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→ Parts NOT carried forward yet

## **Wildlife Habitat**

Warren's human inhabitants are fortunate to share the Mad River Valley with a variety of other animal species that depend on an inter-connected mosaic of unique habitats and land features for their survival. Maintaining viable populations of native wildlife has long been an important goal of Warren residents. To achieve this goal, residents and local officials must understand the habitat needs of different species, where those habitats are found in the community, and how land use and human activity can best be guided so that the function of important habitat is not diminished. However, human activity can have a harmful impact on many species. Through a greater awareness of the local wildlife population and an understanding of potential conflicts with the town's human population, such conflicts may be avoided. In addition to wetlands and riparian areas, which are shared by many species, planning in Warren must also take into account habitat for the whitetail deer, black bear, trout, and other lower profile species.

To assist with this challenge, the Town contracted with Arrowwood Environmental to conduct a *Natural Heritage Inventory and Assessment* for the Town, which was completed in April 2008. That report described the twelve distinct upland natural communities that exist in town (generally, all forested areas) and suggested management recommendations for those communities deemed to be of statewide significance. In addition, the report identified the general location and ecological function of several types of habitat, as well as the importance of large tracts of unfragmented forest habitat and connections. That study, including the inventory of important landscape and ecological features, provides the foundation for policies and programs to maintain wildlife populations and the Town's biological diversity.

### **Core Habitat & Contiguous Habitat Units**

Core habitat is described as "forested wildlife habitat that is far removed from human activities and their artifacts, such as roads, houses and active farmland." Core habitat provides important mating, nesting, feeding and denning habitats for species that can not survive in fragmented landscapes and close proximity to human habitation. Species that rely on such areas include several species of hawks, owls and songbirds (e.g., broad-winged hawk, ovenbird, wood thrush, scarlet tanager, and black and white warblers), as well as fisher, bobcat and black bear.

Much of Warren is characterized as core habitat, including upland areas in the Northfield and Green Mountain ranges (excluding area developed as part of the ski area). The greatest threat to wildlife values in core habitat stems from fragmentation resulting from subdivision and associated residential development. Minimizing fragmentation through careful site design and clustering, conservation of large tracts of land, and ensuring that development that does occur avoids direct impacts on certain habitat types found within core habitat (e.g., see "mast stands" below).

"Contiguous habitat units" (CHU) are described as "a combination several different habitat types combined to form a continuous wildlife habitat." Typically, the center, or core, of a CHU is comprised of unfragmented forest that is mostly free from most human activities, combined with other significant wildlife habitats (e.g., mast stands, wetlands, deer wintering areas, etc.). Most CHUs in Warren overlap with "core habitat."

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critical seasonal food sources for black bear and other species. Like most mountain communities in Vermont, Warren does not have extensive wetlands, although this does not diminish the importance of those that do exist. The Arrowwood study identified 273 individual wetlands encompassing approximately 631 acres. In addition, several vernal pools (small, seasonal forest wetlands) were also identified.

*Mast Stands:* Mast trees are those that provide concentrated fruit or nut production. When concentrated into a stand, these trees provide a critical food supply for a variety of wildlife, including deer, turkey and bear. Mast stands are of particular importance to local bear populations, which tend to prefer stands that are isolated from human habitation.

Eleven mast stands have been identified in Warren, including six that show signs of frequent use by bears. These include the Slide Brook Basin which was described by one state biologist as being the "largest and most intensively used beech stand in the state, known to date." Because of the impact of human activity on the use of mast stands by bear, it is important that not only productive trees be protected, but that adequate buffers be established to limit disturbance. Large areas of the Green Mountain Range and Northfield Mountain Range serve as prime habitat for black bear (see Map 2). In particular, the area south of Lincoln Gap Road, most of which is included in the Green Mountain National Forest, and the Slide Brook basin located between Lincoln Peak and Mount Ellen in Fayston, provide important bear habitat. The Slide Brook basin has been identified as some of the most productive bear habitat in Vermont due to the extensive beech forest and high seasonal concentration of bears. According to state wildlife biologist Charles Wiley, Slide Brook has the "largest and most intensively used beech stand in the state, known to date." Much of this area is owned by Sugarbush Resort and is subject to Act 250 permit conditions limiting most development activities. However, these permits are subject to amendment, creating some degree of uncertainty regarding the future use and management of the area. Additional protection measures, such as deeded easement or public ownership, would ensure permanent protection of this critical resource.

Significant bear habitat may also be found in the Northfield Mountain Range. Unlike the Green Mountains, which encompass extensive public land holdings, greater concentration of development, and some level of habitat protection due to past permit activity, the Northfield Mountains have experienced more substantial land subdivision and residential development. Should these trends continue, the conflict between human inhabitants and bears can be expected to increase.

*Riparian Habitat:* As noted in the section of this chapter that addresses "rivers and streams," riparian vegetation is not only important for maintaining water quality – and therefore fish populations – but also for providing necessary habitat for amphibians, several mammals, including river otter, long-tailed weasels, moose and big brown bats, and a variety of bird species. Over 3,000 acres of forested riparian habitat (along roughly 250 kilometers of stream corridor) have been identified in Warren. Establishing stream buffers that limit encroachments and maintain vegetation is an effective way to protect this resource.

*Trout Fisheries:* The Mad River system is a popular trout fishery, although this is largely attributable to the Department of Fish and Wildlife's trout stocking program. While brook and

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Black Bear. Large areas of the Green Mountain Range and Northfield Mountain Range serve as prime habitat for black bear (see Map 2). In particular, the area south of Lincoln Gap Road, most of which is included in the Green Mountain National Forest, and the Slide Brook basin located between Lincoln Peak and Mount Ellen in Fayston, provide important bear habitat. The Slide Brook basin has been identified as some of the most productive bear habitat in Vermont due to the extensive beech forest and high seasonal concentration of bears. According to state wildlife biologist Charles Wiley, Slide Brook has the "largest and most intensively used beech stand in the state, known to date." Much of this area is owned by Sugarbush Resort and is subject to Act 250 permit conditions limiting most development activities. However, these permits are subject to amendment, creating some degree of uncertainty regarding the future use and management of the area. Additional protection measures, such as deeded easement or public ownership, would ensure permanent protection of this critical resource.

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