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4.0 ACCESS AND TRAVEL PATTERNS

4.1 TRAVEL TO THE FOREST AND SEASONAL PATTERNS

The following sections will summarize the roadway network and traffic patterns in the Forest Region. A number of roads provide access to the Forest. The majority of traffic is carried by interstate, state, and U.S. highways, including I-91, I-93, NH 16, NH 25, NH 112, NH 118, US 2, and US 302.

Figure 4-1 provides a general overview of the distribution and relative magnitude of traffic throughout the Forest Region. In this figure, the magnitude of 1997 average daily traffic (ADT), as measured by NH DOT continuous traffic counting stations (CTCs), is indicated by the size and color of dots superimposed on the roadway network.¹ Maximum traffic flows occur in August and minimum flows in April.

Figure 4-1 provides the following insights into vehicle travel in the Forest Region:

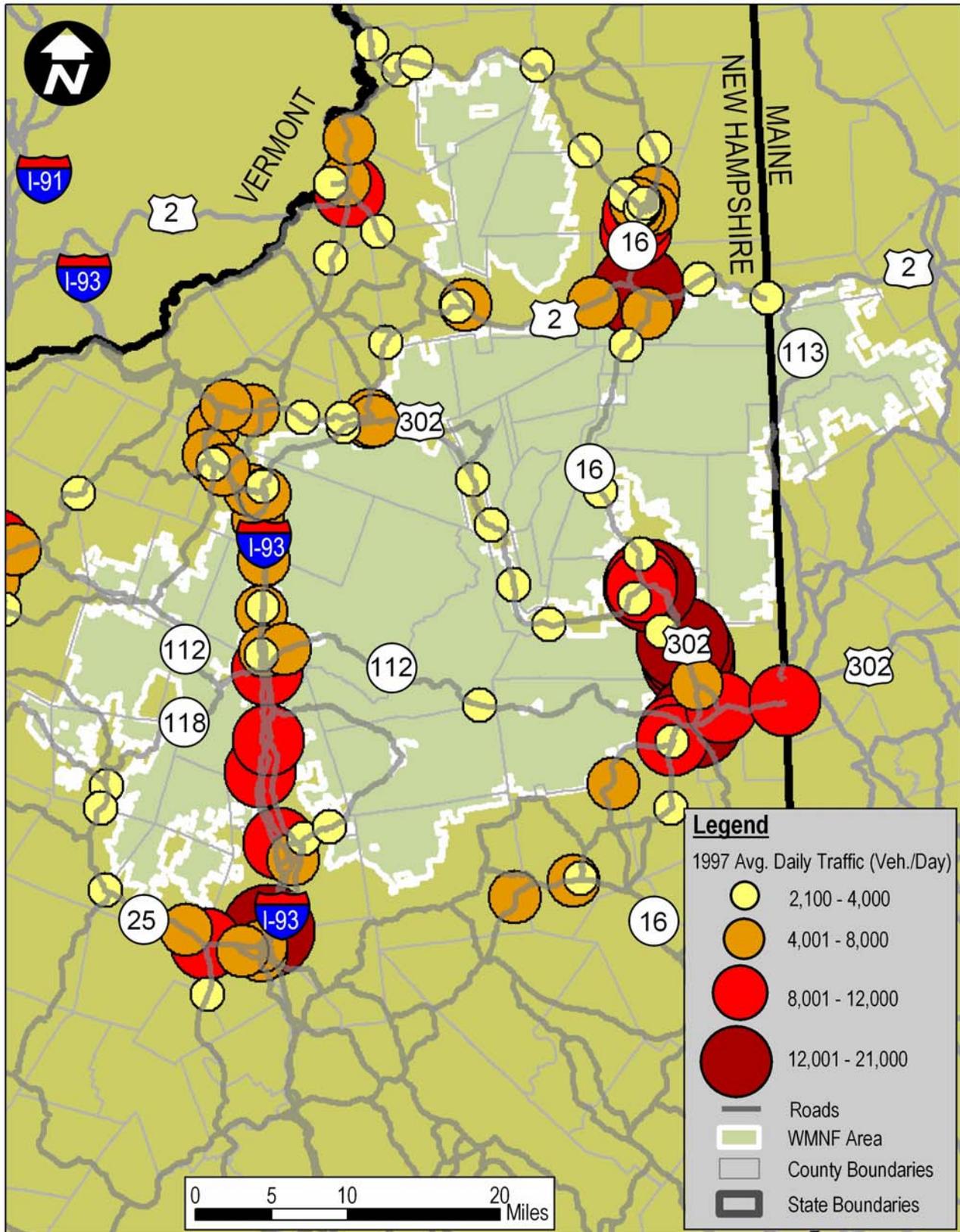
1. I-93 and NH 16/US 302 (from Conway to Bartlett) are relatively major conduits of traffic through the Forest.
2. US 302, NH 16 (north of Bartlett), and NH 112 are relatively minor conduits of traffic through the Forest.
3. Significant entrance/exit points to/from the Forest occur in Franconia (I-93), Plymouth (I-93), Conway (US 302/NH 16), Gorham (US 2/NH 16), and Carroll (US 302).
4. The majority of traffic from Maine travels to the Forest via US 302 rather than US 2.

