

## MASSACHUSETTS

Our survey of Massachusetts concentrates on old-growth sites in the Berkshire-Taconic region. The state may, however, include other types of original forest. One type of community that should be considered is holly maritime forest, present on Martha's Vineyard and in Nantucket (Ebert 1993). Another possibility is pine barrens. As of 1987, Massachusetts had at least six pine barrens, representing both the coastal Pitch Pine-Scrub Oak and mid-latitude Pitch Pine-scrub oak types. The barrens ranged in size from 50,000 partially protected acres in Plymouth/Miles Standish State Forest to 200 completely protected acres in Wellfleet (Widoff 1987). Researchers have begun to study their history.

Motzkin, Patterson, and Foster have examined the pine plains of the Connecticut River Valley. At the time of European settlement, pine plains dominated by Pitch Pine and White Pine occurred on at least 9,000 hectares or about 22,500 acres of the approximately 32,000 ha of xeric outwash deposits in the valley. As of 1985, only 1094 ha of Pitch Pine stands and 74 ha of scrub oak stands occurred on never-plowed land in the outwash deposits. Most of the never-plowed sites are small and scattered. Only seven of them were over 40 acres in extent, and development threatened all of them. These Pitch Pine and scrub oak stands are not old growth or primary forest, as they have been logged, support no large trees, and differ in composition from the communities that existed there at the time of European settlement. However, the vegetation on the never-plowed land differs substantially from that on areas that have reverted to forest after having been farmed. The never-plowed land supports, for instance, Dwarf Chinquapin Oak, Bear Oak, and Wintergreen, which may once have been common in the area but which have not reestablished themselves on the formerly plowed land (Motzkin et al. 1999). A pine plain community on Martha's Vineyard studied by Foster and Motzkin, which seems to us to be closer to old-growth status, is described below.

Some Atlantic White-cedar stands are old growth, according to loose definitions of the term, but are not original forest. All the Atlantic White-cedar stands in Massachusetts have apparently been cut; but the state has several sites with stands of trees 150 to 200 years old. They include **Marconi Atlantic White Cedar Swamp** (Wellfleet and Barnstable Counties): 12 acres dominated by old cedar amidst which Red Maple grow; and **Acushnet Cedar Swamp** (New Bedford and Bristol Counties): an extensive wetlands complex, on 400 acres of which Atlantic White-cedar, some in old-growth stands, provide more than 25% of the cover (Motzkin 1991, 1993).

Robert Leverett contributed virtually all our information on old growth in the Berkshire-Taconic region. Unless otherwise stated, his personal communications to us and to the Eastern Native Tree Society's internet list are the source of the material in this chapter. He has been assisted by a variety of biologists, ecologists, other scientists, and citizen naturalists in his field expeditions in western Massachusetts and beyond. Therefore, his statistics are the product of teamwork.

For the first edition of this guide, Leverett divided the state's old growth into three categories: primary, secondary, and marginal. For this edition, he gives a single figure for the old growth at each site. He is basically defining old growth "as areas with

trees in the 150-year-old range and older, no visible signs of human disturbance, and tree species that reflect long-term colonization” (Leverett 2001). The statistics are as of October 2002. They total 2742 acres.

