NPS Form 10-900-b

OMB No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places
Multiple Property Documentation Form

COPY

This form is used for documenting multiple property groups relating to one or several historic contexts. See instructions in How to Complete the *Multiple Property Documentation Form* (National Register Bulletin 16B). Complete each item by entering the requested information. For additional space, use continuation sheets (Form 10-900-a). Use a typewriter, word processor, or computer to complete all items.

☒ New Submission ☐ Amended Submission

A. Name of Multiple Property Listing

Fire Observation Stations of the New York State Forest Preserve

B. Associated Historic Contexts

1. Development of the New York State Forest Preserve, 1870-1930

2. Evolution of Observation Towers in New York State, 1870-2000

C. Form Prepared by

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D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR part 60 and the secretary of Interior's Standards and Guidelines for Archeology and Historic Preservation. (☐ See continuation sheet for additional comments)

[signature] SHPO 7/26/01

Signature and title of certifying official **Date**

New York State Office of Parks, Recreation and Historic Preservation

State or Federal agency and bureau

I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Edson H. Beall 9.23.2001

Signature of the Keeper Date of Action

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Primary location of additional data: ☒ State Historic Preservation Office
☒ Other: Adirondack Architectural Heritage, Keeseville, NY

STATEMENT OF HISTORIC CONTEXTS

Summary

1. Development of the New York State Forest Preserve, 1870-1930

2. Evolution of Observation Towers in New York State, 1870-2000

Summary

The Fire Observation Stations of the NYS Forest Preserve are significant under criteria A and C. Under criterion A, the fire observation stations are closely associated with the development of the state's forest preserve, the first public preserve in the United States that predates the federal system, and the development of the state Forest Ranger service. While the primary purpose of the stations was to provide early warning of forest fires, the observation towers in the forest preserve were also instrumental in stimulating and managing recreational use in the early twentieth century, and cultivating within the public a modern conservation ethic. As such, they also represent the first public recreational structures in the nation's first forest preserve. Under criterion C in the area of architecture as representative examples of a distinctive property type, the fire observation stations are a group of well-preserved early twentieth-century prefabricated fire observation towers and associated cabins, cabin sites and other support structures.

The group included in this multiple property submission consists of ten stations established between 1872 and 1930 within the New York State Forest Preserve. This group is representative of a system that once numbered more than one hundred fire observation stations. Several of the stations incorporate improvements made by the Federal Civilian Conservation Corps (CCC) during the 1930s. The stations included in this nomination are not comprehensive, and listing of additional stations is expected.

1. Development of the New York State Forest Preserve, 1870-1930

Introduction

New York State's Forest Preserve was established by the Forest Commission Act (Chapter 283 of the Laws of 1885), the first comprehensive environmental law in the United States. The measure reserved wild forestlands owned by the state from sale for private development and placed them under the "care, custody, control and superintendence" of a newly formed Forest Commission composed of three members appointed by the Governor. The legislation was the culmination of a public discussion and lobbying by supporters of conservation who were concerned about over-lumbering, forest fire damage,

flooding and other misuse of the forest resources, especially those in the Adirondacks, a mountainous region in northeastern New York. The Forest Preserve was located exclusively within the Adirondacks and Catskills, another mountainous region immediately west of the Hudson River Valley south of Albany. The New York State agencies responsible for administering the law and its successors over time were the Forest Commission (1885-1894), the Fisheries, Game and Forest Commission (1895-1899), the Forest, Fish and Game Commission (1900-1910), the Conservation Commission (1911-1926), Conservation Department (1927-1965), and the Department of Environmental Conservation (1966-present).

The rugged Catskill and Adirondack regions are named after their predominant mountain ranges. The Catskills are the eroded eastern edge of the Allegheny Plateau. The eastern scarp, known as the Great Wall of Manitou, rises 1600 feet above the Hudson Valley region and gradually diminishes in height toward the west. The region has undergone a long cycle of stream erosion. The mountainous appearance results from high, often sharp crested divides between adjacent valleys, called cloves, cut deeply into near horizontal strata. The bedrock is almost entirely sandstone and shale with some late Devonian conglomerate at higher summits. Unlike the Adirondacks, the effects of glaciation are not evident. Their characteristic unsymmetrical ridges, with one slope long and gentle and the other steep, and terrace-like cliffs and shelves, result from post-glacial weathering of the sedimentary bedrock. The Catskills were largely covered by a primeval hemlock forest in the eighteenth century prior to white settlement.

The Adirondacks is an area of some six million acres located west of Lake Champlain and north of the Mohawk River. Within the area, elevations change from a few feet above sea level to several peaks more than 5,000 feet high. The mountains within the region are part of the anorthositic Canadian Shield, the outer surfaces of which are typically dense, metamorphic rock. The highest elevations are located primarily in the eastern section of the park where the rounded, glaciated mountains encompass five parallel ranges running southwestward from Lake Champlain: the Luzerne Range, Kayaderosseras Range, Schroon Range, Bouquet Range, and the Adirondack Range. In the central and western parts of the region the topography is generally flatter, characterized by rolling hills interrupted by isolated peaks. Scattered through the region are hundreds of lakes and ponds, many of which are connected by rivers, as well as swamps, bogs and marshes. The term "Adirondack" was first applied to a geographic entity within the region, being the high peaks area, by geologist Ebeneezer Emmons during the New York Natural History Survey of 1836-40.

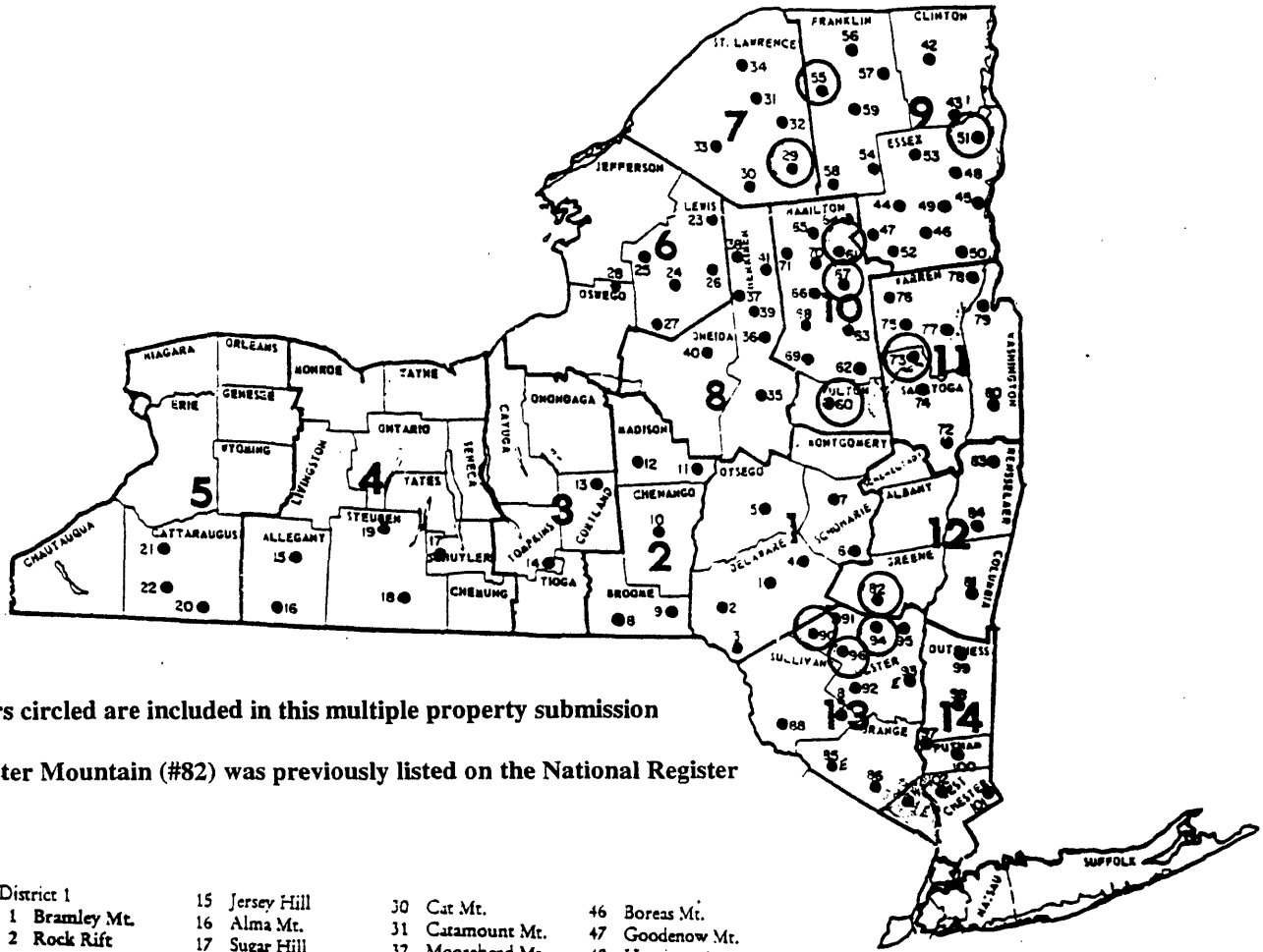
The raison d'être of the Forest Commission Act originated in the early nineteenth century. The Catskills and Adirondacks were initially dismissed as wastelands due to their thin soil covers, harsh climates and difficult terrain. The interiors were among the last regions to be explored and surveyed, and the forest covers remained intact at the turn of the nineteenth century. The rapid development of the domestic tanning industry, made possible by the expansion of trade following the War of 1812, provided the first major impetus to utilize the forest resource, in this case hemlock bark used in the

tanning process. Bark skinners left behind dead and dying stumps, much of which was subsequently burned to manufacture charcoal to fuel early industries in the valleys below. As a result, the Catskills and much of the southern Adirondacks had been denuded of their primeval hemlock covers by the time of the Civil War. Concurrently, as native timber stands were exhausted in the valleys below, lumbering operations moved into the interior of the Adirondacks in search of large spruce and pine for building, and later smaller trees for pulp. Tax laws prior to 1883 abetted logging operations, which purchased previously unutilized lands of the forest interior from the state at little cost, stripped them of marketable timber, and allowed them to default back to the state for unpaid taxes. The state remained the largest property owner in the region while the majority of its lands were being compromised and left unsuitable for other development.

NATIONAL REGISTER OF HISTORIC PLACES
MULTIPLE PROPERTY DOCUMENTATION FORM
CONTINUATION SHEET

Fire Observation Stations of the NYS Forest Preserve
Essex, Franklin, Fulton, Hamilton, St. Lawrence,
Saratoga and Ulster Counties, New York

Section E, Page 4



Towers circled are included in this multiple property submission

*** Hunter Mountain (#82) was previously listed on the National Register**

District 1
1 Bramley Mt.
2 Rock Rift
3 Twadell Point
4 Utsayantha Mt.
5 Hooker Hill
6 Leonard Hill
7 Petersburg Mt.
District 2
8 Ingraham Hill
9 Page Pond Hill
10 Berry Hill
11 Brookfield
12 Georgetown Mt.
District 3
13 Morgan Hill
14 Padlock Hill
District 4
15 Jersey Hill
16 Alma Mt.
17 Sugar Hill
18 Erwin
19 Plattsburgh T.
District 5
20 Hartzfelt Hill
21 McCarty Hill
22 Summit Mt.
District 6
23 Bald Mt.
24 Gomer Hill
25 New Boston
26 Number 4
27 Swancott Hill
28 Castor Hill
District 7
29 Arab Mt.
30 Cat Mt.
31 Catamount Mt.
32 Moosehead Mt.
33 Tooley Pond Mt.
34 White's Hill
District 8
35 Dairy Hill
36 Ft. Noble Mt.
37 Moose River Mt.
38 Stillwater
39 Woodhull Mt.
40 Penn Mt
41 Rondaxe Mt.
District 9
42 Lyon Mt
43 Palmer Hill
44 Adams Mt
45 Belfry Mt.
46 Boreas Mt.
47 Goodenow Mt.
48 Hurricane Mt
49 Makomis Mt.
50 Pharoah Mt.
51 Pok-O-Moonshine
52 Vanderwhacker
53 Whiteface Mt.
54 Ampersand Mt.
55 Azure
56 De Bar Mt
District 9
57 Loon Lake
58 Mt. Morris
59 St. Regis Mt.
District 10
60 Kane Mt
61 Blue Mt
62 Cathead Mt.
63 Hamilton Mt.
64 Kempshall mt.
65 Owl's Head Mt.
66 Pillsbury Mt.
67 Snowy Mt.
68 T-Lake Mt.
69 Tomany Mt.
70 Wakely Mt.
71 West Mt.
District 11
72 Cornell Hill
73 Hadley Mt.
74 Spruce Mt.
75 Crane Mt.
76 Gore Mt.
77 Prospect Mt.
78 Swede Mt.
79 Black Mt.
80 Colfax
District 12
81 Beebe Hill *
82 Hunter Mt.
83 Dickinson Hill
84 No. 7 Hill
District 13
85 Graham
86 Sterling Mt.
87 Jackie Jones T.
88 Chapin Hill
89 Roosa Gap
90 Balsam Lake Mt.
91 Belleayre Mt.
92 High Point
93 Mohonk Mt.
94 Mt. Tremper
95 Overlook Mt.
96 Red Hill
District 14
97 Beacon Mt.
98 Clove Mt.
99 Scissing Mt.
100 Ninham Mt.
101 Cross River Mt.
102 Nelson

FIGURE 1. Conservation Department Map of New York State Fire Observation Stations, c.1965. The only tower in operation at the turn of the 21st century is #86, Sterling Mountain. (Podskoch, M., *Fire Towers of the Catskills: Their History and Lore.* Purple Mountain Press, Albany, NY, 2000, p.10.)

A. Recreation and Conservation in the Adirondacks and Catskills before the Forest Preserve, 1830-1885

The forest came to be seen as a multi-faceted resource unto itself in the years prior to the Forest Preserve. Governor deWitt Clinton was among the first to recognize the role of New York's forests within the watershed of the state's canal system and warned against deforestation. In the 1830s, State Geologist Ebeneezer Emmons, in his reports on the survey of northern New York, urged restraint in harvesting the forest resource to permit recreational uses. Writers and painters, including William Cullen Bryant, Thomas Cole, Asher B. Durand and other landscape painters of the Hudson River School, conveyed the forest's aesthetic qualities in their work. The publication of George Perkins Marsh's *Man and Nature* in 1864,[1] a seminal environmental treatise, warned of catastrophic soil erosion and diminished agricultural productivity as consequences of uncontrolled logging. Marsh's ideas were taught in universities and found their way into the public press. Two journals, *American Sportsman* (founded 1871) and *Forest & Stream* (founded 1873) advocated for preservation of the forest, and in 1873, Wlliam Henry Brewer, professor of agriculture at Yale, began offering the first lectures at an American university on "scientific forestry," an approach to managing timber resources through selective cutting and reforestation.

Recreational uses, including hunting and fishing for sport and hiking for pleasure, were also well established in the Catskills and Adirondacks prior to the Forest Preserve. Hunters and anglers followed the roads cut by bark skinners and loggers into the interiors. Adventuresome anglers began fishing the Catskills' Esopus River in Shandakan as early as 1830. The first dedicated hiking trails were built and maintained as amenities by private resort hotels. In the Catskills, the earliest of these developed around the Catskill Mountain House, which opened in 1824 on a small plateau[2] renowned for its view on the eastern escarpment of the mountains near Kaaterskill Clove at an elevation of 2,200 feet. The more remote interior, with its higher peaks was less frequented by outsiders until the arrival of the railroads

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[1]George Perkins Marsh. *Man and Nature; Or, Physical Geography as Modified by Human Action* (New York: Charles Scribner, 1864).