4.1.1 Historic Patterns

Traffic data, from 1994 to 2002, was gathered to assess historic traffic patterns in the Forest Region. Data was acquired from 10 counters throughout the Region and then averaged to create a region-wide estimate of traffic. Data was also classified into traffic categories corresponding to commuters and tourists.

¹ 1997 was selected for analysis as it was the most complete of all years available in the spatial dataset.

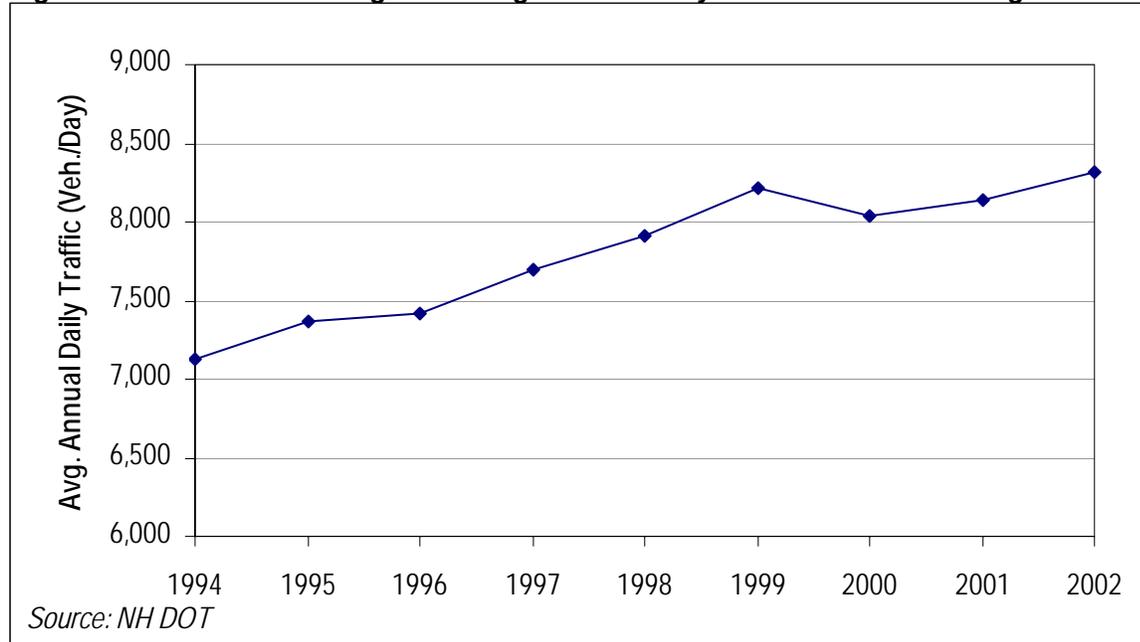
Figure 4-1: Distribution and Relative Magnitude of Traffic in the Forest Region



Data Sources: NH Department of Transportation; U.S. Forest Service, White Mountain National Forest

Figure 4-2 shows region-wide average annual daily traffic (AADT) from 1994 to 2002. As shown, traffic steadily increases from approximately 7,100 vehicles per day (vpd) in 1994 to 8,300 vpd in 2002. This amount of growth corresponds to a 17% increase in traffic volume over the eight year period or an annual average growth rate of approximately 2% per year.