Small documented old-growth sites are **Skinner State Park\*** (Hampshire County): 35 acres of old-growth hemlock-hardwoods in the 390-acre park on Mount Holyoke (Leverett 2002); **Ice Glen** (Berkshire County): 25 acres of old-growth White Pine, Red Pine, Eastern Hemlock, and hardwoods, owned by the private Laurel Hill Association and located on the outskirts of Stockbridge (Leverett 2002); **Tower Brook** (Berkshire County): 25 acres of privately owned old-growth hemlock-hardwoods in Monroe (Leverett 2000, 2002); **Rowley Farm\*** (Berkshire County) 25 acres of privately owned old-growth hemlock on an 800-acre site in Monterey (Leverett 2000; Leverett 2002); **Beartown State Forest\*** (Berkshire County): 10 acres of old-growth hemlock, Northern Red Oak, White Pine, Sweet Birch, and Yellow Birch in Burgoyne Pass and 12 acres of old-growth hemlock and Yellow Birch in East Brook (Leverett 2002); **Mount Toby State Reservation\*** (Franklin County): 20 acres of old-growth Eastern Hemlock and hardwoods, including Northern Red Oak, White Ash, and American Basswood on Mount Toby (Leverett 2002); **William Cullen Bryant Homestead** (Berkshire County): 15 acres of old-growth White Pine, Eastern Hemlock, White Ash, and Sugar Maple, owned by the Trustees of Reservations (Leverett 2000, 2002); **Chesterfield Gorge** (Berkshire County): 15 acres of old growth owned by the Trustees of Reservations in Chesterfield; **Holland Glen\*** (Hampshire County): 15 acres of privately owned old growth with Eastern Hemlock, White Pine, and Sweet Birch in Belchertown; **Erving State Forest\*** (Franklin County): 15 acres of old growth with hemlock, Chestnut Oak, and Sweet Birch on Hermit Mountain (Leverett 2000, 2002); **Holyoke Range State Park\*** (Hampshire County): 15 acres of old growth with hemlock, Sweet Birch, Northern Red Oak, White Oak, and White Ash on Mount Norwottuck (Leverett 2002); **Mount Tom State Reservation\*** (Hampshire County) 15 acres of old-growth hemlock-hardwoods on Mount Tom within the 1800-acre reservation (Leverett 2002); **Williams College\*** (Berkshire County): 15 acres of old growth on the campus of the college in Williamstown (Leverett 2002); **Lennox Mountain\*** (Berkshire County): 10 acres of old growth owned by Massachusetts Audubon (Leverett 2002); **Reed Brook** (Berkshire County): 10 acres of old-growth White Pine, Eastern Hemlock, and White Ash within a preserve owned by The Nature Conservancy (Leverett 2002); **Windsor State Forest\*** (Berkshire County): 10 acres of hemlock, Red Spruce, Sugar Maple, Sweet Birch, and Yellow Birch in the Gorge traversed by Windsor Jambs Brook (Leverett 2002); **Bartholomew Cobble\*** (Franklin County): 5 acres of old growth in Ashfield owned by the Trustees of Reservations (Leverett 2002); **Bullard Woods\*** (Berkshire County): 5 acres of large trees, including White Pine, Tulip Tree, and Eastern Hemlock more than 200 years old, owned by the town of Stockbridge (Leverett 2000, 2002); **Monument Mountain\*** (Berkshire County): 5 acres of old growth with White Pine, Pitch Pine, and Sweet Birch, owned by the Trustees of Reservations (Leverett 2002); **Mount Toby—University of Massachusetts\*** (Franklin County): 5 acres of old growth owned by the University of Massachusetts; and **Westfield Watershed\*** (Hampden County): 5 acres of old growth owned by the town of Westfield (Leverett 2002).

Leverett estimates that 220 to 250 acres of old growth on public and private land have not yet been classified (Leverett 2002). He lists Ice Gulch in the 1902-acre **East**

**Mountain State Forest** (Berkshire County) as including as yet undetermined acreage of old-growth hemlock-hardwoods (Leverett 02).

**Manuel F. Correllus State Forest\*** on Martha's Vineyard (Dukes County)

Two to three thousand acres of sand-plain communities that have existed for more than two thousand years, within what is now a 5200-acre state forest. During the twentieth century more than 1200 acres of the state forest were turned into plantations of non-native conifers. The native woodland and scrubland that remain are "dominated by scrub oak, white, black, and post oaks, ericaceous shrubs, and pitch pine." The woodland and scrubland experienced frequent fires in the past, probably partly as a result of the activities of Native Americans, and were logged for fuel. As a result of a reduction in fires and logging, trees are now taller than they were earlier. However, the native scrubland and woodland were never clearcut, grazed, or plowed. Even in parts of the pine plantations, native species remain in the groundcover, because the conifers were generally planted in the scrub rather than in fields.

Today, the state forest is "56% hardwood forest, 23% plantations, 12% scrub oak, less than 7% pitch pine and oak, less than 4% fire breaks, roads, and grassland." Foster and Motzkin, who conducted a historical and ecological assessment of the state forest, believe that it "presents an unusual opportunity to protect and restore an extensive sand-plain ecosystem. . . Through proposed restoration efforts, this landscape could become a functioning example of a globally uncommon vegetation community harboring numerous uncommon species" (Foster and Motzkin 1999).

