



Figure 21. Contiguous Habitat Units Map

Within the CHUs, approximately 7,164 acres of Deer Winter Habitat has been identified and mapped. Mast stands were identified in 10 of the CHUs. A summary data table is provided in Appendix 2 detailing the individual habitat elements within all the CHUs. A discussion of the most significant CHUs is provided below.

CHU# 1

General Habitat Information

- 6376 acres total
- 6068 acres core habitat
- 1906' mean elevation
- Low horizontal diversity

Specific Wildlife Features

CHU1 has the largest core area in the study area and extends over the mountains into Huntington and Buell's Gore. Mast stands and forested wetlands are present and important for the productivity and maintenance of black bear and other deep forest species populations. Ledge habitat is also present in this unit. CHU1 has 26 miles of stream habitat and generally well-vegetated and topographically incised stream valleys which add to their value and use as wildlife movement corridors. This unit has several vernal pools (generally lower on the landscape) and contains substantial areas over 2700 feet in elevation with potential Bicknell's Thrush and other high-elevation songbird habitat. Other birds associated with this Montane Spruce-Fir habitat include: the blackpoll, bay-breasted and yellow-rumped warblers, ruby-crowned kinglet, and the olive-sided flycatcher. Just below this forest zone, the Montane Yellow Birch-Red Spruce Forest offers habitat for the winter wren, blackburnian and Canada warbler as well as the solitary vireo. Included in CHU1 is a portion of the Camels Hump State Park and Phen

Features Present:

- core
- deeryard
- streams
- wetlands
- riparian
- mast
- ledge
- bear wetland
- vernal pool
- significant community

Basin Wilderness area. This CHU1 is dominated by un-fragmented core forest.

CHU# 2

General Habitat Information

- 1367 acres total
- 1057 acres core habitat
- 1315' mean elevation
- Moderately low horizontal diversity

Specific Wildlife Features

CHU2 extends north into wild forested country in Duxbury and is close enough to CHU1 that wildlife probably moves readily between the two areas. CHU2 contains substantial areas of deer wintering habitat, early successional vegetation, and riparian/floodplain vegetation. With CHU2 containing both deeryard and early succession habitat, it is probably used by coyotes and other predators seeking food in these habitat types. The area has good potential habitat for black bears with beech stands present and wetlands that are appropriate for bear use. Signs of bear presence were noted during a field visit to the western finger of CHU2.

Features Present:
core
deeryard
streams
wetlands
early succession
riparian
mast
bear wetland
significant community

CHU2 contains areas that could be utilized by high-elevation songbirds, including potential habitat for Bicknell's thrush.

CHU# 9

General Habitat Information

- 2275 acres total
- 1783 acres core habitat
- 1326' mean elevation
- Moderately low horizontal diversity

Specific Wildlife Features

CHU9 has an extensive core area, substantial deer wintering habitat (with extensive sign of current use), and several large areas of wetland habitat. The observation of bear sign in wetlands at this site, the presence of mast stands and a substantial core area suggest that this unit is important to maintaining Waitsfield's bear productivity. CHU9 has ledge habitat, extensive forested riparian habitat as well as early successional wildlife habitat. CHU9 has vernal pools and a nice early succession balsam fir forest situated adjacent to a large streamside wetland complex where river otter, mink and bobcat sign were observed.

Features Present:
core
deeryard
streams
wetlands
early succession
riparian
mast
ledge
bear wetland
vernal pool
significant community

CHU# 26

General Habitat Information

- 1435 acres total
- 1050 acres core habitat
- 1468' mean elevation
- Moderately low horizontal diversity

Specific Wildlife Features

CHU 26 is perhaps most notable as the area with at least 6 identified vernal pools. These provide important breeding habitat for a diversity of vernal pool-dependent wildlife. Also present within this unit is extensive forested riparian habitat and many wetlands. Remote forested wetlands and recently climbed American beech trees attest to the value of this area to bear. This forest area is extensively managed and several patches of early succession vegetation provide good snowshoe hare, mice, and predator habitat. A portion of this unit includes a large Norway Spruce plantation, with impressive regeneration in the understory likely to provide significant habitat for a variety of species.