Figure 4-2: Estimate of Change in Average Annual Daily Traffic in the Forest Region



Both commuters and tourists are significant sources of total traffic in the Forest Region. Therefore, the distribution and behavior of these traffic types were assessed by reviewing temporal traffic fluctuations at each CTC. Hence, CTCs having steady increases in AADT over time were classified as “Commuter CTCs”, or CTCs largely reflecting the behavior of commuter traffic flow. CTCs with significant annual fluctuations in AADT were classified as “Tourist CTCs”, or CTCs largely reflecting tourist traffic flow behavior. CTC classification was confirmed by local knowledge of the region’s traffic. It should be noted that tourist CTCs include commuter traffic and vice-versa.

According to the classification, half of the ten CTCs are more reflective of tourist traffic flow behavior, with the remaining half more reflective of commuter traffic flow behavior. Figure 4-3 shows traffic data from Commuter CTCs and Figure 4-4 shows traffic data from Tourist CTCs.

As shown below, there is a significant difference in the shape of the two figures. Commuter flows gradually increase over time, while tourist flows fluctuate. . There is a notable fluctuation in tourist traffic from 1999 to 2002, which is probably related to reduced traffic due to a decline in economic conditions.

4.1.2 Current Seasonal Traffic Patterns

Monthly 2002 traffic data, for all CTCs, was averaged to assess current seasonal variation in traffic. As shown in Figure 4-5, traffic fluctuates noticeably on a monthly basis in the Forest Region. There are three significant peaks, which occur in February, July, and October. There are two significant troughs, which occur in April and November.

Figure 4-3: Estimated Behavior of Commuter Traffic Flow in the Forest Region from 1994 to 2002