**Mohawk Trail State Forest** (Franklin and Berkshire Counties)

A total of 612 acres of old growth within the 6800-acre state forest. The old growth is divided among seven locations.

--**Todd-Clark Mountain.** A total of 311 acres of old growth with trees up to 350+ years in age on the north side of State Route 2 (Leverett 2002). Sites include:

Steep sides of Todd Mountain. Because of difficult growing conditions, the trees are not large; but many of the Sweet Birch, White Oak, Northern Red Oak, and Eastern Hemlock are 150-250 years old, and some trees are older (Kershner and Leverett 2002).

An east-facing bowl on Todd Mountain, with cliff-side old growth. Eastern Hemlock, White Pine, Sugar Maple, Red Maple, Northern Red Oak, White Oak, White Ash, Black Cherry, hickory, and basswood blend (Leverett 1993).

Todd-Clark Ridge Line. Almost three miles of old growth Eastern Hemlock and Northern Red Oak, on the northeast-facing ridge of Todd Mountain and its continuation, Clark Ridge. Some of the oak exceed 240 years in age. Hemlock ages exceed 300 years (Leverett 1993).

--**Cold River A.** 103 acres of old growth with Sugar Maple, Northern Red Oak, White Ash, American Beech, Red Maple, Sweet Birch, Yellow Birch, and Eastern Hemlock—the hemlock up to 400 years in age.

The various areas of old growth identified as "Cold River," under Mohawk Trail and Savoy Mountain State Forests, occur in the Cold River Gorge on the south side of State Route 2. The Cold River A site starts about a quarter of a mile before the confluence of Cold River and Black Brook. The Cold River old-growth region can be

visualized as “swaths that are on one or the other or both sides of the gorge at varying widths, but are fairly continuous for 6.5 miles.” After the 6.5 miles a break in the old growth occurs. Then the old growth “picks up again for about 0.5 miles. In some places the old-growth swaths are fairly high on the ridges and in others the swaths come down nearly to or all the way to the river” (Leverett, 2001, 21 November e-mail).

--**Cold River B--Black Brook.** 12 acres of old-growth Sugar Maple, American Beech, Red Maple, Yellow Birch, and hemlock up to 350+ years in age.

--**Cold River C.** 113 acres of old-growth Sugar Maple, White Ash, American Beech, Red Maple, Sweet Birch, Yellow Birch, Red Spruce, and hemlock up to 400 years in age.

--**Trout Brook-Totem Trail.** 43 acres of old growth including Sugar Maple, Northern Red Oak, Eastern Hemlock, White Ash, Red Maple, and White Pine, up to 350+ years in age.

--**Trout Brook-Hawks Mountain.** 25 acres of old-growth American Beech, Northern Red Oak, Sugar Maple, Eastern Hemlock, Sweet Birch, and Yellow Birch, up to 400 years in age (Leverett 2002).

--**Thumper Mountain.** Near the summit, 5 acres of old-growth trees that are small because of past fires and difficult growing conditions. Tree species present are hemlock, White Pine, Northern Red Oak, White Oak, Sweet Birch, and Red Maple. Ages are 130-200+ years (Leverett 2002, Kershner and Leverett 2002).

### **Mount Greylock State Reservation (Berkshire County)**

A total of 555 acres of old growth divided among four sites. Mount Greylock, the highest mountain in Massachusetts, rises to 3491 feet above sea level.

--**Paris-Bacon-Money Brooks.** Four hundred acres of hemlock-hardwoods old growth with trees up to 350 years in age on the steep western side of Mount Greylock (Leverett 2002, Kershner and Leverett 2002). The area includes the celebrated Hopper, which is usually regarded as the remnant of a glacial cirque. Most of the Hopper shows substantial disturbance, but on its steep sides are several waterfalls surrounded by primary old growth. Red Spruce, Eastern Hemlock, Sugar Maple, Yellow Birch, and American Beech reach impressive dimensions here. One Red Spruce is 120 feet in height (Leverett 1993, 2002).

--**DeerHill-Roaring Brook.** Sixty-five acres of old-growth Sugar Maple, Northern Red Oak, American Beech, Red Maple, Sweet Birch, and Yellow Birch, up to 400 years in age (Leverett 2002).