Features Present:

core
deeryard
streams
wetlands
early succession
riparian
bear wetland
vernal pool
significant community

CHU# 8

General Habitat Information

- 1093 acres total
- 984 acres core habitat
- 1783' mean elevation
- Moderately high horizontal diversity

Specific Wildlife Features

CHU8 is situated between the remote Big Basin area and several lower gradient forested areas. This unit has substantial areas of early successional vegetation resulting from active forest management activity, floodplain/riparian streamside forests, and ledge habitat that could provide important protective cover for bobcat and other animals. CHU8 may provide a role as an important forested landscape connection between the large remote habitat in Big Basin and the landscape closer to Route 100 and the village. The area has a high potential for bear habitat with the presence of mast stands and wetlands.

Features Present:

core
deeryard
streams
wetlands
early succession
riparian
mast
ledge
bear wetland
significant community

CHU# 12

General Habitat Information

- 1215 acres total
- 1042 acres core habitat
- 1415' mean elevation
- Moderately high horizontal diversity

Specific Wildlife Features

CHU12 has extensive deer winter habitat, areas of early successional habitat, and forested riparian habitat. Field observations suggest that deeryards in this unit were receiving moderate amounts of deer use (Natural Community

Features Present:

core
deeryard
streams
early succession
riparian
mast
ledge
vernal pool
significant community

#157). The area has a Northern red oak mast stand, vernal pools, and wetlands. CHU12 is likely used at least seasonally by bear.

CHU# 13

General Habitat Information

- 3436 acres total
- 3106 acres core habitat
- 2287’ mean elevation
- Low horizontal diversity

Specific Wildlife Features

CHU13 has one of the largest core areas in the study area and includes ski area development. CHU13 has large areas of Montane Spruce-Fir Forest which likely provides breeding habitat for several species of warblers and other high elevation birds including Bicknell’s thrush. Significant mast stands and forested wetlands are present.

Features Present:
 core
 deeryard
 streams
 wetlands
 early succession
 riparian
 mast
 ledge
 bear wetland
 significant community

The Slide Brook beech stand, one of the heaviest used beech stands known in Vermont, is partially contained within this unit. Black bear and other deep forest species likely use this area year-round. CHU13 also is contiguous with large forested habitat outside of the study area to the west. The area has several deer winter habitats, ledge habitat and extensive areas of forested riparian habitat.

CHU# 19

General Habitat Information

- 4145 acres total
- 3551 acres core habitat
- 1868’ mean elevation
- High horizontal diversity

Specific Wildlife Features

CHU19 has a very large core area that extends across most of the higher elevations of Waitsfield and east into Northfield. CHU19 has the largest core area in Waitsfield and likely provides “source” habitat for bear, bobcat, fisher, coyote, moose and other mammals and birds. CHU 19 has a relatively high diversity of plant community types (i.e. a high horizontal diversity) and extensive areas of early successional habitat. This area likely contains year-round populations of black bear and other deep forest species. Field work indicated that mast stand #19 was not heavily utilized by bear either historically or recently.

Features Present:
 core
 deeryard
 streams
 wetlands
 early succession
 riparian
 mast
 ledge
 bear wetland
 significant community

CHU19 has extensive forested stream riparian areas. The unit includes a remote beaver-influenced wetland that likely is used by bears and other wildlife. Extensive deer sign was documented in the Hemlock Forest communities within this unit (Deer winter habitat #38).

Scragg Mountain and areas within the southern part of the unit have coniferous forest vegetation and may provide breeding

habitat for high elevation songbirds including the Bicknell's thrush.