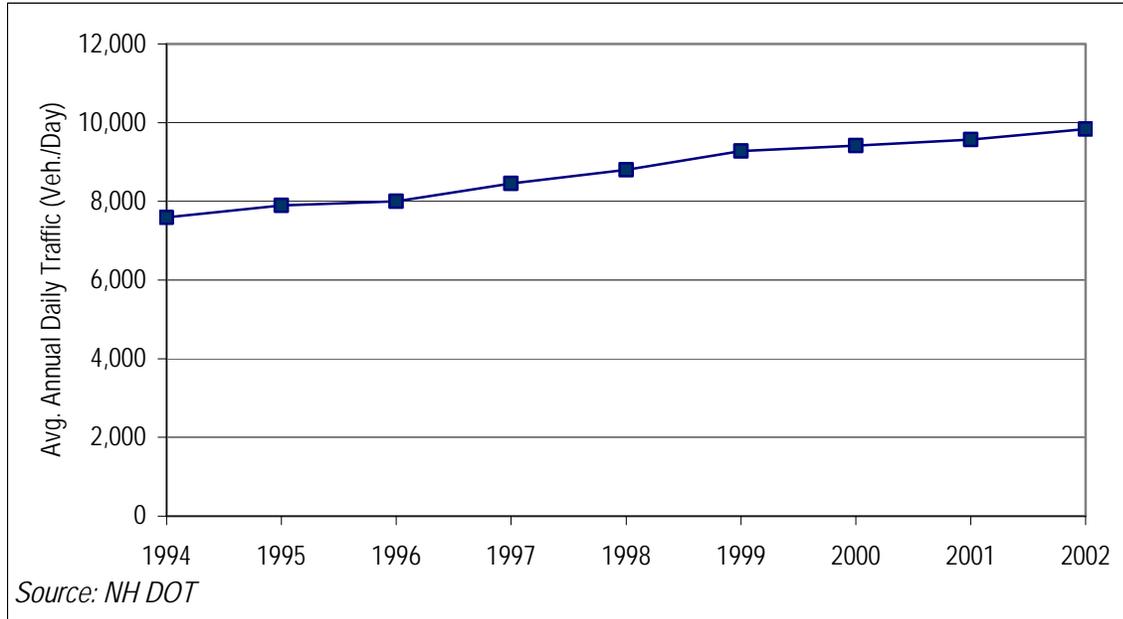
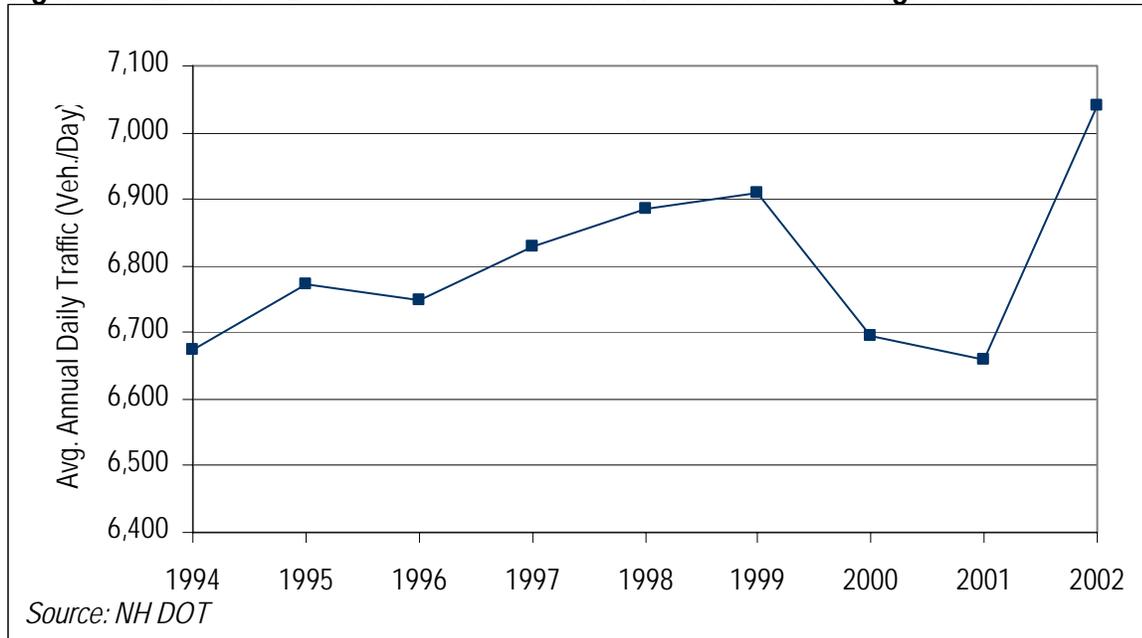
