

Three Wilderness Fire Towers



Flat Stone CCC Style Bridge Along Trail to Norway Lookout

Three towers, Norway, Sioux River and Angleworm, graced lookouts in the western part of the present Boundary Waters Canoe Area Wilderness near Ely, Minnesota.

Rangers hewed a trail in the wilderness around 1910ⁱ to provide access and a telephone service to Ranger Stations stretching Northwest of Ely. The trail eventually became a 45 mile roller coaster road of gravel and rock in the 1920's. Gradually highway engineers straightened and paved portions. However, much of the Echo Trail retains its twisty, unplanned look.

I drove the Echo Trail with my brother to visit these three wilderness tower lookouts during the summer of 2009.

After a 7 mile drive south down a minimally maintained forest road from the Echo Trail, I hiked 1 mileⁱⁱ into the wilderness to the site of the former Norway tower. The trail has the characteristics of the Civilian Conservation Corps (CCC) built trails: rock curbing which strengthens the tread and neat flat rock bridges over low spots.

Before my hikes, I set waypoints for the tower locations on my GPSr unit. The forest has reclaimed the spurs to the Norway and Sioux River tower sites. Finding the towers requires GPS guided bushwhacking. The waypoint at Norway guided me over a tangle of windfalls, hazel and brambles. However, when leaving the site, I noticed orange plastic tape which marked the track of the former access trail. Perhaps the Forest Service anticipates clearing the old trail.

Most of the old tower remains on site for these wilderness lookouts.



Bolts and Steel Anchored this Telephone Pole on the Bare Rock at Norway

These three wilderness towers keep many secrets: age for exampleⁱⁱⁱ. My research to date tells me that Sioux River is the oldest. The forest service used this lookout and had some structure built before the CCC era (1933-1942).

The Forest Service instructed new Rangers, or Guards as they were called, to use high points to scan for smoke. In some cases they climbed a tall pine or built wooden structures to get a better view. A strong push for towers on lookouts with telephone communication began in 1910-11. Before then a fire report to Ely might require days or a week or more depending how quickly a ranger could hike or paddle back to headquarters.



Early Structure on Fernberg Lookout near Ely Minnesota. Picture from Minnesota Foresters Report.

Ely, Minnesota and the Western United States experienced drought in 1908, 1909 and 1910. Just 1 month into the summer of 1910, Minnesota already reported 189 fires^{iv}. Many burned around Ely and threatened the town. A new forest supervisor in Ely, Joe Fitzwater, announced an aggressive goal, "As fast as appropriations allow, trails together with telephone lines, will be built through the more inaccessible districts."^v

To demonstrate his resolve, in early spring United States Forest Service (USFS) Supervisor Fitzwater dispatched a crew of 6 up the Kawashiwi River east of Ely. On a high rock outcropping at a bend in the river they constructed, a 50 foot lookout tower by attaching poles and a platform to a large pine tree. The Rangers cut a trail with telephone to connect with

Ely Headquarters. Ole Fernlund and John Handberg, two crew members, contributed their names to the title of the new tower: Fernberg.

During that same time another crew built a station on the Echo River some 50 miles northwest of Ely. By 1920 the Forest Service had built 5 Ranger Stations along the Echo Trail.^{vi}

The towers proved successful. In 1920 the Minnesota Forest Service (MFS) reported they had placed the final equipment in the Jasper Peak tower. Already the tower had more than earned back the initial investment for its construction through lessening the cost of firefighting.^{vii}

'As funds permitted' ... I can imagine another crew paddling the Little Indian Sioux River and choosing a tall pine on the high ridge above the Devil's Cascade some 8 miles off the Echo Trail. A December 1920 issue of the outdoor magazine,

Outing, notes the existence of the Sioux River Tower in an article titled “A Canoe Fire Department”^{viii}.

In 1910 the Forest Service required: 'every patrolman and ranger, in his early trips through the territory assigned to him' should search 'for points where lookout stations would be of value.'^{ix}

Eventually among the many possible lookouts, the forest services selected those which fit the pattern needed to see smoke and provide triangulation to locate fires. In some cases, Sioux River for example, the lookout guard would hike the telephone line trail many miles or, perhaps, paddle and portage a canoe that far.