[2]Called the Pine Orchard, it had previously been visited by botanist John Bartram to collect balsam fir seeds for shipment to England in 1741 and 1753. The site was visible from the Hudson Valley. Its view was made famous by James Fenimore Cooper's Natty Bumpo in *The Pioneers* (1823) who described it as encompassing "creation, all creation." Writers, artists and other guests admired the view from the hotel's piazza and hiked into the adjacent forest in search of wilderness subjects. As the region came to be better known, the owners of the Mountain House and subsequent hotels nearby developed scenic trails and carriage roads around North Lake, Kaaterskill Falls, Artist's Rock and other prospects made famous by the painters. The solitary Kaaterskill High Peak (elevation 3,665 feet), the most prominent summit in the area, was long claimed to be the highest peak in the Catskills. Roland van Zandt. *The Catskill Mountain House.* (New Brunswick, NJ: Ruters U. Press, 1966).

in the 1870s.[3] The center of outdoor recreational activity gradually shifted from the Kaaterskill Clove area to Phonecia, situated near the higher peaks, by the end of the century.[4]

In the Adirondacks, interest in the mountains was stimulated by state-sponsored scientific reports resulting from the natural resource survey conducted by Redfield and Emmons (1837-40) and the topographical survey of Verplanck Colvin (1872-1900). No trails to the summits of the central Adirondacks existed prior to the former, but some trails were established by woodsmen by the 1860s, and Colvin enlarged some existing trails early in his survey.[5] Beyond making some summits accessible by enlarging primitive trails or opening new ones, Colvin publicized the qualities of the mountains in his reports to the legislature. Among those who followed Colvin was Nathaniel B. Sylvester who described the awe inspired by the views from the summits in 1877:

> From the summit of any of the high mountains of the Great Wilderness, the scene presented to the eye of the beholder is one of the most striking and sublime in the whole domain of nature. It is at once awfully grand and wildly beautiful beyond the power of language to describe. On every side peak after peak towers up into the clear, cold atmosphere above the clouds, their outlines growing softer and more shadowy in the distance, until the earth and sky commingle in the vast encircling horizon. In all the nearer valleys, full in view, sleep numberless mountain meadows and quiet lakes and lakelets, "pools of liquid crystal turned emerald in the reflected green of impending woods.' Wonderful also are the hues and tints and shades of color which these mountains assume with the varying seasons of the year and with the daily changes of the weather, as the sky becomes bright and clear or dark and overcast. Now we see them clothed in the crimson and golden tints of the evening -- now in the cold, leaden grey of the morning; now silvery mists creep up their shaggy sides and linger languidly in their valleys--then purple

[3]Travellers previously reached Phonecia by stagecoach from Kingston. The construction of the Ulster & Delaware Railroad from Weehawken, NJ after the Civil War opened up the interior. The railroad reached Phonecia in 1870, Stamford in 1879 and Tannersville through Stony Clove in 1882.

[4]After Slide Mountain (elevation 4,204 feet) near Phonecia was surveyed and measured in 1872 by Arnold Guyot, a geologist from Princeton University, Panther Mountain House, a more modest accommodation than those in the Kaaterskill Clove area, was established with a network of trails by James W. Dutcher on its west slope. Naturalist John Burroughs, who ascended Slide's steep north slope in 1885, helped promote hiking in the area and mountain bushwhacking in general with his essay "The Heart of the Southern Catskills," in which he extolled that "the solitude of mountaintops is peculiarly impressive." The popularity of the region was secured when Dutcher improved his trail up Slide's gentler west slope in 1886 to accommodate State officials in a mountaintop ceremony on the occasion of the Catskills' designation as a protected forest preserve. By the mid-nineties, Dutcher provided a three-piece orchestra at the summit to entertain his guests. Nearby Tremper House, the first substantial railroad hotel in the area which had opened in 1879 for anglers, developed a trail for its guests up the mountain behind, which it renamed Mt. Tremper.

[5]Walter Collins O'Kane, *Trails and Summits of the Adirondacks* (New York & Boston, 1928), p. 42.

> shadows flit across them and play upon their summits. Sometimes the air is so pure and clear after a storm that all the mountains stand out with outlines so sharply defined, and their great forms seemingly appear so near, that we fancy human voices might be heard from the furthest of them. Then again they are all mantled with the matchless soft blue haze, often called mountain smoke, which is that dim, impalpable but lovely illusion and semblance of a color, that indescribable appearance of the fleeting, the vanishing and the spiritual, seen nowhere else in nature's realm but among the mountains, that makes the bristling crags and towering peaks, and solid mountain masses seem for all the world like softly sleeping clouds, hanging low-down in a far-off shadowy sky, or floating over the sleeping bosom of some distant mountain lake. Thus the scene forever changes, every day in the year, and every hour in the day presenting some new feature in the mountain landscape.[6]

The interests supporting preservation of the Adirondacks forest were represented in a State Park Commission established by the legislature in 1872. Their report, issued the following year, identified wasteful lumbering practices and recommended that the state set aside state owned lands from logging for use as a state "park." As such, its proposed use was modeled on private game preserves established by sportsmen during the 1870s.[7] These places, based on British, French and German prototypes, were intentionally set apart from uncontrolled economic development to provide a habitat where game animals, birds and fish could be managed, propagated and hunted. The idea of a similar federal system of public "forest reserves," was first considered by the U. S. Department of the Interior as part of an ambitious conservation program proposed in the late 1870s but failed to attract necessary support and remained unimplemented until the twentieth century.[8]

The State Park Commission's recommendation did not immediately lead to legislative action. New York's Forest Preserve, however, became a reality through the support of sporting and business interests. Hunters and anglers aimed to preserve the forest primarily as a habitat for game and fish, while businessmen sought to protect the watershed of the Hudson Valley. In response to lobbying by a

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[6]Nathaniel B. Sylvester. *Historical Sketches of Northern New York and the Adirondack Wilderness.* (Troy, NY: William H. Young, 1877), pp. 55-56.

[7]"In addition to the preservation and management game animals, fish-culture and forestry programs were also initiated. [Blooming Grove Park in Pike County, Pennsylvania (established 1871)] is particularly noteworthy. "It was probably the first attempt to establish systematic forestry in the United States." John F. Reiger. *American Sportsmen and the Origins of Conservation.* (New York: Winchester Press, 1975), p. 57. Among its founders were Charles Hallock, future editor of *Forest & Stream* and a strong advocate for New York's forest preserve. The founders of the Bisby Club in Herkimer County, New York (established 1877) founders leased a large tract of land to use as a "park or preserve.....where they might fish and hunt without molestation from the general public" believing that the state was unlikely to create the proposed "grand park" in the Adirondack forest. Reiger, p. 58.

[8]Schurz' ideas were attacked as aristocratic and un-American. Reiger, p. 76.

coalition of concerned organizations, led by the New York Chamber of Commerce and including the New York Board of Trade and Transportation, the Brooklyn Constitution Club, the journal *Forest & Stream* and other private entities, the Legislature appointed a committee headed by Professor Charles S. Sargent of Harvard in 1884 to draft policy guidelines on how the state should manage its forests. The committee concluded that the state should place the management of forest lands owned by the state under the supervision of a commission, which was the central idea incorporated in the 1885 legislation establishing the forest preserve.[9]

B. Early Fire Protection Programs in the Forest Preserve, 1885-1902

Protecting New York's forests from fire, including those on public and private lands,[10] was a goal that all interested parties -- logging, sportsmen and business -- agreed upon and was a priority of the Forest Commission Act from its outset. The forest was at great risk from this hazard due, in part, to the contemporary logging practice of "topping" a harvested tree and leaving it behind on the forest floor as highly flammable slash. Once ignited from any of a number of sources during dry seasons, forest fires spread rapidly and were nearly impossible to extinguish. As understood in 1885, the major ignition causes of forest fires were burning over natural meadows and berry fields with a view toward improving the yield; gum hunters; bee hunters; carelessness; hunters; maliciousness; iron manufacturing; and unknown causes. In the 1890s, when railroads had been extended into the Adirondacks, sparks from stacks and brakes and live coals from fire boxes were added to the list. The Forest Commission's program, launched in 1885, consisted of appointing a firewarden charged with the "prevention and extinction" of forest fires in each town of the counties within the forest preserve. These counties then included Essex, Franklin, Fulton, Hamilton, Herkimer, Lewis, Saratoga, St. Lawrence, Warren, Washington, Greene, Ulster, Sullivan and Clinton (except the Towns of Altona and Dannemora). Prevention, however, was limited to posting the edges of the forest with the Commission's fire regulations. No provision was made for preventive surveillance, even in times of drought when it was most needed. Instead, the program emphasized extinction. In the event of a fire, the firewarden was responsible for raising and directing a force to fight the fire and reporting on its outcome to the Commission. This too presented difficulties in practice, stemming from the fact that

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[9] See Franklin B. Hough. *Address ....on state forest management before the Committee on the preservation of the Adirondack forests of the Chamber of Commerce of the State of New York.* (New York: Press of the Chamber of Commerce, January 14, 1884); Charles Sprague Sargent et al., "The Adirondack forests: a symposium," *Outing*, April, 1885, pp. 77-83.

[10] "The same diligence and exertion must be used for the extinction of forest fires on private lands as on lands of the State. The public welfare requires that all forests should be protected from fire, no matter to whom they may belong." State of New York Forest Commission, standard warrant appointing firewardens, c1885, quoted in Louis C. Curth. *The Forest Rangers.* (Albany, NY: NYS Department of Environmental Conservation, 1987), pp. 17-19.

while the state appointed the firewardens, the towns were expected to pay for their services and the costs of fighting fires. Wardens only worked during emergencies, and often encountered resistance in raising men who were uncertain of being compensated for their work. In particular, the program did not effectively address two of the major causes of fires: the increasing presence of railroads running close to the forest edge along new lines opened during the 1890s in the Adirondacks, and the intentional burning of wild blueberry fields in the Catskills by pickers who ignored the posted regulations.

The effectiveness of surveillance was first demonstrated during the summer of 1899, an unusually dry year when some 322 fires burned over 79,653 acres in New York state. Differences in the extent of damage to public and private lands did not escape the notice of the Forest Commission:

> ....Although one-third of Adirondack forest is owned or controlled by private clubs, or held as private preserves, not one fire occurred on these lands, because this territory was thoroughly and efficiently guarded. On the million acres, or thereabouts, owned by the private preserves there are about ninety-eight patrols.[11]

As a solution, the Forest Commission proposed establishing a force of forest rangers responsible for patrolling fire districts.

> Surely the State with its greater acreage should have some kind of force, even if not so numerous.... The duties of a patrol are different from those of a firewarden. The firewarden's work commences after the fire has started; the work of the patrol, before. The best way to fight fire is to have no fire; and there will be very few fires in woods that are thoroughly watched. The patrol would follow each camping party, and all hunters or fishermen, to see that the "coffee fires" are extinguished; and he would keep a sharp watch on any skulker who might be a possible incendiary.[12]

No immediate action, however, was taken to establish patrols.

C. Devastating Fires in the Forest Preserve, 1903-1908

The first decade of the twentieth century remained unusually dry in the northeastern United States. In the late spring and early summer of 1903, 643 fires burned approximately 428,180 acres in the Adirondacks and over 36,000 acres in the Catskills. The principal cause remained the logging

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[11] Fisheries, Game and Forest and Commission of the State of New York, *Annual Report for the Year 1899* (Albany: Weed Parsons, 1900).

[12] *Ibid.*

operations that followed the railroads through the Adirondacks during a period of prolonged drought. While private preserves fared better than public lands, there were substantial losses. Fire claimed 40,000 acres of the Rockefeller preserve near Santa Clara, 12,000 acres of Webb's Nehasane, 10,000 acres of property owned by A.A. Low near Horseshoe Pond, 5,000 acres of the Whitney preserve, 2,000 acres at the Brandreth preserve, and Henry van Hovenberg's Adirondack Lodge near Keene Valley. The cause of the unusually large loss at the Rockefeller preserve was deemed suspicious and blamed on "incendiaries and degenerates, prompted by malice, revenge, and criminal instincts" who were angered over the forced resettlement of the hamlet of Brandon. Between 1904 and 1908 some 1,172 fires burned an additional 393,647 acres of land in the Catskill and Adirondack State Parks.[13]

The fires during the drought of 1908 were unusually severe, occurring at intervals from April 15 until October 26. Smoke from forest fires extended well beyond the forest boundaries and shrouded much of the northeast through the summer. A published account by a resident of Blue Mountain Lake that summer captured the state of extreme disorientation, helplessness and terror caused by the smoke that made fighting the fire so difficult once it was engaged:

> A few weeks ago smoke was observed--where did it come from? Some said Minnesota, others Michigan, still others said there must be a fire somewhere in our own forests. Day by day the smoke increased, and then news came of several Adirondack fires. Still little was thought of it. But the smoke increased, the air became heavy, tainted, vitiated, its vitality burned up, and the heat correspondingly increased. Even the sun was partially obscured, and all nature trembled, as if awaiting a catastrophe. Physical depression resulted; in many cases it became mental. The fires were all around -- spreading, approaching. Some hamlets were destroyed. This was not reassuring. The fires increased in number, they were coming nearer. Men felt their inability to cope with them. Non-religious men said, "We ought to pray for rain." Some did it. On Sept. 28 it came; moderately during the afternoon--more at night. People smiled as they met. Some sang the Doxology. The fires could now be controlled, the air was clearer, the long strain was over.[14]

[13]The Adirondack State Park contains 6 million acres of public and private land. Within this boundary is the 2.4 million acre, publicly owned Adirondack Forest Preserve. Established in 1885, it was the nation's first state forest preserve (NHL designated, 1966). The Catskill State Park includes approximately 750,000 acres of public and privately owned land. Within this area is the 500,000-acre Catskill State Forest Preserve.

[14]Juvenal, "In the Adirondacks," *Forest & Stream*, Oct. 17, 1908, p. 617.

D. Rethinking Forest Fire Protection, 1909-1915

The state's first network of fire observation stations was initiated with the sweeping amendments to the Forest, Fish and Game law signed by Governor Charles Evans Hughes in the spring of 1909. The main impetus for legislative action was the destruction caused by the fires of 1908, and the initial purpose of the first stations was exclusively fire protection. The amendments shifted the major operating expenses for fire protection from the towns to the state and provided for more extensive program organized by fire districts, initially three in the Adirondacks and one in the Catskills. Each district was administered by a trained superintendent who was in charge of a force of regular rangers or patrolmen whose responsibilities included prevention and early response. The District Superintendents were also charged with establishing a network of mountain-top fire observation stations equipped with towers connected by telephone lines to headquarters and manned seasonally by trained spotters. The amendments additionally empowered the Governor to close the forests to the public by proclamation during periods of drought, and mandated new regulations for railroads and logging operations including the installation of preventive appliances on locomotives, requiring the removal of slash near railroads and banning top-lopping.

In scoping out the new program, the Forest, Fish and Game Commission consulted with business and recreational interests in the Forest Preserve counties seeking successful models, including those used in the private preserves and other states. Dismissing European practices early on,[15] Commissioner James S. Whipple called a conference meeting of affected parties in his office on December 29, 1908 to discuss the problem.[16] A committee appointed to develop solutions recommended establishing a system of observation towers modeled on a program in place in Maine. The Maine observation stations had been placed in service in 1905 after the 1903 fires and had been major factors in limiting losses during in 1908 compared to New York and other forested states.

The Commission established its initial network of fire observation stations between 1909 and 1916. Nine stations were up and running during the summer of 1909 and an additional six would be readied for use the following year. The first station established in the Adirondacks was on the open summit of Mt. Morris in Franklin County near Tupper Lake in June. It was followed by other Adirondack stations on: Whiteface, West and Gore Mountains in July; Snowy Mountain in August; and Mount Hamilton in

[15]The Commission deemed comparing Europe's forests to those in New York a waste of time due to the facts that the former maintained more restrictive laws concerning private property and the latter had no peasant class to remove flammable material from the forest floor to use as fuel. State of New York Forest, Fish and Game Commission. *Ninth Annual Report* [for the Year 1903] (Albany: Oliver A. Quayle, 1904), pp. 17-18. No mention was made of fire observation towers.

[16]Gurth Whipple. *A History of Half a Century of the Management of Natural Resources of the Empire State: 1885-1935.* (Albany, NY: New York State Conservation Department and NYS College of Forestry, 1935), pp. 52-53.