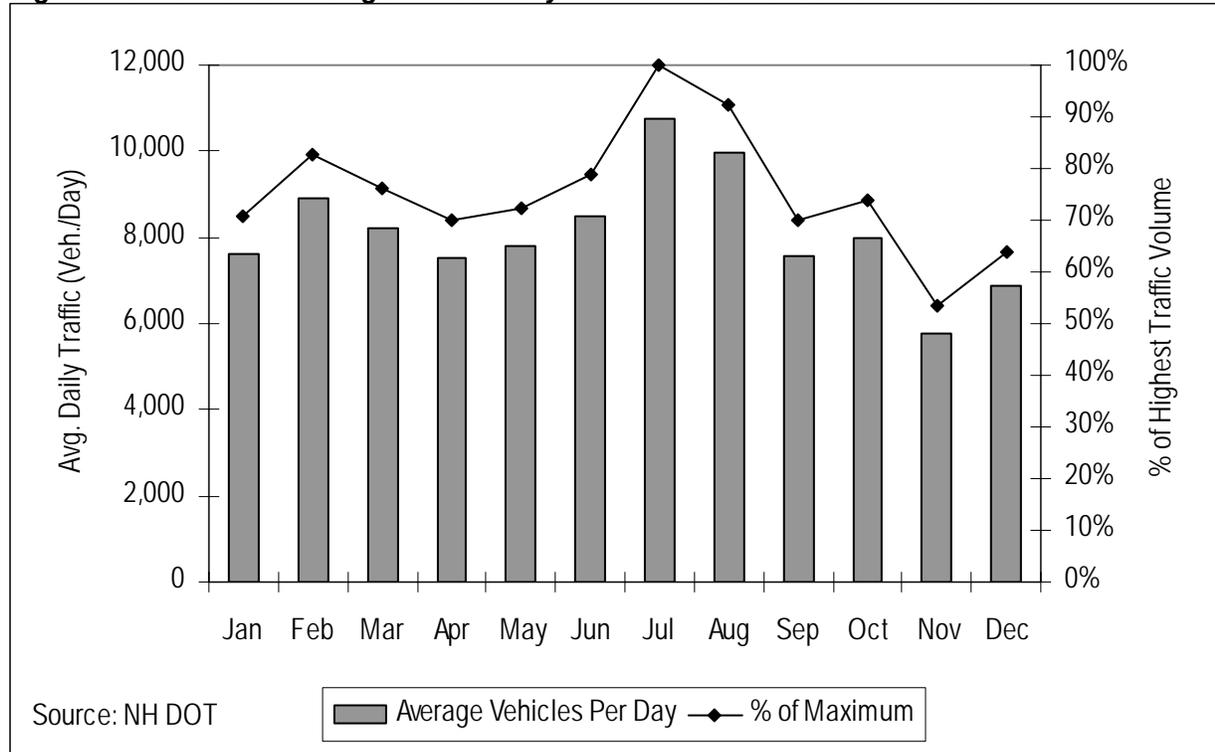