CHU# 21

General Habitat Information

- 1043 acres total
- 702 acres core habitat
- 974' mean elevation
- Moderately high horizontal diversity

Specific Wildlife Features

Nearly the entire CHU21 is a Hemlock Forest Community mapped as deer winter habitat. The unit also contains extensive ledge habitat which may be of significance in providing, protective bobcat, raccoon, and porcupine denning habitat. Porcupine, and probable bobcat sign was noted within the ledge areas of this unit. Both the deer winter habitat and the potential ledge denning sites have western aspects and may be sunny and quite warm.

This increases their value as potential wildlife habitat. There are also extensive wetland and streamside forested riparian habitats within the unit that may be utilized by bear in spring and/or summer months. CHU21 also has vernal pools and perched Hemlock-Hardwood Swamps that offer important amphibian habitat.

Features Present:
core
deeryard
streams
wetlands
early succession
riparian
ledge
bear wetland
vernal pool
significant community

CHU# 6

General Habitat Information

- 1011 acres total
- 793 acres of core habitat
- 1429' mean elevation
- Moderately high horizontal diversity

Specific Wildlife Features

This Wildlife Unit has a substantial area of deer winter habitat, floodplain/riparian streamside habitat, and well as mast stands and wetlands with a high potential for bear use. American beech stands exhibited signs of both recent and historical use.

CHU6 also contains vernal pools and a locally significant wetland community. The area has diverse vegetation and several areas of heavy forest cutting resulting in berry patches which are likely used by wildlife. Extensive moose sign was observed in this area.

Features Present:
core
deeryard
streams
wetlands
early succession
riparian
mast
bear wetland
vernal pool
significant community

CHU# 28

General Habitat Information

- 367 acres total
- 230 acres of core habitat
- 1083' mean elevation
- Low horizontal diversity

Specific Wildlife Features

CHU 28 stretches into Warren in the south, but its forested extent is limited by the presence of farmlands. The area has extensive deer winter habitat (the Folsom Brook section is very steep and could also be a focus of wildlife movements across the Mad River and Route 100). This parcel extends uphill from Route 100 containing forested riparian habitats that provide winter deer habitat and wildlife movement possibilities.

Features Present:
core
deeryard
streams
wetlands
bear wetland

West-facing CHUs Dominated by Deer Winter Habitats

CHU's 16, 22, 24 and 28 are all relatively small habitat areas that are mapped almost entirely as deer winter habitat. In addition, they are all facing into the sun (largely south or west) resulting in a warmer microclimate than areas facing north or east. These relatively small areas may receive a disproportionately high use by wintering deer because of their favorable aspect. These areas require field verification of deer winter habitat use.

Wildlife Habitat in Smaller CHUs

Contiguous Wildlife Units 3, 4, 5, 7, 11, 14-17, 18, 22, 24, and 25 are small enough that core habitat is non-existent or relatively small in extent. These CHUs may contain special wildlife elements such as aquatic habitats, wetlands, ledges or special food plants that can be utilized by a wide-variety of wildlife species. In many cases these smaller forested habitats will not provide year-round habitat for larger species such as bear or moose, but these larger mammals may be utilizing these habitats seasonally. Animals such as woodchuck, red fox, skunk, raccoon, deer, snowshoe hare, mice, moles, voles, amphibians, reptiles and the more common bird species live in these smaller wildlife units. These areas are of greater value to wildlife when they have higher vegetative diversity, or special habitats such as ledges, vernal pools, ponds, and streams that connect them to other wildlife habitats.

Small Unit's can be important to animals traversing the landscape and moving between larger core areas. Smaller units (such as CHU 11, 16, 24, 25 and 28) can serve as travel corridors for these animals in transit. In some cases these relatively small forested units may link Fayston and Waitsfield with other nearby towns.

Habitat units 5, 10-11, 17-19, 23, 25, 27, and 28 have substantial areas of forested riparian habitat. These areas may be used by wildlife moving throughout the landscape. The cover provided by these forests is often dense and facilitates seasonal and annual migration by wildlife. Cover provided by riparian forests and other plant communities is utilized during wildlife movements and can help animals escape people, predators and other obstacles during this vulnerable period in an animal's cycle.