September. In the Catskills, the existing privately built stations on Balsam Lake and Belleayre Mountains, and a new station established by the state on Hunter Mountain, were put into the state's service during the year. Underway before the end of the year were stations on Hurricane, Pharaoh , Moose Head , Cat and St. Regis Mountains. The location of a fifteenth, at Twadell Point in Delaware County, had also been decided upon.[17]

The program was immediately successful in controlling forest fires. In its annual report of 1910, the Forest, Fish and Game Commission noted:

> The value of the observation stations has been fully demonstrated.... The former method, waiting until smoke from a fire was so voluminous that it attracted attention several miles away, is too precarious and causes not only great property losses, but forest destruction.... The "smokes" are now observed when the fires are in their incipiency.... The cost of construction and maintenance is nothing in comparison with the property saved, forest protected and reduction in the cost of forest fires. The number of stations should be increased to at least thirty....[18]

The number of observation stations increased steadily in the first four years, to 20 in 1910, 36 in 1911, and 49 in 1912. These included new stations on Cat Head, Beaver Lake, Fort Noble, Lyon, Prospect, Twadell, and Woodhull Mountains in 1910; Ampersand, Arab, Bald, Black, Blue, Boreas, Catamount, Crane, Dunbrook, Kempshall, Makomis, Ohmer, Owls Head, Vanderwacker and Wakeley Mountains, all in the Adirondacks, in 1911; Adams, Belfry, DeBar, High Point, Loon Lake, Mohonk, Moose River, Poke-o-Moonshine, Rondaxe, Slide (Catskills), Stillwater, Swede and Tomany Mountains. A station on Azure Mountain was put in service in 1914.

Early detection was working. During the period, 1909-1913, for example, the system reported a total number of 2,251 fires that damaged 124,134 acres. Compared with the period 1904-1908, the average size of acreage damaged had been reduced from 335 acres to 55 acres per fire, and the average monetary damage had been reduced from $712 to $65 per fire. Concurrently, the Commission observed that while the earlier major causes associated with logging had been brought under control, most small fires were being caused by the increasing number of recreational users.

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[17] State of NY Forest, Fish and Game Commission, *Fifteenth Annual Report [for the Year 1909]* (Albany: J.B. Lyons, 1910), p. 53.

[18] State of NY Forest, Fish and Game Commission, *Sixteenth Annual Report [for the Year 1910]* (Albany: JB Lyons, 1911), p. 27.

E. Discouraging Recreation in the Forest Preserve, 1911-1916

By the early twentieth century, the State of New York had become the largest forest land owner in the eastern United States adjacent to the country's population center on the eastern seaboard. The railroads and automobile[19] made this public land accessible to greater numbers of visitors than ever before. The Commission acknowledged the new reality when it began its annual report of 1911 stating that "the Conservation Commission regards the State Forest Preserve as the people's great playground and health resort, for the use of all and abuse by none,"[20] but did little to encourage recreational use, for the future of the public forest preserve was far from secure. Logging in the Adirondacks reached its peak between 1890 and 1910, stimulated by the growing demand for pulp, and the Commission was pressured to sell public lands to consolidated logging interests.[21]

Balancing logging interests with recreational use in the forest had been the subject of uneasy discussion since the 1870s. The two uses were seen as competing and mutually exclusive interests.[22] In 1891, a law permitting the leasing of state lands for camping was enacted, but the practice became illegal in 1894 when Article VII, Section 7 of the State Constitution was ratified.[23] Through the first decade of the twentieth century, the Commission limited its active role to conservation, including fire protection that served both interests, while leaving the development of infrastructures for logging and recreation to the private sector on private land. As summarized by Philip G. Terrie:

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[19]In July 1902, the first known automobile to reach the central Adirondacks arrived in Saranac Lake driven by a honeymooning couple from Buffalo. By 1905 three college students drove to Blue Mountain Lake. The car became available to middle-class families beginning with the production of Henry Ford's Model T in 1908. Philip G. Terrie, *Contested Terrain: A New History of Nature and People in the Adirondacks* (Syracuse, NY: Syracuse U. Press, 1997), pp. 124-125.

[20]State of NY Conservation Commission, *First Annual Report for the Year 1911, Vol. I: Division of Lands and Forests* (Albany: The Argus Co., 1912), p. 10.

[21]Terrie, pp. 106-112.

[22]Verplanck Colvin, for example, advocated preservation of the forest for the protection of the watershed and recreation, while Franklin B. Hough, a physician who was an early proponent of scientific forestry, urged "reasonable" utilization of the forest resource. Both were members of the State Park Commission in 1872. The popular idea of actively developing the forest preserve for recreation helped keep in check the countervailing idea of opening the preserve's public lands to logging. Philip G. Terrie. *Forever Wild: Environmental Aesthetics and the Adirondack Forest Preserve* (Philadelphia: Temple University Press, 1985), p. 126.

[23]"The lands of the State now owned or hereafter acquired, constituting the forest preserve, as now fixed by law, shall be forever kept as wild forest lands. They shall not be leased, sold, or exchanged, nor shall the timber thereon be sold, removed or destroyed."

> During the first thirty years of the Forest Preserve, not a single new trail was marked by the state, not a lean-to or fireplace built, not a map or brochure published. In fact, absolutely nothing was done by the state [in the words of the Commission] "to make this big vacation country more accessible, more interesting, more useable, and better known to those whose property it is."[24]

Prior to the automobile, recreational activities were concentrated around centers with resort hotels and clubs accessible by public transportation nodes. Forays beyond these centers into the forest were typically accompanied by local guides who knew the terrain and importance of fire safety. The automobile dispersed these wilderness experiences throughout the forest without the need of a human guide. One of the consequences was an increase in the number of fires caused by individuals: smokers, campers, hunters and fishermen. In 1912, the Conservation Commission reported:

> The increased popularity of our mountain resorts has brought a larger number of people into the forest preserve, and therefore it has served a wider function, but this increased use has produced a greater forest fire danger. At the present time there are no restrictions as to camping on State land in the forest preserve, except that no permanent structures may be built (tents with a board floor are permitted); and that all persons must properly clear a space where any fire is built, and see that the same is entirely extinguished before leaving. There are approximately four hundred miles of suitable camp sites on the shores of lakes and ponds owned by the State in the Adirondack section alone. Many people who frequent the Adirondacks and do not own camps of their own are desirous of the opportunity of leasing camp sites.[25]

The Commission's discouragement of recreational use continued to be linked with fire protection in the years prior to World War I. "The number of forest fires [in 1913] which result from the carelessness, and it is only fair to call it, the criminal negligence of persons who use the woods for recreation, is appalling."[26] In 1914, the fires caused by fishermen, hunters and campers exceeded 50% of all fires, 44% of the lands damaged, and 57% of the total monetary loss. "This is a severe arraignment of the sportsmen of the State, but it seems to be true. As a class, they have unanimously agreed upon the policy of forest protection, but such a policy to succeed must have the individual assistance of the users of the woods."[27] In a partial effort to address the problem, the Conservation Commission began

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[24]Terrie, *Contested Terrain*, p. 126.

[25]State of NY Conservation Commission, *Second Annual Report for the Year 1912*. (Albany: The Argus Co., 1913), p. 69.

[26]State of NY Conservation Commission, *Third Annual Report for the Year 1913* (Albany: The Argus Co., 1914), p. 141.

[27]State of NY Conservation Commission, *Fourth Annual Report for the Year 1914* (Albany: The Argus

permitting private individuals, associations and corporations in 1913 to construct open camps[28] on state lands in accordance with certain rules and regulations stipulating that they be posted as "property of the State of New York" and "open to the public" and equipped with safe fireplaces.[29]

F. Conservation as a Social Service: Managing Recreation and Resource Protection with Fire Observation Stations, 1915-1930

The Conservation Commission's ambivalent and begrudging attitude toward recreational use ended in 1915 as the pulp logging industry declined in the east.[30] The Commission was reorganized[31] and George DuPont Pratt was appointed Commissioner. The new Commissioner, an officer of the Standard Oil Company, President of Pratt Institute, and an avid sportsman, was a former president of the Camp Fire Club of America and would be the first president of the Adirondack Mountain Club. Under his leadership, the Commission came to understand the importance of engendering strong public support for the Forest Preserve to justify its continued existence and expansion. In his preamble to the Commission's report for 1915, titled "Conservation a Social Service," Pratt spelled out a fresh vision for the agency:

> ....it must not be forgotten that conservation has a less tangible, but none the less real, basis of justification. Conservation deals with those things to which practically every normal person turns for relaxation in his moments of leisure. It deals among other things, with the forests, for which an innate love has been implanted in every man.... The Commission desires here to emphasize its belief in the tremendous importance of the aesthetic and recreational advantage derived from conservation, no less than the financial returns that are more easily traced. It has no data on which to base an estimate of the number of people who annually spend their

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Co., 1915), p. 78.

[28]"An *open camp* is one in which but three sides are enclosed, therefore, it cannot be locked, or other steps taken which would lead to its exclusion."

[29]State of NY Conservation Commission, *Third Annual Report for the Year 1913* (Albany: The Argus Co., 1914), pp. 60-61.

[30]"The decline of sources of pulp occurred throughout the East and was part of a general eclipse of the entire regional logging industry. Vicious competition, overproduction, and the emergence of large-scale logging in the West and South all led to a near collapse of eastern logging in the years just before World War I." Terrie, *Contested Terrain*, p. 108.

[31]An amendment to the Conservation law passed in the session of 1915 reduced the Commission from a board of three commissioners to one.

> vacations in the forest counties. But none are needed, for the part which those wooded sections play in the pleasure and health of the people of the State is evident to all who consider it.... Comment is made on another page of the number of forest, fish and game associations and similar organizations in the State whose reason for existence is almost entirely the protection of our forests and wild life. Through all of these organizations runs the spirit of social service. Their conduct entails much work and sacrifice upon their officers and guiding minds. That this work is faithfully and consistently performed and supported as universally as it is, is but another proof of the social value of conservation -- proof that places it on a plane with education, child welfare work, the labor movement, the various campaigns for public health, and every other activity for social betterment. Conservation, no less than those other movements, has its social workers in all parts of the State, who understand and are striving earnestly for the attainment of its ideals.[32]

Pratt drew upon his skills as a businessman, educator and outdoorsman to promote and manage recreational use of the Forest Preserve while strengthening the fire protection system. The foundation of the program was an innovative grass roots public education campaign launched in 1915 to reach the principal cause of fires -- present and future smokers, fishermen, hunters and campers. The campaign reached far beyond the previous practices of posting regulations on state lands and distributing brochures through the railroads. The new campaign included a multi-colored poster distributed for display on all railroads, and through the Department of Education, in all schools within the state. A decorated post card bearing the basic tenets of forest fire protection in verse was distributed to children and was used as a cover design on a national sportsmen's magazine. Perhaps the most far-sighted vehicle was a motion picture titled "The Match in the Forest" that portrayed

> ....a fire started by a match, the work of an observer on his tower on a mountain station of the State Forest Service, the speed at which fire fighters may be brought to a fire by means of the automobiles provided by the State and used by the District rangers, and the method of fighting fires. Through the entire film the keynote of care with fire in the woods is predominant.

The film, accompanied by lectures illustrated with stereopticon slides, was shown to audiences at the request of forest, fish and game associations, granges, YMCAs churches and other organizations in the state.[33]

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[32]State of NY Conservation Commission, *Fifth Annual Report for the Year 1915* (Albany: J.B. Lyons, 1916), pp. 11-12.

[33]State of NY Conservation Commission, *Fifth Annual Report for the Year 1915* (Albany: J.B. Lyons, 1916), pp. 12-14. Other motion pictures on growing trees in state nurseries, reforestation of denuded land, raising pheasants and fish hatcheries were produced the following year.

The fire observation stations made famous in the film quickly became destinations for hikers. The response appears to have caught the Commission somewhat by surprise. In ordering more permanent steel replacement towers in 1916 for the first generation of temporary towers erected in 1909, the Commission initially selected a model accessed only by a ladder and not suitable for public use. Within a year, however, the Commission recognized the attraction of stations and responded by purchasing heavier towers with integral stairs, improving and marking trails to the summits, and developing facilities for camping nearby. By clustering recreational use in this manner, the Commission was able to further educate the public in fire safety and monitor authorized campsites. The observers were indispensable to the success of the program. They embodied the spirit of the Adirondack guide and put a face on the agency. In addition to their spotting responsibilities, they served as educators, naturalists, folklorists, and performed many other tasks in maintaining trails and telephone lines, and when called upon, search and rescue and fire fighting.

During the 1920s, the state's forest fire protection program was extended to state land outside the forest preserve for the first time. The forest program continued to operate with few changes within the Forest Preserve itself, which remained entirely within the Adirondacks and Catskills. The greatest effort during this time was expended on maintaining and improving the telephone lines. Visitorship increased through the decades prior to World War II, from 30,500 in 1921 to 55,500 in 1930 and peaking at nearly 91,000 in 1941. The Forest Preserve also expanded. By the end of the 1930s, 2.4 million acres of forestland were under the Conservation Department's oversight and protection. Within this Department, the Bureau of Forest Fire Protection included 87 Forest Rangers, 13 District Rangers, and 84 Fire Observers and observation stations.

2. Evolution of Observation Towers in New York State, 1870-2000

Introduction

Observation towers in New York State developed in three distinct phases. During the first phase (1870-1907), the first impermanent wood towers erected on mountain summits in New York State were used for one or more purposes, including visual observation of forest fires during drought conditions. Between 1907 and 1915, the state established an initial system of fire observation stations employing, for the most part, site-built towers to provide visibility above the tree line. These were manned during the summer months and connected by telephone lines to settlements in the valleys below. Encouraged by the initial success of the fire observation network, and in response to increased visitorship in the preserves brought about by the automobile, the state replaced the earlier towers and added new ones using taller, standardized steel structures during the third phase (1916-1971). These provided greater comfort for the fire observers and accommodated recreational use by the public. All of the resources included in this submission are associated with the third phase of development, although several of the sites are also associated, respectively, with the first phase (namely, Balsam Lake, Blue and Snowy Mountains) and second phase (Balsam Lake, Blue, Poke-O-Moonshine, and Snowy Mountains).

A. Prototypical Observation Towers, 1870 - c1917

The tradition of building elevated platforms on mountain summits from which to view the surrounding landscape originated in New York in and around the Catskill region. The first towers within and without the future forest preserve were primarily built by the private sector for recreation. Perhaps the earliest documented observation tower of this sort was an octagonal 20' wood structure built around 1870 by Albert and Alfred Smiley on a high point of land near Mohonk Lake on the Shawangunk ridge outside New Paltz. It provided guests at the Smileys resort with vast scenic vistas overlooking the Catskill section of the future forest preserve but located outside its borders.[34] It was subsequently replaced by a stone tower. A less typical example was the enclosed four-stage observatory built on Mount Utsayantha (el. 3,214 ft.) near Stamford by Col. Rulif W. Rulifson in 1882,[35] which is no longer extant.

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[34]It was replaced by a three-stage, 25' wood tower in 1872, and a four-stage tower with an enclosed viewing room at the upper stage. It was subsequently replaced by the existing masonry Sky Top Tower that was designed by Boston architect Francis F. Allen and constructed in 1923 as a memorial to Albert Smiley. Marty Podskoch, "The Historic Fire Towers of the Catskills: Tall Tales and Hikes, *Catskill Country*, Fall/Winter 1998/99, p. 26.

[35]*Ibid.*, pp. 15-16. It was blown down by winds and rebuilt four times prior to 1916, and replaced by a steel fire observation tower erected by the CCC in the 1930s. The tower was removed by DEC in 1986.

The first towers built on summits by the state were erected during the survey of the Adirondack wilderness beginning in 1872 under the supervision of its Superintendent, Verplanck Colvin. Colvin's crews built temporary signal stations made visible by cutting alleys through trees near the summit on select summits to assist in measuring the heights of the mountains. These single purpose towers typically employed four stout poles set at an inwardly inclined taper and trussed with cross-braces of thinner poles. The simple structural arrangement was similar to site-built lumber towers used to support self-governing windmills, which came into common use in the 1850s to pump water in the midwest and west.[36] None of the temporary structures erected by Colvin are extant.

