Park

<u>Stratum</u>	<u>Species</u>
See above.	

CHARACTERISTIC SPECIES

Globally

Tsuga canadensis, *Halesia tetraptera* var. *monticola*, *Acer saccharum*, *Dryopteris intermedia*, *Mitchella repens*

Great Smoky Mountains National Park

See above

VEGETATION DESCRIPTION

Globally

Forests of lower slopes and coves dominated by *Tsuga canadensis* and *Halesia tetraptera* var. *monticola*. *Magnolia fraseri* or *Fagus grandifolia* can also be important in the canopy. Some occurrences have dense, tall-shrub strata dominated by *Rhododendron maximum*, while other occurrences have a more open shrub stratum with greater herbaceous cover, often dominated by *Dryopteris intermedia*. Other subcanopy/shrub species may include *Acer pensylvanicum*, *Acer saccharum*, *Acer rubrum*, *Amelanchier laevis*, *Betula alleghaniensis*, *Betula lenta*, and *Prunus pensylvanica*. Other common herbaceous species include *Mitchella repens*, *Medeola virginiana*, *Polystichum acrostichoides*, *Solidago caesia* var. *curtisii*, *Viola blanda*, and *Viola hastata*. *Rubus canadensis* is also common.

Great Smoky Mountains National Park

This forest has a canopy dominated by *Tsuga canadensis* and *Halesia tetraptera* var. *monticola*. Other species that can have high coverage in the canopy or subcanopy include *Acer saccharum*, *Fagus grandifolia*, *Magnolia fraseri*, *Betula alleghaniensis*, and *Acer rubrum*. *Prunus serotina* can also be present in the subcanopy. Some occurrences have dense, tall-shrub strata dominated by *Rhododendron maximum*, but more typically the shrub stratum is open, with coverage by saplings of the canopy species. *Acer pensylvanicum* is also a typical shrub. The herb stratum has sparse to moderate coverage. Common species include *Aster divaricatus*, *Dryopteris intermedia*, *Huperzia lucidula*, *Medeola virginiana*, *Mitchella repens*, *Oxalis montana*, *Solidago caesia* var. *curtisii*, *Tiarella cordifolia*, and *Viola* spp. (e.g. *Viola blanda*, *Viola canadensis*, *Viola hastata*, *Viola rotundifolia*).

OTHER NOTEWORTHY SPECIES

No information

CONSERVATION RANK G2

RANK JUSTIFICATION

This community is uncommon and geographically restricted to the Great Smoky Mountains and to Joyce Kilmer Wilderness in western North Carolina.

DATABASE CODE C EGL007693

COMMENTS

Globally

None

Great Smoky Mountains National Park

This community is distinguished from *Tsuga canadensis* - *Liriodendron tulipifera* / *Rhododendron maximum* / *Tiarella cordifolia* Forest (CEGL007543) by not having *Liriodendron tulipifera* as an important component and by generally occurring at higher elevations (over 3000 feet). This community is distinguished from *Tsuga canadensis* - *Betula alleghaniensis* / *Rhododendron maximum* / *Leucothoe fontanesiana* Forest (CEGL007861) by occurring on more protected sites and having more diverse tree and herb strata. On aerial photography, this community may appear similar to other Hemlock-Hardwood communities (i.e. *Tsuga canadensis* - *Liriodendron tulipifera* / *Rhododendron maximum* / *Tiarella cordifolia* Forest (CEGL007543) and *Tsuga canadensis* - *Betula alleghaniensis* / *Rhododendron maximum* / *Leucothoe fontanesiana* Forest (CEGL007861)). In some occurrences *Tsuga canadensis* dominates beneath the deciduous upper canopy and may not be evident on air photos. 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

Golden 1974, Newell et al. 1997, Schafale and Weakley 1990