--**Mount Williams.** Sixty acres of old-growth hemlock-hardwoods on the north side of a mountain near Mount Greylock. Trees are up to 300 years in age (Leverett 2002).

--**Stony Ledge.** Thirty acres of old growth comprised of Sugar Maple, Northern Red Oak, American Beech, Red Maple, Sweet Birch, and Yellow Birch, up to 250 years in age.

### **Mount Everett State Reservation, southwestern Massachusetts (Berkshire County)**

An estimated 530 acres of old growth within the 1100-acre state reservation. Mount Everett is 2608 feet tall and gains 1950 feet in elevation from the base to the

summit. The old growth is divided among three sites, two of which are described together here.

-- **Mount Everett-East Side and Summit.\*** An estimated 500 acres of old-growth hemlock-hardwoods, plus a dwarf pine community of some 15 acres. Research is ongoing, and the 500-acre figure may eventually be surpassed.

Trees in the 500 acres, mostly stunted and gnarled because of harsh climactic conditions, are Eastern Hemlock, White Pine, Sugar Maple, Red Maple, Northern Red Oak, White Ash, American Beech, Sweet Birch, and Yellow Birch. Within the old growth are two healthy American Chestnuts, one of them 2.9 feet around and 66.3 feet in height. A particularly fine area of old-growth White Oak, the most extensive in Massachusetts, has been found in the zone of frequent winter icing. (Leverett 2002).

The summit of Mount Everett supports a community that is described as Pitch Pine or, more descriptively by Frelich, as a mosaic of Pitch Pine/blueberry and hardwood/huckleberry communities. The hardwoods are Bear Oak, with scattered Northern Red Oak and Red Maple. Since the trees grow in very thin soil on schist bedrock and are subject to high winds and extremes of temperature, the community is "shrub-scale." The pines in the 15 acres of old growth range in age from 12 to 170 years, with an average age of 78 years. They were apparently established without fire. Despite its small size, the site has high value for conservationists and biologists. It has, for example, 112 lichen species, including one globally rare rock-dwelling species and one tree-dwelling species "probably new to science" (May 2001). The community "is naturally open and almost surely pre-dates settlement by Euro-Americans," Webb states (2002). The only logging has been for the construction of two fire towers and trails. Motzkin et al. note, "few sites in the northeastern United States have experienced such limited disturbance by human activity over the past few centuries with no documented history of cutting, grazing, or agriculture" (2002). Leverett does not include the 15 acres in his old-growth statistics for Massachusetts, because some researchers require the Pitch Pines to be older to qualify as old growth (Leverett 2002, personal communication Dec. 3).

--**Guilder Pond.\*** 30 acres of old-growth Northern Red Oak, Eastern Hemlock, White Pine, Red Maple, and Sweet Birch around and near the pond. Mountain Laurel up to 125 years of age is also present. The pond is just to the north of Mount Everett (Kershner and Leverett 2002).

### **Mount Washington State Forest** (southern Taconics; Berkshire County)

A total of 300 acres of old growth divided among five sites.

--**Bashbish Falls.** Up to 100 acres of old growth around and near the falls on the steep side of Bashbish Mountain. The falls are within Bashbish Falls State Park, a portion of Mount Washington State Forest. Tree species are varied: Sugar Maple, Northern Red Oak, White Pine, Eastern Hemlock, White Ash, American Beech, Red Maple, American Basswood, Sweet Birch, and Yellow Birch (Leverett 2002, Kershner and Leverett 2002). Densities of old hemlock may be greater here than at any other site, and many of the hemlock are more than 300 years old (Leverett 1993).

--**Sage's Ravine.** One hundred acres of Red Maple, Sweet Birch, and Yellow Birch within a steep ravine, which straddles the Massachusetts/Connecticut border (Leverett 2002).

--**Mount Race.**\* Fifty acres of old growth with White Pine, Pitch Pine, and Northern Red Oak. Mature Mountain Laurel forms the understory of the dwarfed Pitch Pine community. Trees have been aged at 150-250 years. Mount Race is just south of Mount Everett (Kershner and Leverett 2002, Leverett 2002).

--**Jug End State Reservation and Wildlife Management Area\*** (within the state forest). Thirty-five acres of old growth (Leverett 2002).