The Minnesota Forester reported: “ in 1911 the money spent build: 92 wooden towers, 13 steel towers and 8 cabins for a total cost of \$3587.52.”^x

I hiked 6 miles^{xi} into the Sioux River Lookout. Ambitious tourists use this trail to visit the Devil's Cascade along the Little Indian Sioux River. Wilderness hikers use it as the first leg of the 35 mile Sioux Hustler Trail. The huge bald rock outcropping is the most spectacular of the three towers. The lookout guard occupied a cabin about 1 mile away perched above the canyon of the Devil's Cascade.^{xii}



Sioux River Lookout cabin with Guards, Aug 1932
Courtesy of the Forest History Society

The USFS and MSF scattered small ranger cabins throughout forest. District rangers lived permanently in some of these cabins. Other cabins served as temporary headquarters for rangers working in the area and as caches for firefighting supplies. If necessary, a fire fighting operation might headquarter in such a cabin. Also the forest services placed cylindrical steel chests on prominent rocks throughout the forest filled with fire fighting tools.



Remnant of Telephone Line to Sioux River Tower

A network of telephone lines strung along forest trails connected these remote

wilderness cabins and fire lookouts to each other and to headquarters.

How would you build such a telephone line?^{xiii} First clear a trail. Next string a single strand of No. 9 GI (galvanized iron) wire through an 8 mile series of split ring insulators attached to trees. The split ring insulators allow some play in the line. This slack will often prevent a fallen tree from snapping the line. In areas void of trees due to past fires, barren rock other reasons cut a tree, drag it in a erect it, an 'artificial' telephone pole, supported by a cairn of rock. Make sure to mount the wire high enough to avoid entangling the antlers of a bull moose, but low enough that the ranger who must regularly patrol the line can reach to repair it. Also install regular lightening grounders minimize damage from lightening strikes during storms.



Angleworm Lookout Cabin, Aug 1928
Courtesy of the Forest History Society

Angleworm tower and its tiny cabin formed part of the "Canoe Fire Department". A 2 ½ mile hike^{xiv} off the Echo Trail brought me to the site of the former tower.

By the early 1920 a spur of the Swallow Hopkins logging railroad reached the eastern shore of Angleworm which could provide easy access to the site of the Angleworm Tower on the western shore. The

USFS used a small gasoline powered speeder to facilitate access to the tower until 1937 when the logging company pulled the rails.^{xv}

How much longer the USFS used this right-of-way or when they built the present 2 ½ mile trail from the Echo Trail to the tower is unclear. (However, the current trail does not show the markings of CCC work.)

I found pieces of the entire tower structure deposited a few hundred yards in the brush, over the brow of the hill. It appears that once toppled (with explosives), the crew disassembled the structure into pieces a man could carry.

We have the Canoe Fire Department in place. On the hike to Sioux River lookout I paused and imagined how the men and women in the USFS and MFS made this system work. So, as Donald Hough in his article The Canoe Fire Department suggests let's "have a fire, just to try the thing out."



Pieces of the Angleworm Tower

A party of canoeists travels one of the many routes. They cook coffee and breakfast over a small camp fire one morning. The fire seems out especially after casting the dregs of the coffee pot over it. By day's end our party is many miles away and all seems well at their morning campsite. However a few hot embers remain in the thin duff. A wind freshens the second evening after their departure. The embers glow, a bit of flame erupts, spreads; the woods begin to burn. With nightfall the fire abates a little, but still slowly eats into the forest.



