

# Safety on the Trail

The Appalachian Trail (AT) stretches 2,178 miles from Georgia to Maine, crossing twelve other states in between. Founded in 1937, approximately 10,000 people have completed the trek. About 200-300 hikers complete it per year.

The 161 miles of the AT that fall within the borders of New Hampshire are infamously some of the most treacherous.

This includes White Mountain National Forest, home to Mt. Washington which is notorious for having the worst weather in the world.

The state of New Hampshire spends \$260,000 annually on search and rescue operations, carried out by New Hampshire Fish and Game, the United States Forest Service, and other private and volunteer run groups. 135 people have lost their lives since 1849 on or around Mt. Washington alone.

Sources: [www.appalachiantrail.org](http://www.appalachiantrail.org), [www.hikesafe.com](http://www.hikesafe.com), [www.mountwashington.org](http://www.mountwashington.org), <http://www.mountainrescueservice.org/>

# Search and Rescue Accessibility to the Appalachian Trail in New Hampshire

## Purpose

The purpose of this study was to assess the accessibility of shelters along the Appalachian Trail in the state of New Hampshire.

## Results

Table 1: Shelters within the "golden hour."

Shelter Name	Rescue Time (Hours:Minutes)
Velvet Rocks Shelter	0:39
Crawford Notch Hostel	0:41
Jeffers Brook Shelter	0:42
Moose Mountain Shelter	0:54
Trapper John Shelter	0:57

Table 2: Shelters outside the "golden hour."

Shelter Name	Rescue Time (Hours:Minutes)
Ore Hill Shelter	1:14
Lonesome Lake Shelter	1:41
Beaver Brook Shelter	1:47
Rattle River Shelter	1:55
Greenleaf Hut	2:07
Hexacuba Shelter	2:28
Hermit Lake Shelter (1 of 2)	2:44
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Mizpah Spring Hut	3:02
Gray Knob	3:06
Ethan Pond Campsite Shelter	3:12
Crag Camp	3:12
Lake of the Clouds Hut	3:22
Kinsman Pond Campsite Shelter	3:29
Zealand Falls Hut	3:29
The Perch Shelter	3:35
Madison Spring Hut	3:39
Carter Notch Hut	3:40
Smarts Mountain Cabin	3:49
Imp Campsite Shelter	4:01
Eliza Brook Campsite Shelter	4:44
Garfield Ridge Campsite Shelter	4:58
Galehead Hut	5:07
Gentian Pond Campsite Shelter	5:14
Guyot Campsite Shelter	7:59

## Methods

The rescue time for each shelter was calculated by Network Analysis, adding the time it would take medical resources to get to the shelter, to the time it would take to transport a patient from the shelter to the nearest medical facility. The "golden hour" refers to the ability to get a patient to emergency care within an hour, increasing survival rates. The networks used were New Hampshire public roads, United States Forest Service (USFS) roads, and USFS trails. Each network was assigned a speed (mph) according to surface type and size. Environmental costs such as slope and water crossings were not taken into account.

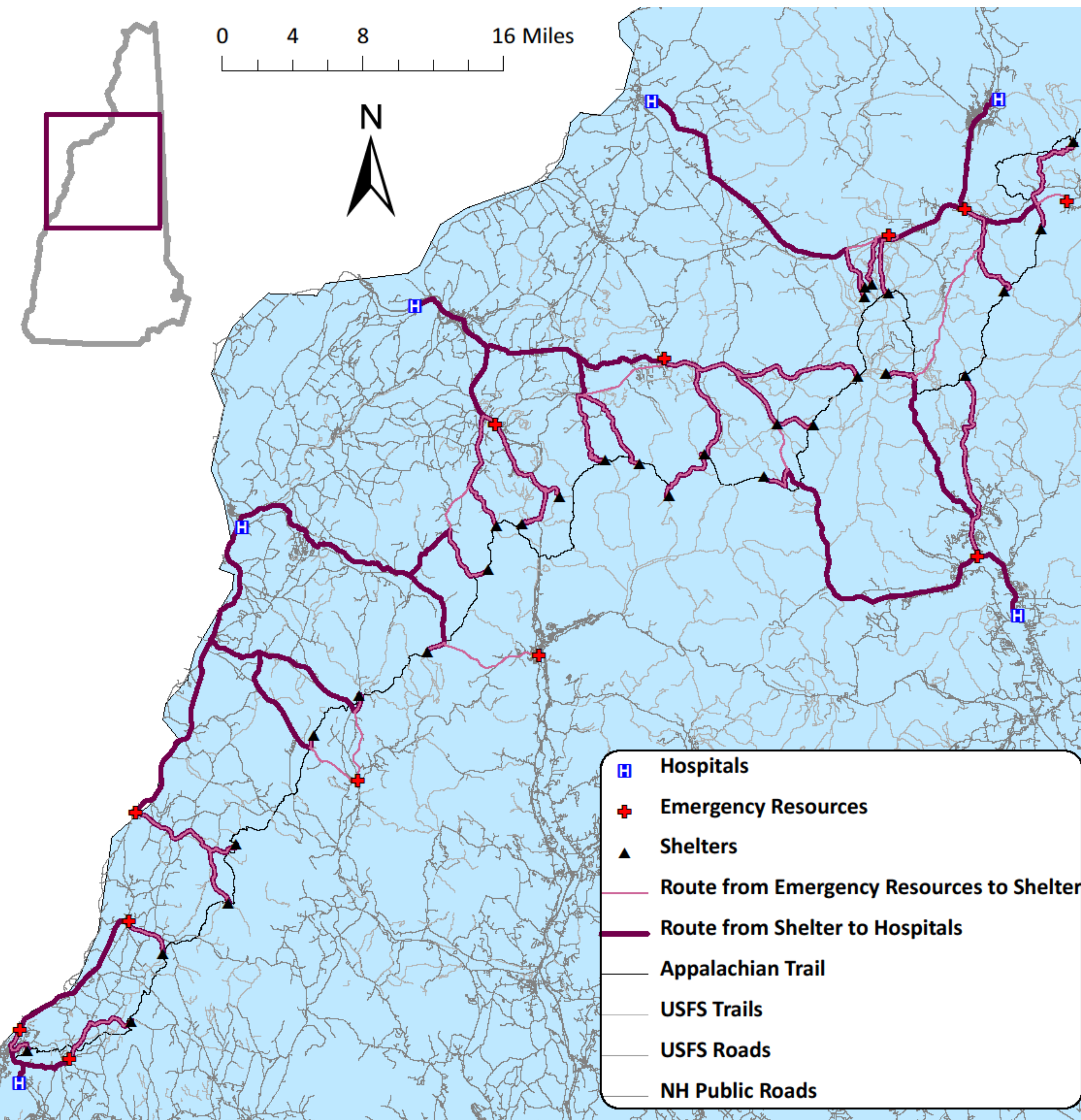


Figure 2: Rescue routes to and from shelters (refer to Figure 1 for shelter names and rescue times).

## Further Research

The next step of this project would involve two aspects: the first would be to get incident reports from the AT and evaluate the trail according to the concentration of incidents along smaller segments. This could then be combined with the accessibility data from this study to assess the second aspect, evaluating the best locations for either medical resource caches or medical facilities in order to maximize the efficiency of rescue efforts.



Created by Sarah Hayes, May 6, 2009  
Data Sources: Appalachian Trail Conservancy, United States Forest Service, GRANIT (2006)