The new viewsheds opened up by surveyors were described in Colvin's annual reports to the legislature. Some of these towers were adapted to recreational use following their abandonment by the surveyors. A case in point was the signal station built on Blue Mountain in 1873, the view from which was described by Colvin in his 1874 report:

> The view northward was beautiful...the cluster of high peaks surrounding Mt. Marcy, sharp in outline, were whitened, as with snow, and between us and them was stretched a dark billowy sea of lesser mountains, among which we detected familiar mountain landmarks, from here appearing changed and new... At the east our more southern stations were visible -- Van de Whacker Mountain and the Chain Lakes -- and southward, through a long lane cut in the timber, Snowy Mountain."[37]

By the end of the 1870s, the view from the signal station was being enjoyed by tourists and was helping to shape a positive popular attitude toward the forest according to a published account of an ascent of the mountain:

> ....we came to a "timber slash" of ten or fifteen acres, where the trees had been felled to give an unobstructed view in every direction. In the midst of this opening, founded upon primeval rock which bears the surveyor's cabalistic characters ineradicably sunk into the solid mass, is erected a tall, steeple-like skeleton structure strongly-braced timbers, on the top of which is fastened the signal of bright tin, which can be seen flashing in the sun many miles away, from valley and mountain peak.....Upon these timbers we climbed, and perching there, twenty feet from the rocks beneath, gazed in every direction upon a wonderful scene. Until then we had never

[36]During the 1850s, the U.S. Patent Office issued over fifty patents for windmills, during which time a windmill that was automatically controlled and regulated without human attention was developed. T. Lindsay Baker. *A Field Guide to American Windmills*. Norman, OK: University of Oklahoma Press, 1985, p. 5.

[37]Quoted in Hochschild, p. 73. The visibility of the peak from other stations also led Colvin to establish it as "the referring station for Albany observatory time," where a powder flash scheduled at 9 p.m. during July through mid-September, 1876 coordinated time-keeping among the other stations.

> properly conceived of the grandeur of this remarkable region, nor the "general plan," of the mountains, lakes and rivers of the Adirondack wilderness. It is forest every where, and mountain, lake and river repeated on every hand; and all these are seen, I imagine, with something of the effect produced upon the mind of the beholder by looking down upon these features of nature from a balloon.[38]

After the signal tower had fallen and the alleys had grown back, recapturing Colvin's lost view provided the impetus for erecting a 35' rustic observation tower, paid for by public subscription, in 1907.[39] The wooden tower was subsequently replaced by the existing steel tower included in this submission.

Some of the early towers were also used to supplement the state's incomplete program of fire protection. Some owners of private preserves, such as Nehasane's William Seward Webb, purchased fire fighting equipment, established fire roads and maintained a force of men to remove slash and patrol the railroad lines in search of fires caused by sparks.[40] Private preserves and resorts developed a different preventive strategy to detect illegal burning visual spotting from observation towers. The first documented structure in New York State placed in service for this purpose was built in 1887 by the Balsam Lake Club, a private fishing club, atop the summit of Balsam Lake Mountain (el. 3,720) about 15 miles south of Arkville in western Ulster County. The station included a tower built of logs cut near the summit and was manned by a spotter during hazardous periods.[41]

In the climate of crisis following the 1903 and 1908 fires, private landowners upgraded or added fire observation stations to protect their property. In 1905, the Balsam Lake Club replaced its original

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[38] A. Judd Northrup. *Camps and Tramps in the Adirondacks, and Grayling Fishing in Northern Michigan: A Record of Summer Vacations in the Wilderness* (Syracuse, NY: Davis, Barden & Co., 1880), pp. 208-209.

[39] The campaign was led by Prof. J. M. Taylor of Colgate University who was disturbed over the loss of the view on a trip to the region. The tower was built by M. Tyler Merwin, proprietor of the Blue Mountain Hotel, whose patrons frequented the view. "Appreciation of Nature," *Forest & Stream,* 69, Oct. 19, 1907, p. 612. "The Tower on Blue Mountain," *Forest & Stream,* 71, Nov. 28, 1909, p. 850.

[40] The Commission addressed this problem by requiring the Raquette Lake Railroad from Clearwater to Durant to use oil as a fuel, urging other lines to adapt to oil or electricity, and requiring coal burning lines to equip locomotive flues and tubes with spark arresters. The arresters, however, were not fully effective. State of New York Forest, Fish and Game Commission. *Ninth Annual Report* [for the Year 1903]. (Albany: Oliver A. Quayle, 1904) p. 16.

[41] The tower was designed by Frank Meade from Arena, NY and built under the supervision of Sturgis Buckley, the club warden. Marty Podskoch, "First Place: Balsam Lake Mountain in far west of county hosted one of the first fire towers in nation," *Woodstock [NY] Times*, August 27, 1998. The observation tower at the Mohonk resort in the Shawangunks, which continued to be visited by guests, was also placed in similar service as needed.

tower, which had been destroyed by lightning in 1901, with a new 35' wood tower built of locally cut timber lashed together. The tower provided an unobstructed view of nearly 18 miles in all directions and was connected by telephone to the valley below by six miles of telephone line. This tower was subsequently replaced by the exising steel tower included in this submission. Elsewhere in the Catskills, a 65' steel tower, the first in the state, was erected on Belleayre Mountain in Ulster County prior to 1909. The trussed steel structure was paid for by public subscription and built on private land owned by Eugene E. Howe who had maintained a private fire patrol to guard his 4,000 acres on the mountain.[42] This tower was subsequently replaced by a steel tower which is no longer extant.

B. Temporary Fire Observation Stations, 1909-1916

The state's first network of fire observation stations was initiated with the amendments to the Forest, Fish and Game Law enacted in 1909. It was closely modeled on an established program in Maine as described by Maine's Forest Commissioner Edgar R. Ring to New York's State Forester Clifford R. Pettis in January, 1909:

> They are connected by telephone to the nearest firewarden and are equipped with a range finder, compass, strong field glasses, and a plan of the surrounding country, drawn to a careful scale. With these instruments, our wardens have located fires accurately 30 miles distant, notified the wardens and had them extinguished before making any great headway. The cost of installing these stations of course depends upon the length of telephone line, but we have estimated that the stations in this State cost from $400 to $800.... In my opinion one man located at a station will do more effectual work in discovering and locating fires than a hundred would do patrolling. Of course patrols are needed to follow up on camping parties, and with a good system of lookout stations and patrols you have got a system for fire protection which is pretty near the thing.[43]

In June 1909, the first station in the Adirondacks was established on the open summit of Mt. Morris in Franklin County near Tupper Lake. It was followed by other Adirondack stations on: Whiteface, West and Gore Mountains in July; Snowy Mountain in August; and Mount Hamilton in September. In the

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[42]The original tower was replaced in 1930 by a new 80' steel structure. The station was closed in 1984 and the tower removed the following year. Marty Podskoch, "Bright lights, big forest: Fire wasn't the only danger threatening tower observers, as one Belleayre Mountain spotter learned," *Woodstock Times*, October 16, 1998.

[43]State of NY Forest, Fish and Game Commission, *Fourteenth Annual Report [for the Year 1908]* (Albany: JB Lyons, 1909) pp. 45-46.

Catskills, the existing privately built stations on Balsam Lake and Belleayre Mountains, and a new station established by the state on Hunter Mountain, were put into the state's service during the year. Underway before the end of the year were stations on Hurricane, Pharaoh, Moose Head, Cat and St. Regis Mountains. The location of a fifteenth, at Twadell Point in Delaware County, had been decided upon.[44] The number of observation stations increased steadily in the first four years, to 20 in 1910, 36 in 1911, and 49 in 1912. These included new stations on Cat Head, Beaver Lake, Fort Noble, Lyon, Prospect, Twadell, and Woodhull Mountains in 1910; Ampersand, Arab, Bald, Black, Blue, Boreas, Catamount, Crane, Dunbrook, Kempshall, Makomis, Ohmer, Owls Head, Vanderwacker and Wakeley Mountains, all in the Adirondacks, in 1911; Adams, Belfry, DeBar, High Point, Loon Lake, Mohonk, Moose River, Poke-o-Moonshine, Rondaxe, Slide (Catskills), Stillwater, Swede and Tomany Mountains. A station on Azure Mountain was put in service in 1914. Of these early stations established by the State between 1909 and 1914, The station sites on Snowy, Balsam Lake, Arab, Poke-o-Moonshine and Azure Mountains are included in this nomination, although the extant features post-date this phase. The development and disposition of these and other early stations in the forest preserve are summarized in the chronological table in *Figure 2.*

Communications was the first priority and most labor-intensive task in establishing the stations. It entailed running about 73.5 miles of telephone lines over long distances through dense forest and over difficult terrain. The lines were connected directly to main telephone lines where possible, but in some cases, the state had to buy existing private lines. The system linked the stations with the district headquarters in Lake Placid, Northville, Old Forge and Seager, regional ranger stations in nearby towns, and fire fighting forces situated on private preserves. The observers located fires using United States Geological Survey topographical maps in regions where available during the first years. These were oriented to the surrounding country on a table erected on the mountaintop. By 1913, alidades and where practicable, range finders were included in the standard equipment of stations.[45] The stations built during this period of rapid expansion were varied, temporary and inexpensive due to limited appropriations. None of these original tower structures, among which there was wide variation, remain standing today. Towers and platforms were only built where needed, and seven of the 20 stations placed in service in the first two years had sufficient views to require none.[46] Nearly all of the early towers were built of wood. At least one, the tower on Prospect Mountain, was recycled

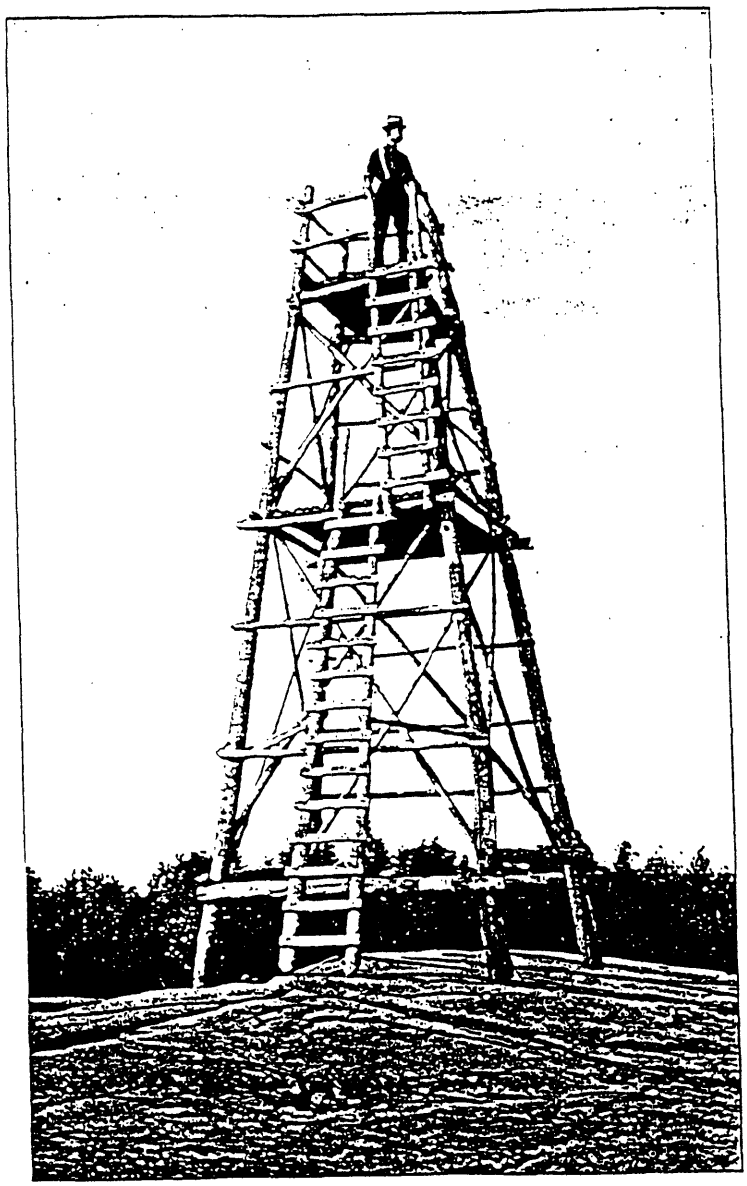
[44]State of NY Forest, Fish and Game Commission, *Fifteenth Annual Report [for the Year 1909]* (Albany: J.B. Lyons, 1910), p. 53.

[45]State of NY Conservation Commission, *Third Annual Report for the Year 1913* (Albany: The Argus Co., 1914), p. 149.

[46] These were Pharaoh, Hurricane, Whiteface, St. Regis, Mount Morris, Lyon and Beaver Lake Mountains.

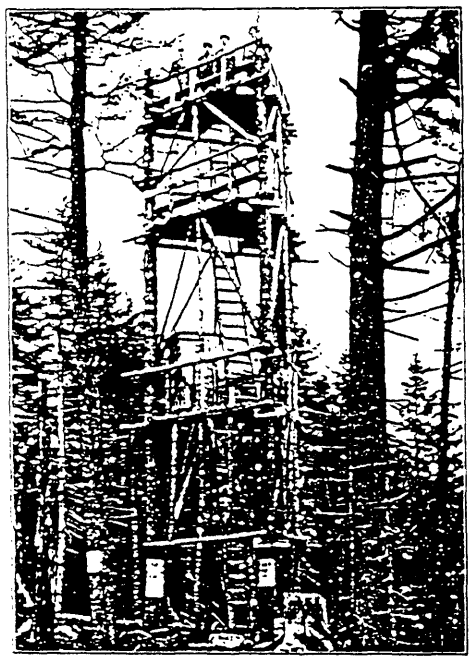
FIGURE 2. Development and Disposition of Fire Observation Stations and Steel Towers in the NYS Forest Preserve, arranged chronologically by date of station establishment (Primary Source: Curth; nominated resources in bold).

