

## ***Wood turtle***

### Status

Federal status: G4 N4, Not listed

NH state status: S3, not listed

ME state status: S4, Special Concern

The wood turtle has declined throughout its range, largely as a result of past collection for the food market and the pet industry. Of 13 states in North America that responded to a survey on the status of wood turtles, no states reported stable or increasing populations, 8 states reported declines, and 5 states reported unknown trends. In New Hampshire, the wood turtle was much more abundant historically.

The expert panel indicated that the current outcome for this species is D range-wide and declining in the future because many populations are comprised of many old turtles and very few young ones, so as old turtles die the populations may also die. On the WMNF, the panel indicated that the outcome may be better than it is range-wide, but is not higher than C. The Forest outcome is moving towards outcome D because off-Forest populations are at-risk and their loss could affect population dynamics on the Forest. With good management and key purchases, the Forest could become a refuge for this species. Panelists agreed that for herps, viability outcome C is not viable; only A and B are viable for these species.

### Distribution

In Canada it extends from Nova Scotia and New Brunswick, west to Ontario. In the U.S. it occurs in the northeast and Great Lakes region. The northeastern population extends from Maine to Pennsylvania, south to West Virginia and northern Virginia. In the Great Lakes region, it occurs in Michigan, Wisconsin, eastern Minnesota, and northern Iowa. Northern New England is central to the wood turtles' North American range, so these states could have a large impact on the overall viability of the species.

In New Hampshire it ranges from Coos County to Cheshire, Hillsborough, and Rockingham Counties. In Maine, it occurs throughout the state, from Aroostook County south to York County. The wood turtle has been documented on the WMNF, but the number and location of occurrences is not well tracked.

### Habitat

Wood turtles use a mix of aquatic and terrestrial habitats throughout the year. They spend the winter hibernating in permanent, low to moderate gradient streams or rivers, often within muskrat burrows, root masses, undercut banks, and under submerged logs. Because of a low availability of these stream types at higher elevations, wood turtles are probably unlikely to occur above 2000 feet elevation. Turtles emerge from hibernation in late March or April.

In the east, wood turtles spend much of the summer in terrestrial habitats, including meadows, shrub thickets, farmland, and deciduous forests. They also use bogs, forested wetlands, vernal pools, and streams during this time. While in terrestrial habitats, many

wood turtles are within 300 meters of suitable streams but some individuals may travel much greater distances.

Wood turtles appear to prefer edge-associated terrestrial habitats. Riparian areas and forest-opening edges have dense shrubbery or ground cover for protection and food, and provide open areas for basking to regulate their body temperature. Nesting areas are near water, elevated at least 1 meter above the normal water level, very sandy or gravelly, bare of vegetation, and receive direct sunlight.

Habitat for the wood turtle is probably not ideal on a large portion of the White Mountain National Forest due to elevation and steepness of waterways on much of the Forest. Some streams and rivers in the lower parts of drainages on the Forest provide suitable habitat.

### Limiting Factors

Wood turtles have a delayed age of sexual maturity and produce few young, so anything that reduces adult survival within populations will reduce the viability of the species.

Alterations of stream channels (e.g., stabilization, channelization, and damming) can reduce the quality of stream habitats and the availability of suitable nesting sites. Turtles hibernating in the undercut banks of dammed streams can freeze when the flow of water is stopped. Additionally, wood turtles are not tolerant of pollution within streams.

The species is vulnerable to the destruction and isolation of nesting, feeding, and wintering habitats. Urbanization and agricultural activities have resulted in habitat loss and degradation as well as direct mortality of wood turtles. Primary roads and other intense human developments often act as barriers to turtle movements and increase human access to areas occupied by wood turtles. Automobiles and machinery can result in direct mortality of individuals.

Succession may be a threat if the disturbance regime is inadequate. Dense shrubby habitats and nesting sites within riparian areas were historically maintained by flooding rivers. Stream alterations may reduce this natural disturbance. Other anthropogenic disturbances may create openings and a mosaic of habitats that benefit the wood turtle but these activities could also be detrimental to the viability of the species if they increase fragmentation, predators, or human contact.

It is now illegal to collect, possess, or sell wood turtles throughout much of their range, including VT, NH, and ME. However, large and small-scale collections continue to be a threat to the viability of the species.

Populations of some predators, such as raccoons, have increased in human-dominated habitats. These predators are a threat to turtle eggs and some adults.

### Viability concern

Wood turtles are uncommon on the Forest. The species continues to decline range-wide. Local experts believe it is not declining as quickly on the WMNF but they still expect it to decline in the future, and they do not think it is currently viable on or off the Forest. Management could affect this species, though the primary threat is illegal collection.

### Management activities that might affect populations or viability

Dam construction and encouragement of beaver activity near wintering habitat for wood turtles could eliminate habitat suitability or result in the loss of individuals, depending on timing. Damming could also change water levels sufficiently to flood nesting sites, making them unsuitable.

Instream management could remove or add wintering habitat. Actions that would alter undercut banks or existing logs and burrows in suitable stream reaches could reduce hibernation sites. Placing rootwads and large logs in suitable streams could provide additional wintering sites.

Management that would place a primary road in an area used by wood turtles, or increase traffic levels on existing roads during the summer, could increase turtle mortality and capture, and reduce habitat suitability.

Timber harvest and other management within 300-400 meters of suitable stream habitat could impact wood turtles. The extent of impacts depends on timing and the situation. Snow-free logging could result in loss of individuals that might be using the forest, and could prevent turtles in terrestrial habitats from moving to streams or nesting areas. Winter logging could not directly affect individuals, as they would be hibernating in streams. It might provide basking and feeding habitat, depending on the treatment. Care must be taken in any season to avoid creation of barriers to turtle travel adjacent to suitable streams.

Gravel pits within 300-400 meters of suitable stream habitat could be used for nesting. Alteration of a nest site during the nesting season would negatively affect a population.

### References

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