Cab of Sioux River Tower

On the third morning our lookout guard at Sioux River walks the mile from his cabin at Devil's Cascade to the tower. He climbs the tower, scans the horizon but sees nothing. A stronger wind starts late morning. During a later sweep of the horizon with his glasses he sees smoke rising from trees on the mainland of Lac La Croix, a lake many miles to the north. He sights across his map and notes the compass reading. Climbing down the tower he opens a cast iron box, retrieves the telephone^{xvi} and rings Ely to report

smoke at the compass reading of his sighting

Next, on the large map at headquarters in Ely, the supervisor takes a string attached to the Sioux River tower location on the map. Surrounding that spot, and the places of other tower locations, is a large circle inscribed with degrees of a compass. He stretches the string out from Sioux River to the compass degree reported by the lookout and fastens the end on the map with a thumbtack. He then calls other towers that might see the smoke and asks them for readings as soon as they see smoke. Being at greater distances other towers might not see smoke until the fire has grown. Finally he gets more readings, tacks more strings to the map. The intersection of the strings pinpoints the location of the fire.

Now he calls the nearest district ranger give him the information and says a fire crew of 20 men will leave as soon as he recruits them. Men in town learn the forest supervisor needs a crew and enlist. From the warehouse, he pulls canoes from storage and gathers the packsacks and boxes with supplies. The Minnesota Forest Service supervisor in Tower, a town close to Ely, often sent along a crate of homing pigeons with the crews^{xvii}. The fire crews could then send emergency messages back to headquarters.

After enough men assemble, they mount a truck with their supplies for a short to ride to the water route which they will follow to the fire. (These early crews used

water travel. In those days road travel for any distance around Ely followed tote roads and required the extensive use of a shovel and axe.)^{xviii} These fire fighters must paddle through lakes, channels, around rapids, walk long and short portages. They may arrive at the fire site that evening or the next day to begin fighting the fire.

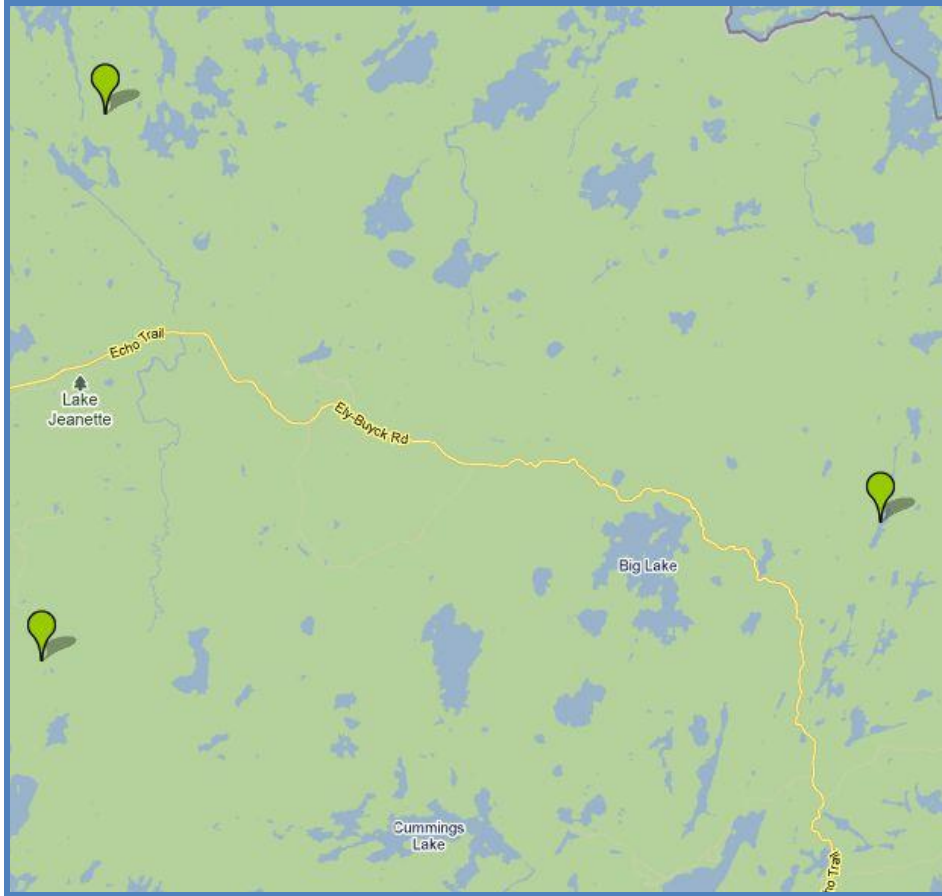
The Sioux Tower guard and those of other towers continue monitoring the smoke. When the smoke continues for several days, the supervisor will dispatch more supplies by canoe. When smoke increases indicating an intensifying fire, or the smoke plume moves from a traveling fire, the supervisor recruits, outfitts and sends more crews to the fire.