Figure 4-4: Estimated Behavior of Tourist Traffic Flow in the Forest Region from 1994 to 2002



The traffic volumes shown in Figure 4-5 appear to be correlated to the level of tourism activity. February is a peak month for skiing (school vacations), July is a peak month for alpine recreation, and October is a peak month for observing foliage. Conversely, April and November are not known as popular months for recreation.

Figure 4-5: Estimated Average Annual Daily Traffic in 2002 for Selected Roads

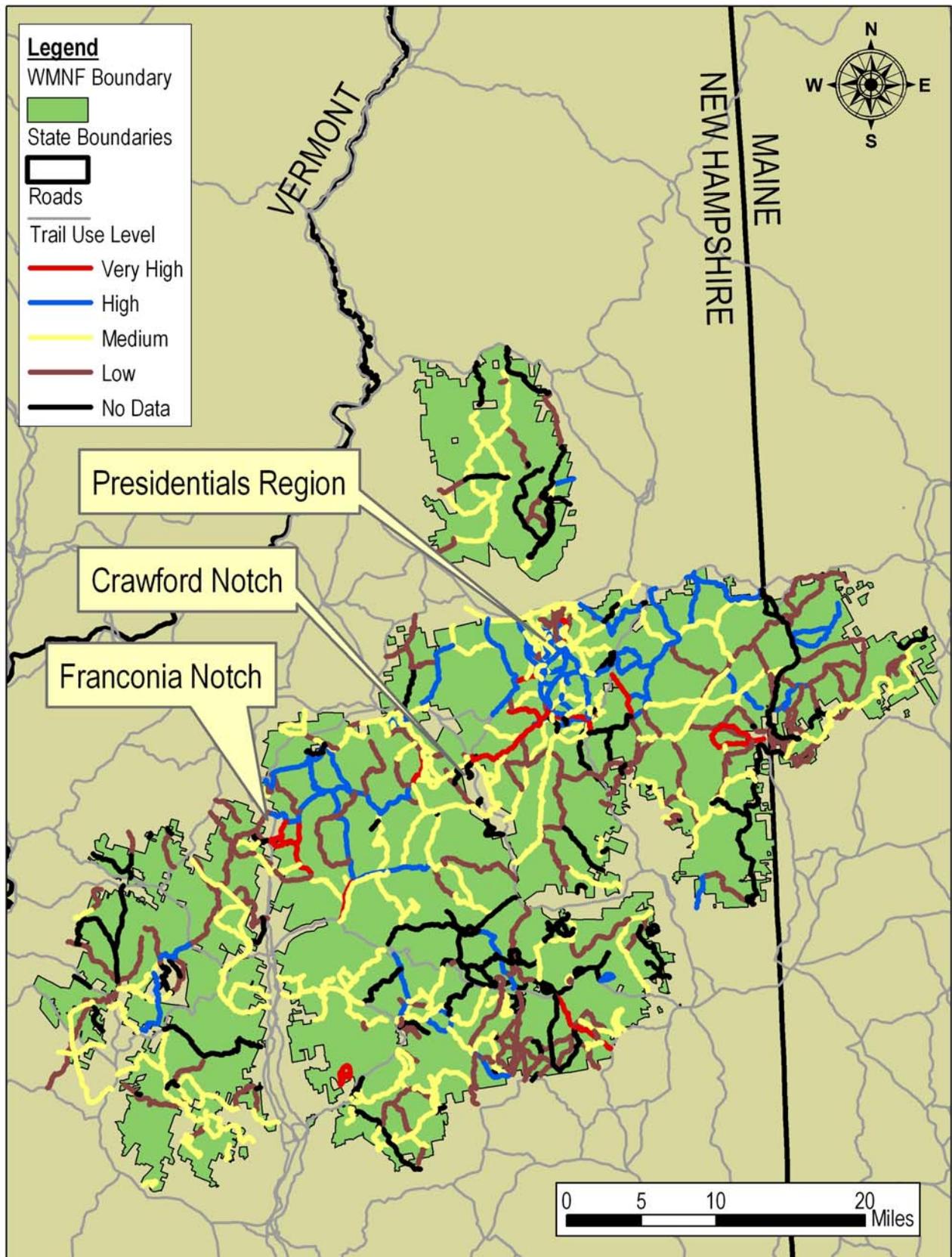
4.2 TRAIL USE

Data on hiking use levels were gathered from the NVUMS (US Forest Service, 2001). Figure 4-6 identifies the major trails located in the Forest Region, including trails located on private land located near the Forest. Red and blue lines indicate “very high” and “high” use respectively. The patterns for use are focused around areas that have easy access from major roads and offer high scenic quality. In the Presidential region, the Tuckerman Ravine trail and the Ammonusuc Ravine trail to Mt. Washington, the Caps Ridge trail to the summit of Mt. Jefferson, the Valley Way from Appalachia parking to the summits of Mt. Adams and Mt. Madison and Crawford Path to the southern Presidentials and Mt. Washington are all “very high” use.

Other regions that experience similar levels of foot traffic are access points to AMC huts and some lower summits with excellent scenery. These include Zealand trail to Zealand hut, Nineteen Mile Brook accessing Carter Notch hut, areas on the west slopes of the Franconia ridge including the Old Bridal Path accessing Greenleaf hut. Additionally, Mt. Chocorua summit via Champney Falls from the Kancamagus Highway and the Piper Trail from Rt. 16, the Baldfaces via the Baldface trail leaving from Rt. 113 in Maine, and the Welch-Dickey loop all experience these very high use levels.

High (blue) and medium (yellow) use trails are spread across the Forest. Generally, the high use trails will be shorter and access a well-known attraction, such as a peak, waterfall, or established campsite. Medium use trails may access popular summits, but may be a longer approach or start at a remote road. The figure also illustrates the regions experiencing “low use” (brown). The highest density of these trails is in and around the Sandwich Range between Mt. Passaconaway and Mt. Chocorua and in the Caribou-Speckled Mountain Wilderness in Maine.

Figure 4-6: Hiking Trail Use Levels



Data Sources: NH GRANIT GIS System; U.S. Forest Service, White Mountain National Forest

4.3 BARRIERS TO ACCESS

In an effort to evaluate barriers in the WMNF, it was important to recognize that barriers can be subtle to some and insurmountable to others. Physical barriers, such as restricted use areas, are only one type. Others may be economic or social such as user behavior and perceptions of other user groups. Generally, any constraint that limits participation can be considered a barrier to access. Individual perceptions of what is a barrier vary greatly, and contentious debates are possible on such a topic. We present only a partial list of many legitimate barriers to access.