Station	County	Station Established	Steel Tower Built	Steel Tower Status	Notes
Balsam Lake Mountain	**Ulster**	**1887**	**1919**	**extant**	privately established; incorporated in NYS system 1909
Blue Mountain	**Hamilton**	**1907**	**1917**	**extant**	privately established; incorporated in NYS system 1909
Belleayre Mountain	Ulster	c.1909	c.1909	removed	privately established; incorporated in NYS system 1909
Mount Morris	Franklin	1909	1919	?	first station established by NYS; now privately owned
Whiteface Mountain	Essex	1909	1919	removed	
West Mountain	Hamilton	1909	1919	removed	
Gore Mountain	Warren	1909	1918	extant?	
Snowy Mountain	**Hamilton**	**1909**	**1917**	**extant**	
Mount Hamilton	Hamilton	1909	1916	removed	
Hunter Monntain	**Greene**	**1909**	**1917**	**extant**	**NR listed 1997**
Hurricane Mountain	Essex	1909	1919	removed	scheduled for removal or transfer in 1998
Pharaoh Mountain	Essex	1909	1918	removed	its removal was catalyst of recent preservation efforts
Moose Head Mountain	St. Lawrence	1909	1916	removed	
Cat Mountain	St. Lawrence	1909	1917	removed	
St. Regis Mountain	Franklin	1909	1918	extant	
Spruce Mountain	Ulster	1909	n.a.	n.a.	closed 1912, no steel tower built
Twadell Point	Delaware	1910	1910	extant?	
Cat Head Mountain	Hamilton	1910	1916	extant?	
Beaver Lake Mountain	Herkimer	1910	1919	removed	
Fort Noble Mountain	Herkimer	1910	1916	removed	
Lyon Mountain	Clinton	1910	1917	extant?	scheduled for removal or transfer in 1998
Prospect Mountain	Warren	1910	1932	removed	
Woodhull Mountain	Herkimer	1911	1916	extant	
Ampersand Mountain	Franklin	1911	1921	removed	
Arab Mountain	**St. Lawrence**	**1911**	**1918**	**extant**	
Bald Mountain	Lewis	1911	1919	removed	
Black Mountain	Washington	1911	1918	extant	currently used by NYS Police
Boreas Mountain	Essex	1911	1919	removed	
Catamount Mountain	St. Lawrence	1911	1917	removed	
Crane Mountain	Warren	1911	1919	removed	
Dunn Brook Mountain	Hamilton	1911	n.a.	n.a.	closed 1919, no steel tower built
Kempshall Mountain	Hamilton	1911	1918	removed	
Makomis Mountain	Essex	1911	1916	removed	
Ohmer Mountain	Saratoga	1911	n.a.	n.a.	closed 1915, no steel tower built, superceded by Hadley
Owls Head Mountain	Hamilton	1911	1919	extant	
Vanderwacker Mountain	Essex	1911	1918	extant	
Wakely Mountain	Hamilton	1911	1916	extant	
Adams Mountain	Essex	1912	1917	removed	scheduled for removal or transfer in 1998
Belfrey Mountain	Essex	1912	1917	extant?	
DeBar Mountain	Franklin	1912	1918	removed	
High Point Mountain	Ulster	1912	1919	removed	
Loon Lake Mountain	Franklin	1912	1917	removed	scheduled for removal or transfer in 1998
Moose River Mountain	Herkimer	1912	1919	removed	
Poke-o-Moonshine Mtn.	**Essex**	**1912**	**1917**	**extant**	
Rondaxe Mountain	Herkimer	1912	1917	extant	
Slide Mountain	Ulster	1912	1934	removed	
Stillwater Mountain	Herkimer	1912	1919	?	scheduled for removal or transfer in 1998; now privately owned
Swede Mountain	Warren	1912	1918	?	scheduled for removal or transfer in 1998; now privately owned
Tomany Mountain	Hamilton	1912	1916	removed	
Tooley Pond Mountain	St. Lawrence	1913	1919	removed	
Azure Mountain	**Franklin**	**1914**	**1918**	**extant**	
T-Lake Mountain	Hamilton	1916	1916	removed	
Hadley Mountain	**Saratoga**	**1917**	**1917**	**extant**	
Mt. Tremper	**Ulster**	**1917**	**1917**	**extant**	
Pillsbury Mountain	Hamilton	1918	1924	extant	
Red Hill	**Ulster**	**1920**	**1920**	**extant**	
Goodnew Mountain	Essex	1922	1922	removed	now privately owned
Kane Mountain	**Fulton**	**1925**	**1925**	**extant**	
Gallis Hill	Ulster	1927	1927	removed	steel tower moved to Overlook in 1950
Number Four Mountain	Lewis	1928	1928	removed	
Spruce Mountain	Saratoga	1928	1928	?	scheduled for removal or transfer in 1998; now privately owned
Mount Utsayantha	Delaware	1934	1934	extant	summit had private recreational tower in 1880s
Overlook	Ulster	1950	1950	extant	



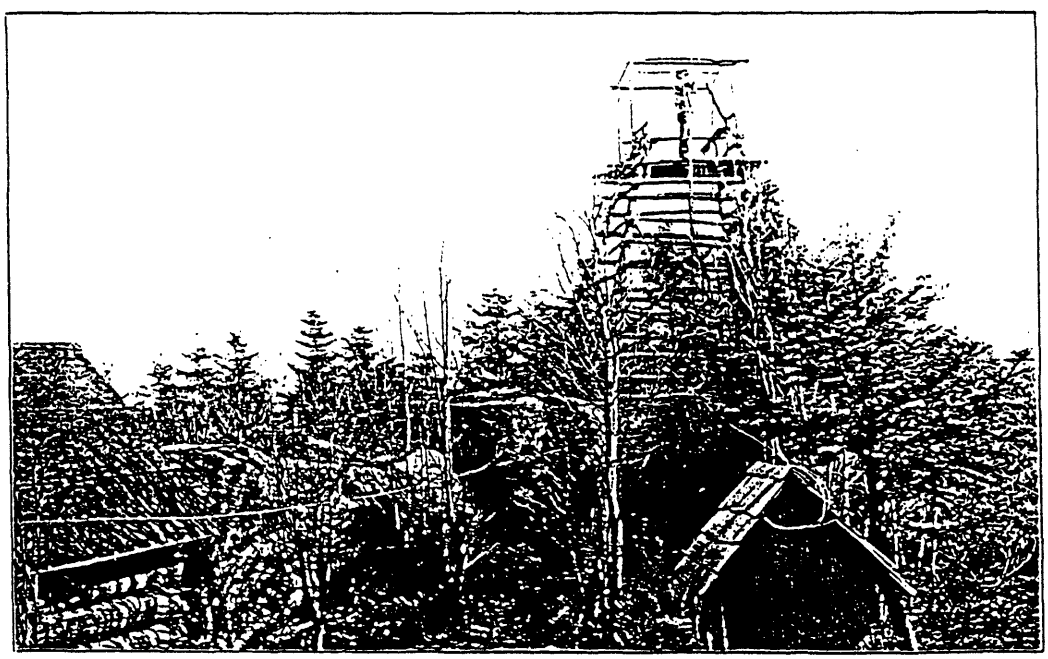
TOWER FOR OBSERVERS USE IN LOCATING FOREST FIRES.

FIGURE 3. Blue Mountain, Hamilton County, NY, the tower built in 1907 as it appeared in use as a fire observation station c 1910. The tower was designed for public use and sturdier than most site-built units developed by the state. (State of NY Conservation Commission, *Annual Report for the Year 1911* (Albany: The Argus Co., 1912)



Observation Tower on Hunter Mountain, Greene County
50 feet high

FIGURE 4. Hunter Mountain, Greene County, NY, the first State observation tower built there in 1909 and tallest of the early towers as it appeared in 1910. The cabinet housed the telephone equipment. (State of NY Conservation Commission, *Annual Report for the Year 1910.* Albany, 1912)



Hamilton Mountain Station, Hamilton County. Tower 18 Feet High.

FIGURE 5. Hamilton Mountain, Hamilton County, NY, the first State observation tower and cabin built there in 1909 as it appeared c1910. (State of NY Forest Fish and Game Commission, *Annual Report for the Year 1910.* Albany, 1911)

from a previous use as a hotel cupola and hauled intact to the summit. Among the most substantial site-built towers was the one built by private subscription for viewing the scenery atop Blue Mountain, which was incorporated into the state's system (*Figure 3*).The unusual three-level tower on Hunter, at 40' among the tallest of the group, was built with three plumb log legs, possibly utilizing standing trees, braced by triangular pole trusses (*Figure 4*). The tower on Makomis Mountain was also unusual in that it was clad with clapboards from the ground up and had an enclosed cab with a gable roof at the top. More typical were open, rustic towers at Hamilton (*Figure 5*), Gore, Fort Noble, Cat Head, and the replacement tower at Balsam Lake Mountain built by the state in 1910. As documented in the Commission's annual reports, these, like the one on Blue Mountain, appear to have been informed by the steel tower structures, using four inwardly angled log legs cross-braced by poles. Others appear to have been built in haste or based on non-traditional forms, such as the exclusively horizontally braced tower at Hamilton Mountain. With few exceptions, the observers stood in the open on wood platforms. Only two towers of this generation were built of steel: the pre-existing 65' tower at Belleayre Mountain taken over by the state in 1909, and the 45' tower at Twadell Point purchased and erected by the state in May, 1910. Both of these were standard windmill towers built with angle iron legs and terminated in open platforms at the top (*Figure 6*). In 1913 and 1914 the Conservation Commission,[47] successor to the Forest, Fish and Game Commission, replaced eight of these first generation towers. Most of the replacements continued the tradition of using logs, but some used the standing trunks of live trees growing closely together for uprights. These were trimmed by cutting off the tops on a diagonal and creosoting the cut, removing the bark from the trunks and building a platform of poles.[48] It was steel, however, that showed the greatest promise for more permanent installations. "Discarded steel windmill towers make excellent observatories," noted the Commission at that time. "They can be taken to pieces and are so light as to be easily transported up a mountain."[49]

Observers camped in field tents or very primitive huts at or near the stations during the first two years. During 1912, the Conservation Commission began to secure more permanent equipment.[50]

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[47]Created by Chapter 647 of the laws of 1911 known as the Conservation Law consolidating in one agency all duties of administration over forests and streams, fish and game. It succeeded all powers and duties of the Forest, Fish and Game Commission, the Forest Purchasing Board, the Water Supply Commission and Commissioners of Water Power on the Black River. The Conservation Commission was overseen by three commissioners responsible for Fish and Game, Lands and Forests, and Inland Waters.

[48]State of NY Conservation Commission, *Third Annual Report for the Year 1913* (Albany: The Argus Co., 1914), p. 150.

[49]*Ibid.*, p. 150. They could be obtained for $20 to $25 each in 1913, but it is not known if any were built in this manner.

[50]State of NY Conservation Commission, *Second Annual Report for the Year 1912*. Albany: The Argus Co., 1913, pp. 84-85.

FIGURE 6. Twadell Point, Delaware County, NY overlooking the Catskills, was one of two known examples of reused steel windmill towers with open platforms during the period 1909-1916. It was placed in service in 1910 and was subsequently replaced by a new steel tower. (State of NY Forest Fish and Game Commission, *Annual Report for the Year 1910.* Albany, 1911)

"A substantial cabin is much to be preferred, as the weather conditions on the top of the mountain are often rigorous, even during the summer months."[51] By the close of the season, 32 of the stations had cabins in place; 22 of these were built of logs, with the remaining framed with lumber. Like the towers themselves, the cabins varied in size, shape and claddings, including shingles, clapboard and bark. Stations also included housing for the telephone equipment in cabinets mounted to the towers or freestanding shanties.

C. Standardized Fire Observation Stations, 1916-1932

The third phase of fire tower development resulted from the State's intentional efforts to combine the objectives of fire protection with the management of recreational use. Between 1916 and 1920, the Conservation Commission upgraded the existing network of fire observation stations by improving trail access to the stations and replacing the first generation of temporary towers with more durable steel structures able to accommodate public use. The towers placed in service between 1916-20 include the oldest structures that remain standing in the state (see *Figure 2* for dates of construction and current status).

Upgrading the stations was closely associated with the public education campaign to accommodate public visitation beyond their original purpose. Between 1916 and 1920, the Commission replaced its first generation of towers and equipped new stations with new prefabricated steel windmill towers

[51] State of NY Conservation Commission, *Third Annual Report for the Year 1913* (Albany: The Argus Co., 1914), p. 150.

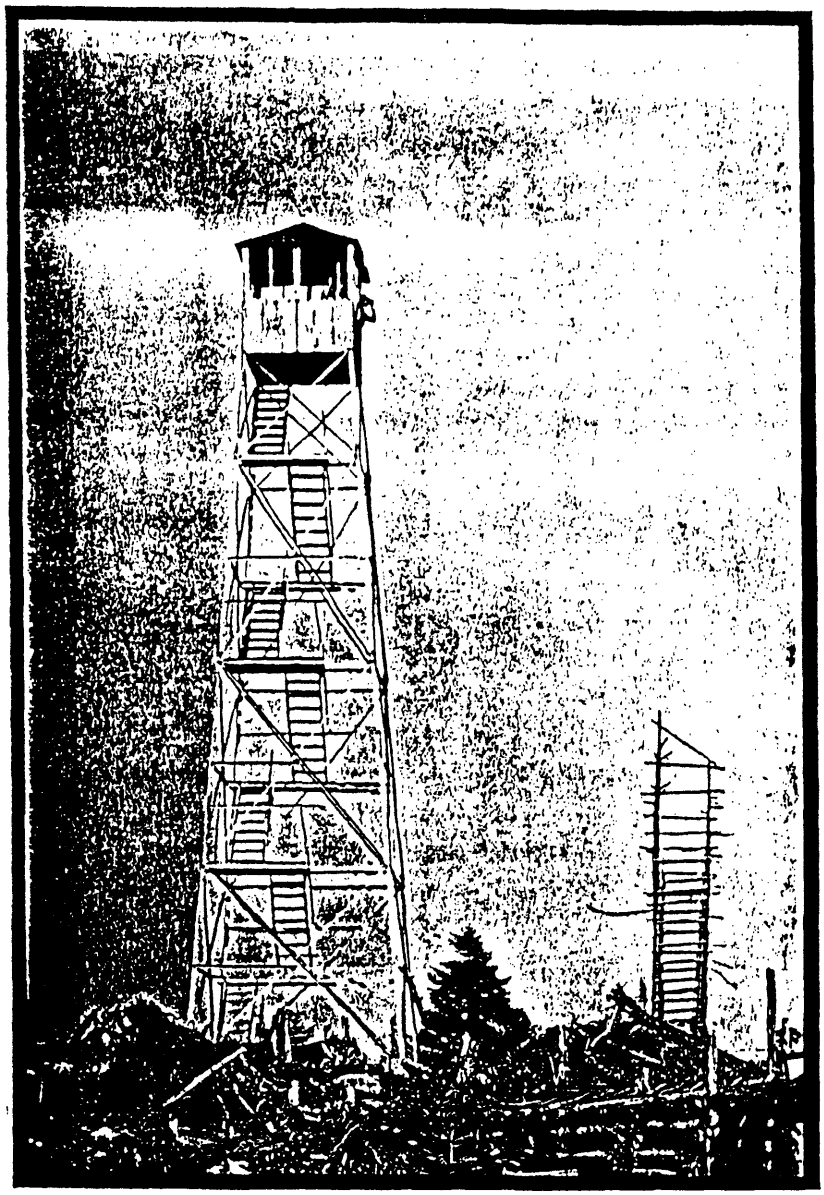
(*Figure* 7). An initial group of nine structures were purchased in 1916. These were erected that year to replace the earlier structures on Cathead, Hamilton, Tomany, Wakely, Mooshead, Fort Noble, Makomis and Woodhull Mountains, and to equip a new station on T-Lake Mountain, all in the Adirondacks. The remaining one was put into service the following year at a new station in the Adirondacks on Hadley Mountain, which replaced a discontinued station nearby on Ohmer Mountain. The Hadley tower is included in this submission. These were followed by another group of 11 towers purchased and erected in 1917 to replace earlier structures on Hunter in the Catskills and Adams (*Figure* 7), Belfry, Blue, Cat, Catamount, Loon Lake, Lyon, Poke-O-Moonshine, Rondaxe and Snowy in the Adirondacks, and establish a new station on Mt. Tremper in the Catskills.[52] The stations on Arab, Azure, Bald, Black Crane, DeBar, Kempshall, Pharaoh, St. Regis, Stillwater and Swede, Vanderwacker Mountains, and Mt. Morris were equipped with new towers purchased and erected in 1918.[53] The following year 11 new towers were purchased for Boreas, Moose River, West, Tooley Pond, Beaver Lake, Hurricane, Owls Head, and Whiteface in the Adirondacks, and High Point, Balsam Lake, and Twaddell Point in the Catskills. All were erected in 1919 except for those at Balsam Lake and West Mountains, which were put in service the following spring. By 1920, 50 new towers had been placed in service. The construction of towers that year at a new station on Red Hill and to replace the older steel structure on Belleayre in the Catskills brought this initial period of concentrated upgrading to a close. Of the towers built beteen 1916 and 1920, those at Hadley, Blue, Poke-o-Moonshine, Snowy, Tremper, Azure, Balsam Lake and Red Hill are included in this submission. The old hotel cupola on Prospect Mountain remained in use until 1932 when it was replaced with a steel tower. Subsequent towers erected at new stations in the preserve included ones on Ampersand (1921), Goodnew (1922), Pillsbury (1924), Kane (1925), Number Four (1928), and Spruce (1928) Mountains. Of these, the tower on Kane Mountain is included in this submission.

The derrick-like trussed steel tower was then the newly emerging standard used in federal and state forests, and the Commission had favorable experience with similar used structures at a few stations. The towers were purchased from the Aermoter Company, a leading manufacturer of self-oiling windmills then based in Chicago.[54] Since being first introduced in the 1890s, prefabricated steel

[52]State of NY Conservation Commission, *Annual Report for the Year 1917* (Albany: J.B. Lyons, 1918), pp. 68-69.