--**Mount Alander.**\* Fifteen acres of old growth (Leverett 2002).

### **Monroe State Forest**

A total of 273 acres of old growth divided among five sites.

--**Dunbar Brook-Bear Swamp.** Two hundred acres of White Pine, Eastern Hemlock, and hardwoods with ages of 150-300 years (Leverett 2002).

--**Parsonage Brook.** Fifteen acres of old growth. Hemlock, Red Spruce, Yellow Birch, and American Beech are the most conspicuous trees. Hemlocks are up to 250 years in age; Red Spruce are between 150 and 200 years (Leverett 1993, 2002).

--**Fife Brook.** Forty-five acres of old growth on the south-facing slope of the watershed within Monroe State Forest. Trees are Eastern Hemlock, Red Maple, American Basswood, Sweet Birch, and other hardwoods. Their ages range from 150-350 years (Leverett 2002). Leverett wrote in 1993 that the stand is arguably the best mixed old-growth northern hardwood-hemlock stand in Massachusetts. The area was logged somewhat around the perimeter, and attempts were made to pasture livestock in the sun-exposed eastern end. A greater diversity of herbaceous species occur at Fife Brook than in most other Berkshire old-growth areas (Leverett 1993).

An additional 100 acres of privately owned old growth is located within the Fife Brook watershed (Leverett 2002).

--**Upper Dunbar Brook.** Five acres of old-growth hemlock, Sugar Maple, White Ash, and Yellow Birch 150-300 years in age (Leverett 2002).

--**Spruce Mountain.** Eight acres of old-growth Eastern Hemlock, Sugar Maple, American Beech, and Yellow Birch 150-250 years in age.

### **Mount Wachusett State Reservation,\*** central Massachusetts (Worcester County)

A band of 220 acres of old growth that encircles the upper 500 feet of the 2006-foot-high Mount Wachusett. The old growth is found along rock ledges. The south slopes support Northern Red Oak, American Beech, White Ash, and Shagbark Hickory; the northern slopes, Red Maple, Sugar Maple, Yellow Birch, Red Spruce, and Eastern Hemlock. Stunted Red Oaks appear on northern exposures near the summit. The trees have been aged at 150-370 years (Kershner and Leverett 2002; Leverett 2002). The private company Wachusett Mountain Associates rents 450 acres of the 3000-acre Reservation from the Massachusetts Department of Environmental Management for a commercial ski resort. The company's desire to expand the ski slopes threatens the old growth. In the spring of 1998, illegally cut trails were found in the old growth.

### **Little River,\*** in Springfield (Hampden County)

In Little River Gorge, 150 acres of uneven-aged old growth. The old growth is owned and protected by the city of Springfield (Leverett 2000 and 2001).

**Savoy Mountain State Forest**, adjacent to Mohawk Trail State Forest in northwestern Massachusetts (Berkshire County)

A total of 120 acres of old growth divided among five sites.

--**Cold River D.** 35 acres of old-growth northern hardwoods mixed with Red Spruce and Eastern Hemlock. Like all the other sites in Savoy Mountain State Forest, trees are 150-400 years in age. (On the Cold River sites, see Mohawk Trail State Forest.)

--**Cold River E.** 20 acres of old-growth hemlock-hardwoods.

--**Cold River F.** 25 acres of old-growth northern hardwoods with Red Spruce and hemlock.

--**Cold River G.** 20 acres of old-growth hemlock-hardwoods.

--**Tannery Falls.** 20 acres of old-growth hemlock, Red Spruce, Yellow Birch, and Sugar Maple.

**Negus Mountain\*** (Franklin County)

One hundred acres of old growth on the south and southeast sides of the privately owned mountain. The slopes are rugged, “with elevation change coming at an average angle of over 40 degrees in a series of rock pitches that are separated by narrow to fairly broad shelf.” Big Sugar Maples grow at the base of the rock ledges; and Northern Red Oaks are everywhere abundant. The many other species include Bitternut Hickory, Hophornbeam, and Sweet Birch. At the level of the ledges and boulders, there are no signs of human disturbance. Below the ledges, where the slope is gentle, parts of very old rock walls are evident (Leverett 1997 and 2002).

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