Extensive use of airplanes in spotting fires would not begin until the late 1940s - after the Second World War. When planes began to replace towers, trails and canoes, our three towers retired. Wilderness legislation in the 1964 required removal of man-made structures throughout the wilderness. Crews toppled the towers from their heights.



Burnt piece of steel from Sioux River tower. Result of explosive?

Sometime in the late 60's' or 70's the USFS brought down the Sioux River tower and her two sisters. They placed them out of sight to rest in the wilderness forest the towers guarded for half a century.



Towers: North: Sioux River (N48° 12' 29.5" W092° 14' 33.5"),
 West: Norway (N48° 02' 36.4" W092° 16' 18.6"),
 East: Anglemorm (N48° 05' 07.4" W091° 53' 32.3").

The dark line is the US-Canadian Border

Straight-line distance from Norway to Anglemorm approximately 16 miles

ⁱ I have used a number of online resources. This printed presentation does not lend itself to including long, complicated internet addresses. Please find a web presentation of this article which will allow you to easily review the [articles](#) I used. Unless otherwise noted, photographs by Ken Jackson.

ⁱⁱ [Hike to Norway Tower Lookout.](#)

ⁱⁱⁱ I have uncovered these dates from my research to date:

Sioux River: referenced in 1921 issue of Outing magazine, Look displayed on 1920 map of Superior National Forest (SNF), photograph of lookout cabin in 1932. **Norway:** Not shown on 1920 SNF map although a trail is shown which roughly follows the current trail from the Nigh Ranger Station to Little Trout Lake, Survey monument in 1936 and described as a 100 ft steel lookout tower. **Anglemorm** Not shown on 1920 SNF map, Photograph of lookout keepers cabin dated 1928, Described in 1934 survey data as 90 feet high constructed of steel, The Anglemorm trail is described in various 1935 survey reports.

^{iv} Forester, Jeff, The Forest for the Trees: How Humans Shaped the North Woods, Minnesota Historical Society Press, 2004, pg 128.

^v Ibid., pg 130.

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- ^{vi} See a [1920 map](#) of the Superior National Forest.
- ^{vii} Cox, Wm. T., State Forester and Surveyor of Logs and Lumber, Report Minnesota Forest Service: Forest Protection and Conservation in Minnesota, 1920, pg 28
- ^{viii} Outing December 1921, Vol 79 no 3, "[The Canoe Fire Department](#)" pg 109
- ^{ix} Minnesota Forestry Board: First Annual Report of the State Forester, Dec. 31, 1911, pg 47
- ^x Ibid., pg 49.
- ^{xi} [Hike to Sioux River Tower Lookout](#)
- ^{xii} Rangers are Tesaker & H. Matthews & Lookout Guard Tikkala. La Croix District Forest Service, Photograph courtesy of U.S. Department of Agriculture, Eastern Region photograph courtesy of the [Forest History Society](#), Durham, N.C.
- ^{xiii} Hansen, Mary Alice, Sawbill: History and Tales, Sawbill Press, Tofte, MN, 2005, pg. 43-44.
- ^{xiv} [Hike to Angleworm Tower Lookout](#)
- ^{xv} Heinselman, Miron, The Boundary Waters Wilderness Ecosystem, University of Minnesota Press, Minneapolis, 1996, p. 104
- ^{xvi} An interesting [article](#) on telephones for lookout towers.
- ^{xvii} Outing December 1921, Vol. 79 no. 3, "[The Canoe Fire Department](#)" pg 108
- On line [map of Minnesota Fire Tower sites](#)
- ^{xviii} Ahlgren, Clifford & Isabel, Lob Trees in the Wilderness: The Human and Natural History of the Boundary Waters, University of Minnesota Press, Minneapolis, 1984, p 94.
- I want to thank my brother, Steve, who accompanied me on these tower excursions.