[53]State of NY Conservation Commission, *Annual Report for the Year 1918* (Albany: J.B. Lyons, 1919), pp. 118-119.

[54]The Aermoter Co. was organized in 1888 by LaVerne Noyes, an inventor of haying tools and native of Genoa, NY and Thomas O. Perry, an engineer who pioneered steel wind wheels and mills. "By far the most popular water-pumping windmill of the twentieth century, the Chicago-built self-oiling Aermotor mills have been called the Cadillac of the windmills because of their outstanding design and craftsmanship." Aermotor was based in Chicago until 1958 when the firm began the first of several changes in ownership. Among the firms producing Aermotor components since then have been the Aermotor Division, Motor Products Corp., Chicago; Aermotor, Inc., Division of Nautec Corp., Chicago; Aermotor Division, Braden-Aermotor Corp., of Broken Arrow, OK; Aermotor Division, Braden Industries, of Conway, AK; and Aermotor Division, Valley Industries, of Conway, AK.



The modern steel tower on Adams Mountain, and the wooden tower that it replaced.

FIGURE 7. Adams Mountain, Essex County, NY, "the modern steel tower... and the wooden tower it replaced." The steel tower, built in 1917, was typical of the heavier duty units placed in unit between 1917-1950. (State of NY Conservation Commission, *Annual Report for the Year 1917.* Albany, 1918)

towers had been widely exhibited at expositions and state fairs, and were common landscape features in the West, where they were used to pump water for farmsteads. The windmill towers were easily adaptable to their new purpose and site conditions. The upper stages, which carried the windmill, were left off and replaced by an enclosed steel cab measuring approximately 7' square. Heights were adjustable by adding standard truss sections to the bottom. Models built with different gauges of steel and special connections were available to suit wind and ground conditions. At the base, the angle iron legs held by patented foot clamps were anchored directly to the exposed ledge by countersunk rods or raised on concrete leveling piers. The structures ordered in 1916 were designed for use without stairs. Many were additionally tied down with guy wires. The standard "model LS-40" structures used in subsequent years were constructed with heavier members to accommodate the added weight of steel staircases with wood treads.

Moving several tons of steel components to the summits was difficult. In most cases, this could not be accomplished by motorized vehicles alone. At Mount Adams in Essex County, for example, the components were brought up part way from the base of the mountain over a corduroy road. At the end of the road, they were off-loaded and skidded for a ways by a team of horses. The components were then carried by hand by the rangers, foresters and observers over the last leg to the summit. The towers themselves were designed to be assembled on the ground and then raised upright or constructed piece-by-piece in place, but the granite ledge and rugged terrain at the summits precluded the former method. Typically, the foot clamps were set in anchor holes drilled into the granite and/or poured-in-place concrete pads, the leg, stair and strut sections lifted and bolted in place, and the observer's cab assembled on top.

The upgrading work also included replacing the first generation of shelters for the observers and improving trails for use by the public. New cabins were built at Hurricane, Blue, Kempshall, Rondaxe, Hadley, Tremper and Twaddell Mountains in 1917, Vanderwacker and Balsam Lake Mountains in 1918, and Ampersand, Azure, Whiteface, and Pillsbury in 1919. The new cabins were more comfortable for the observers and more presentable to the public, but were not yet standardized. The one at Ampersand, for example, was a simple log cabin with saddle notch corners with detached log lean-to. At the same time, public accessibility to the observation stations was made a priority (*Figure* 8). "The mountain station trails are being constantly improved to initiate the climbing of the mountains by visitors in order they may avail themselves of the recreational and educational opportunities offered by a visit to one of these stations,"[55] reported the Commission. Uniform "guideboards" were placed at trailheads to inform visitors of the routes, the towers purchased in 1916 were retrofitted with stairs for public use,[56] and the Commission began to provide open camp shelters at trailheads and along trails to

[55]NYS Conservation Commission, *Annual Report for the Year 1919* (Albany: J.B. Lyons, 1920), p. 138.

[56]NYS Conservation Commission, *Annual Report for the Year 1918* (Albany: J.B. Lyons, 1919), p. 119.

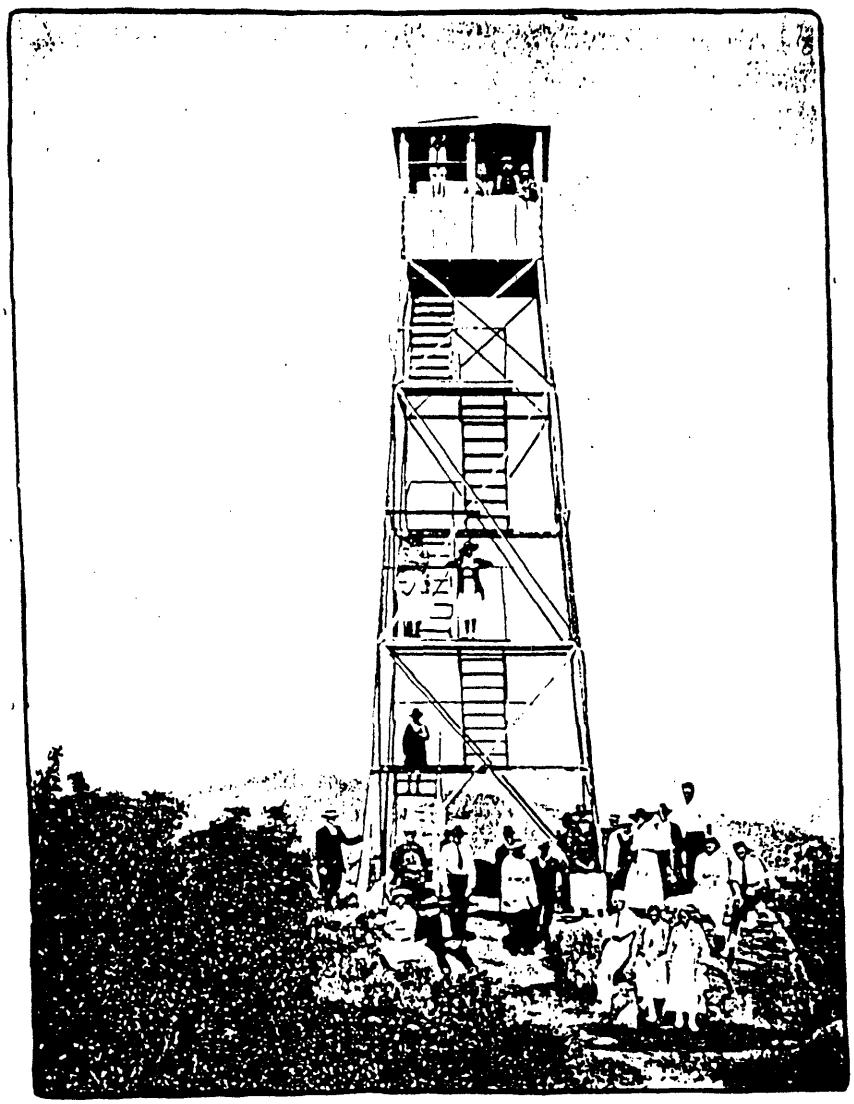


FIGURE 8. Unidentified fire observation tower in the NYS Forest Preserve, c 1918. The towers were popular destinations and the stations became centers of the first recreational facilities developed in the nation's oldest public forest preserve. (State of NY Conservation Commission, *Annual Report for the Year 1918*. Albany, 1919)

[58]NYS Conservation Commission, *Annual Report for the Year 1918* (Albany: J.B. Lyons, 1919), p. 119.

the towers. Education was also considered in making improvements to the operations of the stations. Observers were trained to inform the public about fire safety and demonstrate the process with their equipment. An Osborne Fire Finder, developed by the U.S. Forest Service, was first installed on a test basis at Poke-O-Moonshine Mountain in 1918. It was a customized panoramic map of the territory duplicating what was visible to the observer. Covered with a heavy plate of glass and equipped with a hole at the center to accommodate an alidade, it pinpointed fires more accurately than standard topographic maps. It also proved to be of interest to visitors "who are invariably anxious to learn the territory and inform themselves." [57]Similar maps were subsequently prepared for each station.[58] Housing for the observers was improved over time at many of the stations. The first "standard" observers' cabins, resembling the three-room arrangement remaining in use through the 1960s, were built at Blue, Crane, Rondaxe, and Pillsbury Mountains in 1927 to provide greater sanitation and comfort. The Commission reported:

> This new construction is essential to properly house employees. The prominence of observation stations warrants the adoption of the present standard type cabin. Eventually all cabins will be replaced with the new type of buildings....As observers are required to be on duty at all times during the fire season, comfortable quarters are as essential for the efficient operation of the stations as suitable towers.[59]

Built as a result of this effort were new cabins at: Loon Lake, Hurricane, Gore, Goodenow, and Spruce Mountains (1928), Tremper, Owls Head, Boreas, and Beaver Lake (1929), Black and Belleayre Mountains (1930), Balsam Lake and Red Hill (1931), and Prospect, Ampersand and Stillwater (1932) . Many of the observers from this period felt strongly committed to the service and domesticated the grounds around their cabins with vegetable cellars, apple trees and outbuildings to store wood and perishables.

D. Impacts of the CCC and World War II, 1933-1950

The system was subject to further growth and improvements made during the Great Depression of the 1930s largely resulting from efforts made by the Federal Civilian Conservation Corps (CCC) established in 1933. The CCC "camps" established statewide[60] were responsible for work projects,

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[57]NYS Conservation Commission, *Annual Report for the Year 1919* (Albany: J.B. Lyons, 1920), p. 138.

[58]NYS Conservation Commission, *Annual Report for the Year 1918* (Albany: J.B. Lyons, 1919), p. 119.

[59]NYS Conservation Commission, *Annual Report for the Year 1927* (Albany: J.B. Lyons, 1928), p. 188.

[60]These ranged in number from 32 in 1933 to 106 in 1935. The last camp was disbanded in 1942.

including fire fighting, reforestation, and constructing fire towers and fire truck trails. Under the CCC, access trails to many observation stations were built or improved with new culverts and retaining walls added, bridges rebuilt or replaced, and many cabins were replaced. The CCC built: new trails to the stations on Ampersand, Whiteface, St. Regis, Loon Lake, Hurricane, and Mt. Morris; new observers cabins on Lyon, Pharaoh, Belfry, Moosehead, West, Woodhull, Moose River, Hunter, Mt. Morris, Azure, Poke-O-Moonshine, DeBar, and Makonis Mountains; improvements to cabins on Snowy, Pillsbury, Hamilton, T-Lake, Wakely, Cathead, Hadley, Spruce, and No. 7 Mountains. The CCC also extended the height of the tower at Snowy Mountain by adding an additional stage at its base, and undertook most of the maintenance of telephone lines from 1933 to 1937. A new tower was added at Utsayantha Mountain in 1934 to replace an earlier wooden structure.

The intervention of World War II set in motion changes to the personnel and technology of the fire observation system. The Conservation Department dealt with funding cutbacks during the war years by temporarily closing all but the most critical stations and began seriously investigating less labor-intensive means of surveillance. The department had purchased its first airplane, a Fleet biplane, in 1931 to assist in fire monitoring. The first experiments with radio communications between the airplane and the State Office Building (now A. E. Smith State Office Building) in Albany were conducted in 1937, and in 1941 the Department announced that the radio phone had outgrown the experimental stage. Its deployment in fire spotting was used during the war to address labor shortages. During the post-war period, the department confronted the retirement of the first generation of observers and found it difficult to obtain the labor to implement an extensive plan to rehabilitate the fire towers, observers' cabins, telephone circuits, and trails approved by the Public Works Planning Commission. The immediate post war period also witnessed the gradual transition from telephone to radio communications between the towers and their bases, and increasing use of the aerial surveillance.

E. Decommissioning and Abandonment of the Fire Observation System, 1951-1991

The fire observation system never recovered from the retirement of the first generations of observers and labor shortages during and immediately after World War II. Although cabins at many stations in the 1950s and 1960s were improved as a measure to attract new observers, high rates of staff turnover and the cost of labor were factored in the state's decision to modify the fire protection system. In 1971, the Bureau of Forest Fire Control closed 61 of the 102 fire observation stations statewide and adopted an aerial fire surveillance program. Strategic stations in the forest preserve were periodically manned during seasons of extreme hazard, but most were left exposed to the elements without any maintenance. The subsequent reclassification of certain Forest Preserve lands as wilderness areas commenced by the Department of Environmental Conservation in the 1980s had an equally adverse effect, leading the agency responsible for their care to plan for the removal of a large number of the towers. Nonetheless, strong support opposing the demolition of the towers voiced by local residents detained the state from acting on its plans. In the process, the abandoned and deteriorating towers

became multi-faceted symbols, perceived as intrusions by wilderness advocates, attractive nuisances by the agency charged with their care, and beacons of property rights by local residents.

E. Adoption and Preservation of the Fire Observation Stations, 1992-2000

The movement to preserve the endangered towers was galvanized by an act of vandalism. During the weekend of April 18-19, 1992, the decommissioned tower on Pharaoh Mountain in Essex County, which had been scheduled for removal by DEC but delayed by local opposition, was intentionally toppled by a vandal and subsequently removed by helicopter by DEC. The crime was seen by some as an attack on the forest preserve itself.[61] The subsequent public outrage resulted in the creation of a grassroots effort joined by different interests and made up of private citizens and organizations and public agencies, including the Adirondack Mountain Club, the Catskill Center, Adirondack Architectural Heritage, extension agencies, county and town governments, friends groups, and sympathetic employees of DEC. A replicable strategy to preserve the towers through adoption by responsible friends groups has emerged from the effort. The state permits the friends group to stabilize and repair the towers to engineering specifications approved by DEC with the understanding that the group will maintain and operate the station for educational purposes on a seasonal basis. This model program has been implemented at the stations on Arab, Blue, Hadley, Kane and Poke-O-Moonshine in the Adirondacks, and on Balsam Mountain, Hunter, Tremper, and Red Hill in the Catskills. With the exception of Hunter, which is already listed on the National Register, all these stations are included in this multiple property submission.

Another recent trend has been the adaptive-use of the sites and towers as radio and cellular communications facilities. Several towers, including Black Mountain in Washington County, have been adapted by the NYS Police for signal towers. The attachment of equipment to the towers and at the base has a greater visual impact on the character of the site, but the work has included needed repairs that have corrected problems of neglect and extended the structure's service life.

[61] Ballou, Ellen. "Following Pharoah Mountain Vandalism State considers future of Adirondack fire towers." *Adirondack Daily Enterprise*, May 18, 1992, p. 1.

ASSOCIATED PROPERTY TYPES

1. Steel Towers
2. Observer's Cabins and Outbuildings
3. Road and Trail Features

Introduction

The fire observation stations of the Adirondack and Catskill Forest Preserves are rare surviving examples of an austere, functional property type. Designed to replace more frail and lower first generation towers, the steel observation towers provided the viewer with an unobstructed view. The view served as a way to ensure quick response to forest fires as well as an important terminus for recreational hikers. Hikers reaching the observation tower would often be met by the observer, who served as a guide, regional historian, folklorist and instructor in fire safety in the forest. The mountains equipped with stations became the first centers of recreational facilities, including camping grounds and open camps or lean-tos, developed by the state in the nation's oldest public forest preserve. Despite their closure, the towers continue to draw the attention and serve as a destination for avid and recreational hikers alike.

The fire observation stations included in this nomination retain their original steel towers, which possess complete integrity of design, materials, craftsmanship, setting, feeling, and association. The significance of many of the towers is further enhanced by the survival of original jeep trails, which were built to provide access for both fire protection and recreational needs, and/or the observer's cabins or cabin sites, outbuildings and vestiges of gardens maintained by the observers, and open camps built by the state for use by the public. The fire observation stations are important reminders of the twentieth century development and evolution of New York State's Forest Preserve, forest fire prevention system, the Forest Ranger Service, and the popularization of recreational hiking in the state.