Interviews with interest groups, an evaluation of current and past Forest rules and regulations, literature reviews, and a review of permitting issues all provided valuable insight to this assessment topic.

4.3.1 Physical Barriers

Various rules and regulations are established to limit access or uses of portions of the Forest at designated times. Though some regulations, such as state fishing laws, should not be classified as a true barrier to the WMNF (since these same restrictions apply to all land in NH and ME), other restricted use rules can be perceived as barriers. A review of the current and past rules and regulations show that off-highway recreation vehicles, such as trail bikes and ATVs, are prohibited on the Forest in the summer months. Though it has been falsely suggested that this type of recreational opportunity is not in high demand, some groups find these restricting their ability to recreate. The demand for summer motorized recreation has grown considerably in recent years and is expected to continue along similar trajectories. Records from Forest Plan public meetings indicate ATV users find these restrictions to be a major physical barrier to their ability to recreate. Pressure from local clubs will likely increase as ownership continues to increase.

Disabled or physically challenged members of the recreating community have expressed a growing interest to visit more remote regions of natural places. There have been instances where disabled individuals have traveled to selected high mountain locations in the WMNF and now many individuals are looking for access to Wilderness and other remote areas. The difficulty of access for this group of individuals may be perceived a physical barrier to use.

4.3.2 Economic Barriers

Economic barriers exist in all facets of our society. Additionally, there is tremendous disparity among individuals as to what something is “worth.” For the purposes of this assessment, if an individual chooses to not participate in an activity for economic reasons, then an economic barrier exists. Given these very broad terms, any given economic barrier may or may not be consistent with generally held ethics, but regardless must be acknowledged as factors in decisions regarding Forest use.

A recent survey examined cost considerations as a factor affecting recreational site choices. Marsinko (2000) describes that 25% of respondents chose cost over time as the most important consideration when choosing a recreational site. Not surprisingly, this group’s mean income was close to \$15,000 less than the non-cost sensitive group and they tended to be traveling shorter distances.

The cost of certain activities undoubtedly excludes groups of people. For example, the AMC Hut system throughout the WMNF has been suggested to present an economic barrier to certain groups. A family of four (non-AMC members) would spend \$240 for one night at Lakes of the Clouds hut. It has been suggested that because reservations for these huts fill up quickly, a barrier does not exist. Though there are enough individuals who can afford this type of recreational opportunity, it should be recognized that a significant number of interested individuals are barred from having such an experience. There are no

options to camp above tree-line during the summer in the WMNF if you are not staying at an AMC hut, thus, given our adopted definition of an economic barrier, the cost could be perceived as a barrier to such an experience. This does not suggest that this constraint is deliberate or inappropriate, since it reflects only part of the operating costs associated with providing high mountain accommodations, but rather it is a factor in decisions regarding use of the WMNF.

The parking-fee demo has also been stated to be an economic barrier to use of the Forest. However, personal opinions on the appropriateness of such a fee are often the driving force behind resistance of payment. Because of this, it does not represent the same barrier, but rather would be included in the following section regarding *Social Barriers*.

There are activities which have a high initial start-up cost, and thus might be perceived to have economic barriers. Downhill skiing, snowmobiling, and boating would all fall into this category, but are not unique to the Forest.

4.3.3 Social Barriers

Social barriers are related to individual behavior, perceptions, and experience. Given this wide definition, the discussion here will only cover a partial list of what are perceived to be social barriers. The barriers identified here are not unique to the WMNF.

Halstead et al. (2000) suggests that reduced visibility due to air pollution in the White Mountain National Forest may reduce the number of visits to the region. This relationship has been researched but the evidence is not conclusive. However, people surveyed indicated that degradation to White Mountain vistas could reduce the frequency of their visitation. Similar relationships could be expected for other changes that reduce the overall scenic quality of the Forest.

The low participation rates of minorities in outdoor activities has been attributed to concerns of personal safety, the absence of discretionary money, transportation, and inadequate knowledge of recreational sites, though the level that each of these plays in participation decisions is unclear.