1. Steel Towers

Description

Prior to World War I, state and federal agencies responsible for forest management began placing prefabricated steel towers on mountain summits for use in the early detection of forest fires. The earliest of these towers were adapted from steel windmill derricks. These were developed in the late

1880s and early 1890s for use in non-arid environment east of the Mississippi where wooden windmill towers had proven subject to weathering and rot. The earliest metal windmill towers, known as "cable towers," had wrought iron skeletons reinforced by steel cables under tension, but proved to be unable to resist the high winds of the Plains states. The next generation was built of steel as described in a recent history on the subject:

> Most of the steel towers had either three or four angle-steel legs, four being much more common, to which were added braces of various types. Some makers used braces of lighter angle steel, bar steel, heavy galvanized wire, or combinations thereof. The towers were designed either to be assembled while lying on the ground or to be built up from the ground one piece at a time.[1]

These types of towers were widely exhibited at national expositions and state and county fairs. Among the leaders of the industry between 1890 and World War I was the Aermotor Company of Chicago, a manufacturer of a self-oiling windmill, which was commonly used to pump water on farmsteads and along rail lines throughout the Midwest and West. Aermotor offered prefabricated three- and four-legged trussed towers for use with its equipment as early as 1893.[2]

The U.S. Forest Service began adapting Aermotor towers as "lookouts" around 1912, paving the way for their standardization and use by state foresters soon after. When used with a windmill, the tower legs typically converged at the top where they were connected by a fitting holding the main pivot bearing. Wood platforms mounted on the tower's outer perimeter about six feet below the apex, accessed by a ladder, were commonly used in servicing the windmills. In adapting the towers for use as lookouts, the Forest Service eliminated the upper stages and replaced them with a "cab," a small enclosed room measuring 7' square in plan. The cab was enclosed by sheet metal spandrels and glass windows, and massed under a pyramidal hip roof. The height of the cab was adjustable by adding standard dimension sections to the base. At the base, the angle iron legs were held by patented foot clamps anchored directly to the exposed ledge with countersunk rods or raised on concrete leveling

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[1]Baker, p. 94.

[2]The company exhibited its tower at the Chicago World's Columbian Exposition in 1893 and included towers in many of its catalogues and broadsides, including: Aermotor Company, Chicago, IL. *Galvanized after Completion Wheels and Towers* (c1894); *Steel Aermotors and Towers* (c1897); *Aermotor Trussed Tripod Tower* (c1900); *Thirteenth Annual Descriptive Catalogue* (1901); *Easy-to-Build-up Tower and Auto-Oiled Aermoter with Duplicate Gears Running in Oil* (1916); *Wide Spread Aermotor Towers* (c1933); all cited in Baker, pp. 476-477.

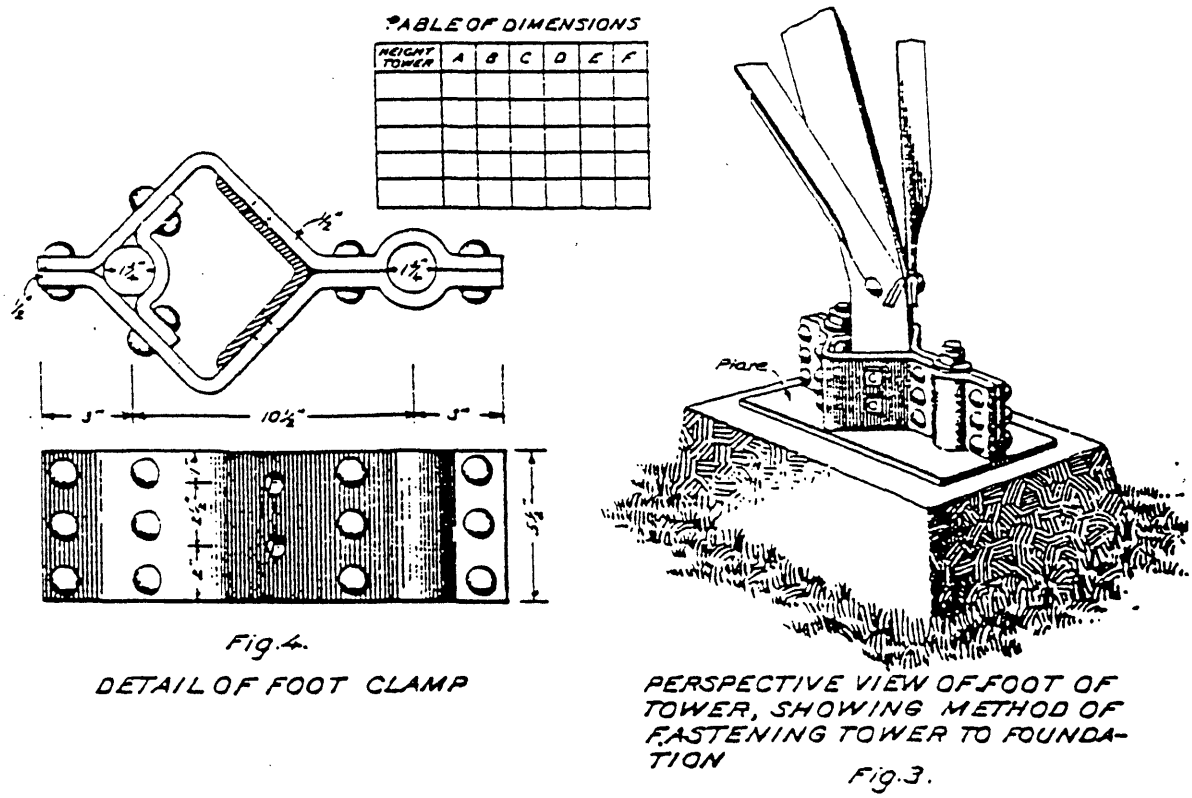

FIGURE 9. Standard details of Aermotor lookout towers. (W. B. Greeley, *Specifications and Plans for Lookout Towers.* Washington, DC: U.S.D.A. Forest Service, 1924)

piers. The towers themselves were constructed with standard components: angle legs, angle, bar and/or rod struts, and bar stiffeners and hangers (*Figure 9*).

Two Aermoter models were used in New York State. The only examples of the earlier type, described as a light duty model, were purchased in 1916 and erected 1916-1917. In the federal specification prepared in 1924, this model was similar to one referred to as "LX 24," but it is not known to have been so-called in New York State. These towers employed lighter gauge steel cross braces in conjunction with tension rods in a manner similar to the earliest cable windmill towers (*Figure 10*). They were intended to be used without stairs and accessed by exterior mounted ladders instead. Each of the units placed in service was subsequently retrofitted to accommodate a staircase in 1929.

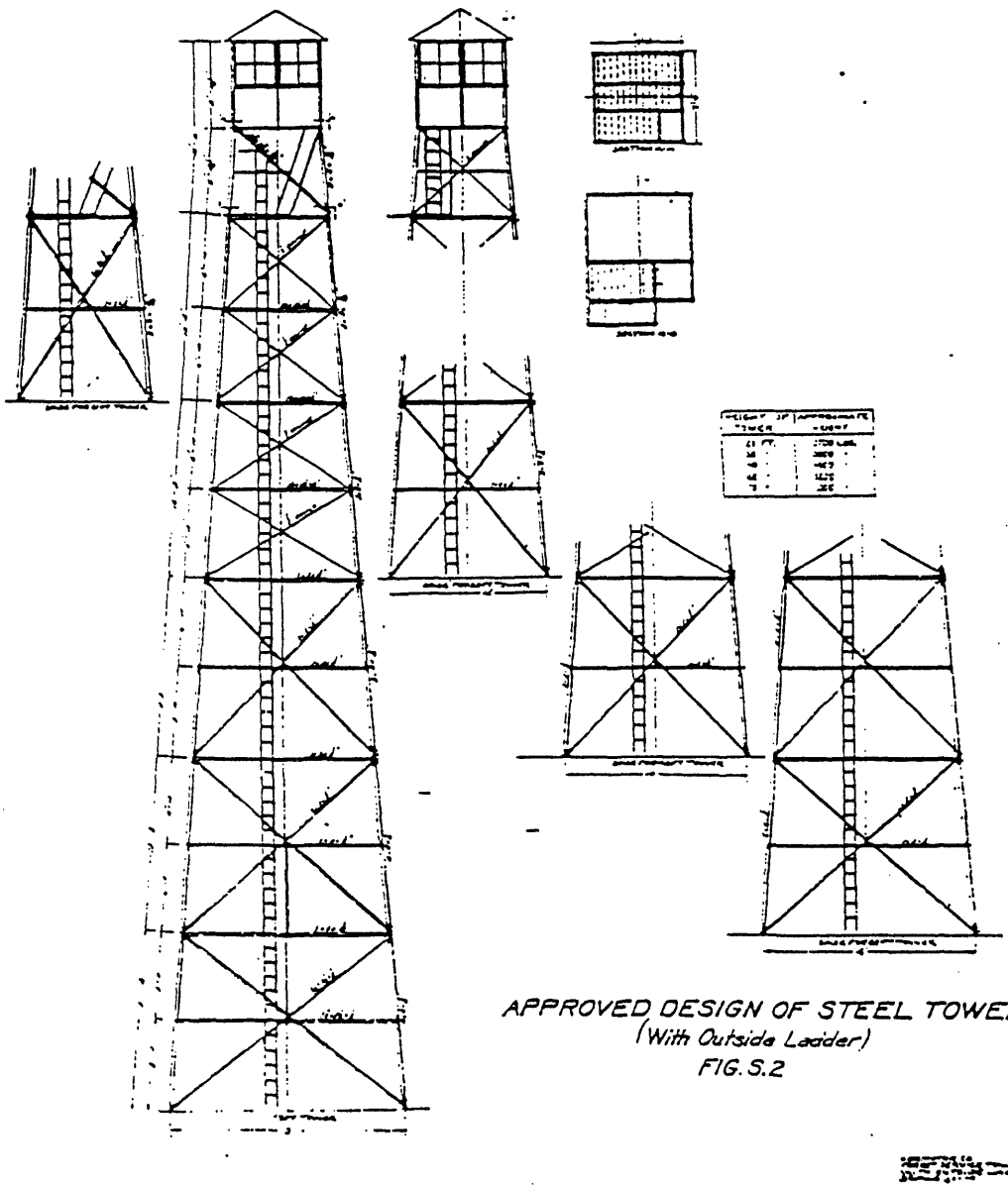

FIGURE 10. "Approved Design of Steel Tower (with Outside Ladder)." These "light duty" towers were the first group of new steel lookout towers used in New York. Braced with lighter gauge steel due to the use of an outside ladder in place of a staircase, they were easier to haul to the summits but proved unsuitable for use by the public. (W. B. Greeley, *Specifications and Plans for Lookout Towers.* Washington, DC: U.S.D.A. Forest Service, 1924)

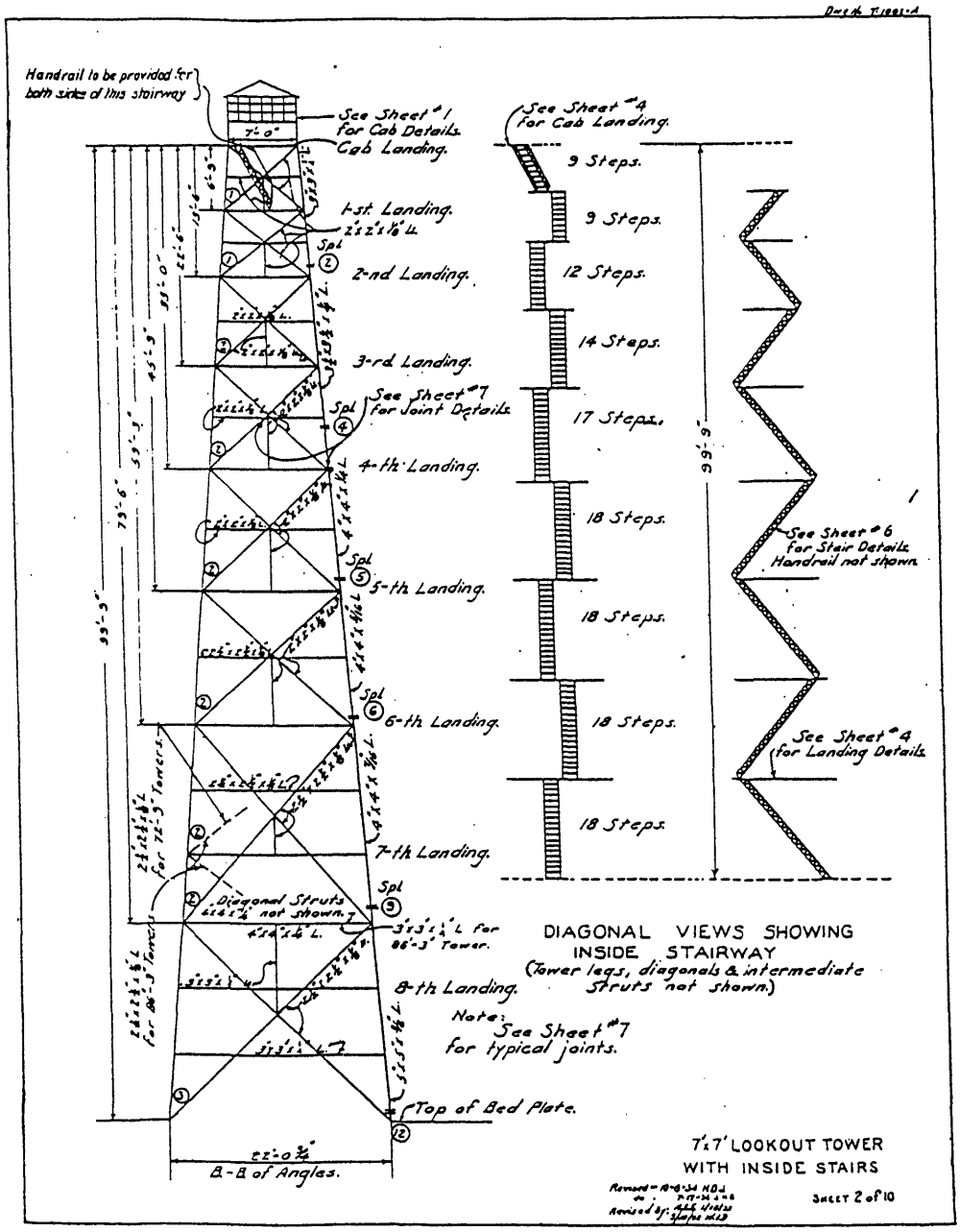

FIGURE 11. "7' x 7' Lookout Tower with Inside Stairs." This model, designed with heavier steel sections to carry the additional weight of an interior staircase with trussed stringers and wood treads was the standard used from 1917 to 1950 in New York state. The diagram incorporates revisions to 1934. (W. B. Greeley, *Specifications and Plans for Lookout Towers*. Washington, DC: U.S.D.A. Forest Service, 1924)

The more common "model LS-40," which were referred to in the federal specification as "LX 25" were used by the state from 1917 to 1950 (*Figure 11*). These were constructed with heavier members to accommodate the added weight of steel staircases with wood treads. Stairs were constructed in a scissors plan, with stringers fabricated from trussed bar stock and angle iron railings. The steel used throughout was of heavier gauge. The cost of erecting these was considerably greater than the lighter model due to the added materials and difficulty of shipping, but they were better able to withstand use by the public.

Significance

Each of the ten stations included in this multiple property submission include a steel tower. The tower on Hadley Mountain is a lightweight model originally built with an exterior ladder and later retrofitted with a staircase. The remaining nine towers are Aermotor LS-40 models built of heavier steel members with integral staircases. Collectively they encompass the years 1916 to 1925 and include one of the first generation of steel towers used in the forest preserve. The steel towers of the forest preserve are significant in two contexts: (1) they are closely associated with the conservation and development and management of recreational use in the first public forest preserve in the United States; and (2) they are part of the evolution of 19th and early 20th century mountaintop observation towers used for scientific exploration, fire protection, and recreation in the forested mountain ranges of New York State. There are other extant examples of these types of steel towers at fire observation stations, which would qualify for registration but were not included in this nomination because of limited funding. It is expected that other resources will be listed in the future.

Registration Requirements

In general, to qualify for registration, steel towers should have been built before 1950. In the case of the lightweight models purchased in 1916, the original truss design and construction, and steel staircase stringers as modified should be intact. In the case of the heavier models purchased in 1917 and later, the original truss design and construction, with integral staircase, should be intact. The towers were intended as durable, utilitarian structures but not as permanent ones. Non-original replacement steel members are common due to the harsh exposure on the summits subject the material to abrasion of galvanized finishes and metal fatigue over time. Given the nature of the construction, structural repairs, reinforcement, enlargement or relocation within bounds since their original construction may be acceptable so long as the design of the original truss structure remains intact. Relocation within the confines of its original summit or extension in height by the addition of one or more lower stages in the manner of the original construction may be acceptable when done during the tower's active service life or as an alternative to removing trees to maintain viewsheds from the cab. Replacement steel members, wood treads and flooring in the cab, glazing in the cab, roofing, and additions of raised stair railings which do not compromise the structural integrity, may also be acceptable. The towers should

be capable of functioning, but need not be in use. To qualify under National Register Criterion A, a tower should be associated with the development of conservation and recreation in the Forest Preserve. Under Criterion C, in addition to retaining substantial physical integrity, a tower should retain its integrity of setting. A tower needs not be in its exact original location but should remain on its original summit in a mountaintop setting similar to its original location.

2. Observer's Cabins and Outbuildings

Description

The earliest observer cabins were derived from the vernacular hunting and logging shanties used in the nineteenth and early twentieth century. These were built with materials found on their sites, such as the primitive hut at Ampersand Mountain (*Figure 12*). Some were log cabins, but none remain. Many of these were replaced with more substantial structures by the 1920s (*Figure 13*).

THE OBSERVER'S SHELTER ON THE TOP OF AMPERSAND MOUNTAIN WAS VISITED IN ONE SUMMER BY SIX HUNDRED CLIMBERS.

FIGURE 12. Primitive first generation observer's shelter on Ampersand Mountain c1919, "viewed in one summer by six hundred climbers." (NYS Conservation Commission, *Annual Report for the Year 1919*, Albany, 1920).

FIGURE 13. Early observer's cabin at Poke-o-Moonshine Mountain,c1923. (Adirondack Architectural Heritage, Keeseville, NY).

Beginning in the 1920s, the Conservation Commission advanced a design for a standard cabin that appropriated outwardly rustic and simple characteristics of the shanty's form and plan while utilizing standard lumber to provide greater comfort and improve sanitary conditions. These cabins were one-story in height, rectangular in plan and massed under a gable roof with an integral porch at the front end. They were typically equipped with plank doors and double-hung windows equipped with one-over-one or multi-pane sash. Internally they were divided into three rooms, a large front room for sitting and back rooms containing a galley kitchen and bedroom finished with plain wood floors and paneled walls trimmed with simple fascia profiles. The interiors were heated by a woodstove in the front room. The exteriors were typically clad in milled novelty "drop" siding imitating logs or rough-sawn wavey-edge slab ("brainstorm") sidings. Roofs were originally finished in wood shingles. This standard design was subject to little change from the 1920's to the 1960s when the last generation of cabins were built, with the exception of cabins built during the CCC period which had fieldstone fireplaces (*Figure 15*). The cabins often became the focal elements of a collection of vegetable gardens and outbuildings including root cellars and other dependent structures necessary to support the observer during the summer months (*Figure 14*).

FIGURE 14. Early standardized observer's cabin, outbuildings and vegetable garden at Hadley Mountain as viewed from the lookout tower in 1934. (*The* [Albany] *Knickerbocker Press*, July 24, 1934.

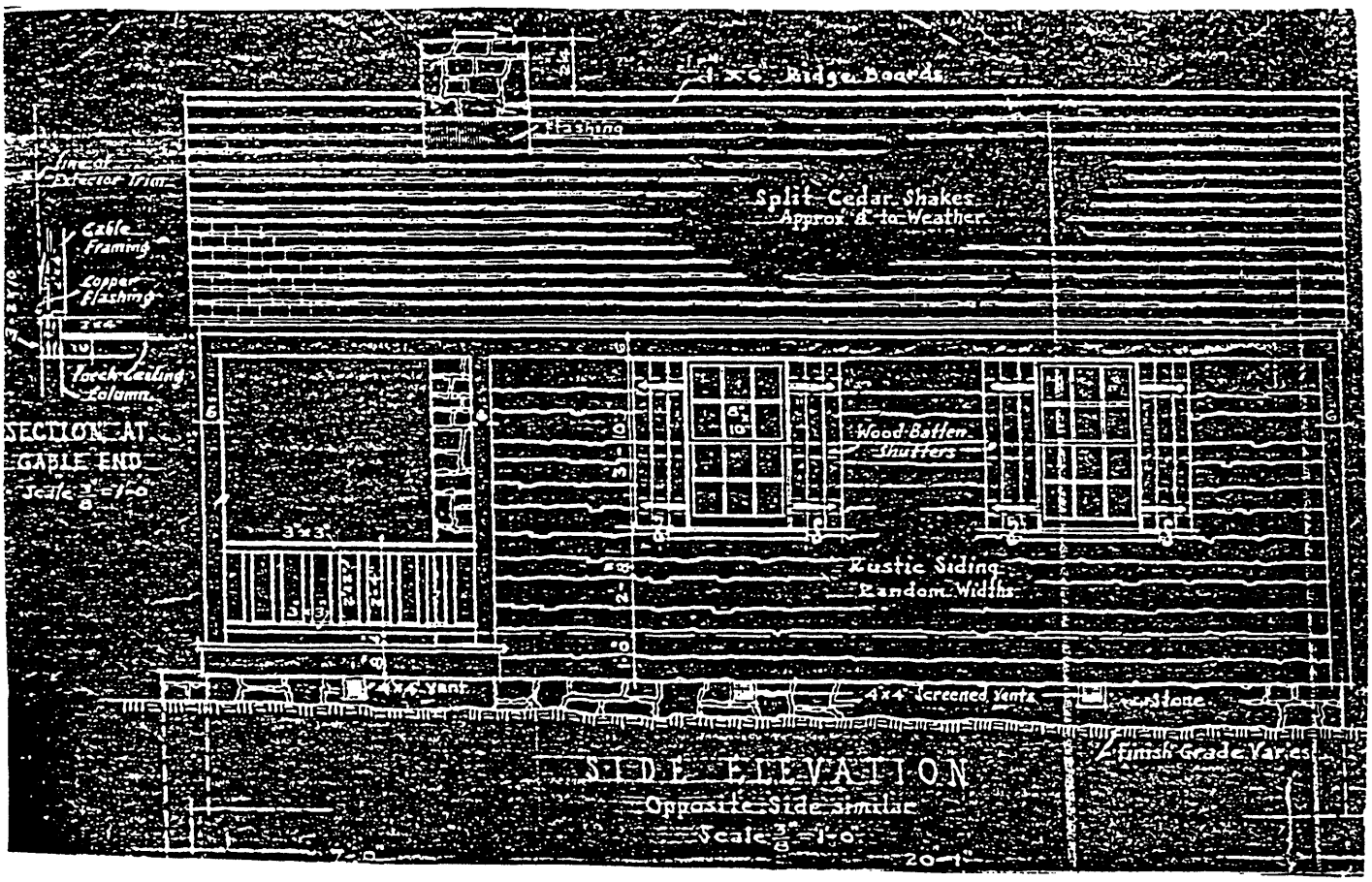

FIGURE 15. Standard details from Fire Control Bureau, NYS Conservation Department, "Observer's Cabin, Revision of 1941." The cabin design was used during the CCC period. (NYSDEC, Bureau of Public Lands)

Significance

Five of the ten stations included in this multiple property submission include an observer's cabin. Of these, three contribute to the significance of the station. In addition, the ruins of cabins at two stations are also considered to be a contributing features due to their age (Blue) or its likely association with the Civilian Conservation Corps (Poke-O-Moonshine). Collectively, the cabins and sites encompass the years 1917 to c1950. The cabins are significant in two contexts: (1) they are associated with the conservation and development and management of recreational use in the first public forest preserve in the United States; and (2) they were integral to the operation of the 20th century mountaintop observation towers used for fire protection, and recreation in the forested mountain ranges of New York State. There are other extant examples of cabins at other fire observation sites, which would qualify for registration but were not included in this nomination because of limited funding. It is expected that other resources will be listed in the future.

Registration Requirements

In general, to qualify for registration, cabins and cabin remains should have been built before 1950. Under National Register Criterion A, a cabin should be associated with the development of the station where it is placed. Under National Register Criterion C a cabin should be consistent with the rustic character of standard cabins built by the Conservation Commission and its successors and retain its integrity of setting. Qualifying cabins should retain the outward form, original plan element and have outer walls finished with wood. Alterations to original roof finishes, chimneys, porch footings, and window and door treatments may be acceptable if made during the building's period of active service. The relocation of a cabin from its original site may also be acceptable if it is still located in close proximity to the tower and continues to contribute to the overall understanding of the station and its historic context. Given the severe climate extremes to which these buildings are subjected, in-kind replacement of original finishes shall not be discouraged in order to preserve the building as a whole.

3. Trail and Road Features

Description

The fire observation stations were approached by rugged primitive wagon or jeep roads where possible and foot trails where not. Jeep roads were kept narrow, and often passed over exposed ledge. Many have related features such as culverts, swales, support and retaining walls.

Significance

Access to nine of the ten stations included in this Multiple Property Listing follow most of the original trails and roads to the summit. Some were improved by the CCC in the 1930s. Trails and roads are significant in two contexts: (1) they are associated with development of conservation and recreational use in the first public Forest Preserve in the United States; and (2) they were closely associated with the evolution of mountaintop observation towers.

Registration Requirements

In general, to qualify for registration, trails and roads leading to fire observation stations should have originated before 1950 and should continue to provide public access to the summit, be capable of functioning, but need not be in use. Under National Register Criterion A, a trail or road should be associated with the development of the station where it is placed. Under National Register Criterion C a trail or road should retain its integrity of setting and physical appearance which reflects its historic period of significance.

GEOGRAPHICAL DATA

The Fire Observation Stations of the New York State Forest Preserve Multiple Property Submission includes ten stations, which are located on public lands within the New York State Forest Preserve.

The following list summarizes the location of each of the nominated stations included in this multiple property submission.

Name	Township	County	Preserve
Arab Mountain	Piercefield	St. Lawrence	Adirondack
Azure Mountain	Waverly	Franklin	Adirondack
Balsam Lake Mountain	Hardenbergh	Ulster	Catskill
Blue Mountain	Indian Lake	Hamilton	Adirondack
Hadley Mountain	Hadley	Saratoga	Adirondack
Kane Mountain	Caroga	Fulton	Adirondack
Poke-O-Moonshine Mountain	Chesterfield	Essex	Adirondack
Red Hill	Denning	Ulster	Catskill
Snowy Mountain	Indian Lake	Hamilton	Adirondack
Mount Tremper	Shandaken	Ulster	Catskill

SUMMARY OF IDENTIFICATION AND EVALUATION METHODS

Following the closure of most stations in the 1970s, interest in the fire observation stations was rekindled during the centennial of the Forest Preserve in 1985. A list of 121 towers known to have been built statewide, within and outside the forest preserve, was prepared and published as Appendix B, "Past and Present Fire Towers in New York State" in Louis C. Curth, *The Forest Rangers: A History of the New York State Ranger Force* (Albany: NYSDEC, 1985). The Curth list included the current DEC region, former Fire District number, name of the tower, county, the date the station was established, the date a steel tower was established, and identified present status as active, inactive, removed, transferred, moved, sold or private.

In the mid-1980s, NYSDEC prepared land use master plans on state lands in the Adirondacks and Catskills. The plan reclassified lands on the higher summits and placed many of the towers in violation of the plan's wilderness requirements. In 1989-90, NYSDEC notified NYSOPRHP to request approval of its plans to remove the tower on Pharaoh Mountain in compliance with Section 14.09 review. In early 1990, NYSOPRHP's reply stated the need for NYSDEC to prepare a contextual study to document the types of towers and their dates of construction, and to clarify the agency's present and future plans for the structures. NYSDEC responded by conducting an internal inventory of the towers, first using its own form called "Forest Fire Detection Station Questionnaire," and subsequently completing NYSORHP inventory forms. These were prepared by forest rangers and included towers and observer's cabins. NYSDEC requested that mitigation documentation be limited due to the identical nature of the tower design, but no HABS/HAER documentation was found in the course of research. The delay necessitated NYSDEC to make repairs to Pharaoh tower as its future was held in abeyance.

Meanwhile, local opposition to and support of the plans for removing the towers was growing. Frederick Aber, the Hamilton County Historian, compiled a history of fire observation towers and obtained a resolution from the County Board of Supervisors in support of preservation by listing on the National Register of Historic Places, but the listing was not completed.[1] Wilderness advocates, on the other hand, expressed dismay over the stabilization of the tower on Pharaoh. In 1992, as negotiations between NYSDEC, local officials and the Governor's office were underway, the tower was vandalized and toppled, requiring NYSDEC to remove the structure.

The destruction of the tower on Pharaoh galvanized support for preservation of the remaining towers. In the Adirondacks, the movement to preserve the towers was a joint effort of Hamilton County

[1] Frederick Aber. "Fire-Control Observation Towers in Hamilton County, State of New York," typescript, 1984, 5 pp. [NYSOPRHP].

Cooperative Extension, the Adirondack Mountain Club, Adirondack Architectural Heritage, local governments, and concerned citizens. In the Catskills, the Catskill Center for Conservation and Development assumed the lead. In both regions, sympathetic employees of NYSDEC aided the efforts. Resulting from discussions at meetings and public hearings was the development of a replicable model for adoption of the towers by local friends groups responsible for stabilization, repair and seasonal operation for "recreational, educational and informative purposes." Repair of the tower on Blue Mountain was a pilot project, followed by the establishment of similar friends groups at Arab, Hadley, Kane, Poke-O-Moonshine, and Snowy in the Adirondacks, and Hunter, Red Hill, Balsam Lake, Overlook and Tremper in the Catskills. Each of these towers has been listed in the National Historic Lookout Register sponsored by American Resources Group, Vienna, VA.

The preparation of this nomination was supported with public funding provided by the Architecture, Planning and Design program of the New York State Council on the Arts administered by the Preservation League of New York State. The grant was sponsored by Adirondack Architectural Heritage. Funding permitted advancing nominations on ten stations only. Stations adopted by active friends groups were given primary consideration. Hunter was listed individually in 1997, and Overlook was not included on the basis of its age. Azure, the tenth resource included, was selected from a short list of needy sites. Other eligible stations are expected to be added to this multiple property listing in the future.

Research materials consulted in the preparation of this nomination were located in several collections including: the records of the Bureaus of Public Lands and Real Property, NYS Department of Environmental Conservation Headquarters, 50 Wolf Road, Colonie, NY; files of the NYS DEC Region 3 Offices, 21 South Putt Corners Road, New Paltz, NY; the files of the Adirondack Mountain Club, 814 Goggins Road, Lake George, NY; the library of the Adirondack Museum, Blue Mountain Lake, NY; and the NYS Archives, Albany, NY. The assistance of the following individuals was indispensable in preparing this nomination: Richard Andress, NYS Archives; Ted Comstock, Adirondack historian, Old Forge, NY; Steven Engelhart, Executive Director, Adirondack Architectural Heritage, Keeseville, NY; John Keating, Bureau of Real Property, NYSDEC, Colonie, NY; Jack Freeman, Adirondack Mountain Club; NYSDEC Forest Ranger Steven Guenther, Hadley, NY; Jerold Pepper, Librarian, Adirondack Museum; George Profous, Senior Forester, NYSDEC Region 3; Charles Vandrei, Historic Preservation Officer, Bureau of Public Lands, NYSDEC, Colonie, NY; Capt. Raymond Wood, Regional Forest Ranger, NYSDEC Region 3.

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