In other cases, these smaller forested areas may be near a population center with major roads and may provide for some opportunistic wildlife viewing opportunities. CHUs 10, 11, 14, 15, and 16 are forested areas populated areas near Route 100 and may serve a wildlife viewing function.

Small Wildlife Habitats in the Mad River Valley

Wildlife can be found throughout the Mad River Valley including near villages, and houses, in farm fields and along hedgerows and near small streams and woodlots. In the more agricultural settings, sightings of deer, red fox, skunk, groundhogs, and wild turkey are most likely a common occurrence. These same species are also occasionally spotted close to villages and more developed areas in the Valley. Maintaining small woodlots, wooded streamside habitat, and hedgerows in agricultural fields is vital to the continued utilization of these areas by this suite of wildlife. These environments are critical for the majority of the residents to continue to observe wildlife where they live.

Management Recommendations for Wildlife Habitat

Large Contiguous Habitat Units: The Core Habitat Units described above are areas with large core size, substantial forest interior habitat and generally a wide-diversity of wildlife habitat elements. They provide important habitat for large, wide-ranging wildlife such as black bear as well as specific habitat features critical for a wide variety of other species.

- Forest fragmentation in these larger CHUs should be discouraged. Roads, housing and most other human activities should be restricted to the periphery of these units.
- Forest management activities that support a diversity of forest and early successional natural communities are an appropriate use of these areas.
- Connections between the various wildlife habitats/elements within the units should be maintained.
- To maintain deep forest habitat for many declining songbirds, heavy forest cutting which promotes the development of edge conditions should be limited in these areas.

High Elevation Bird Habitat: High elevation songbird habitat is found in CHUs 1, 13, and 19. Bicknell's thrush and other high-elevation birdlife may nest in the higher elevations (generally above 2700 ft) within these units.

- Any forest removing activities proposed for areas above 2700 ft should be assessed by a professional biologist to ensure the minimization of impact to Bicknell's thrush breeding habitat.

Bear Habitat: Black bear require extensive remote areas to meet their yearly habitat requirements. Large, non-road areas must be preserved to maintain sustainable populations within the Mad River Valley. Bears must continue to have access to mast stands and forested wetlands. Bear habitat management can also focus on beech stands that have documented bear use (see Wildlife Habitat Elements Map included in the Appendix).

- Mapped beech stands and forested wetlands utilized by bear should be protected from development activities with buffers ¼ mile in extent. A professional biologist should address potential impacts to bear and their populations in these cases.
- Harvesting of beech that shows current or historic use by bear should be discouraged.

Ledge, Talus, and Cliff Habitats: Ledge, talus and cliff habitats are utilized by nesting birds, resting wildlife, and in some cases denning bobcats and porcupine.

- Human development activities should be discouraged on and near ledges, talus, and cliffs.
- A minimal 100' buffer should be maintained between these habitats and human development activities.

Deer Winter Habitat: These habitats are critical to the survival and maintenance of deer populations in the Mad River Valley. Without deer winter habitat preservation, deer populations within the Valley could decline.

- Deer winter habitats identified in this report should be protected from human activities by 300' buffers.
- A professional biologist should assess potential impacts from human development activities (except forest management activities) proposed within 300' of deer winter habitats.

Forested Riparian Communities: Forested riparian habitats offer important wildlife habitat and provide cover for wildlife movement.

- Wherever possible, forested riparian communities should not be fragmented by human activities.
- Forest management activities in forested riparian communities should utilize selective harvesting techniques only and maintain a continual forest cover.

Grassland Habitat: Grassland habitats were not a primary focus of this project, although a preliminary mapping of likely suitable habitat areas was completed. Further evaluation of the presence and use of this declining habitat type should be conducted within the two towns, and opportunities for conservation explored. Additionally, management of grassland areas should be encouraged in ways that is conducive to the reproductive success of the species that rely upon it whenever possible. Management strategies in should include delayed mowing (after July 15th) and bi-annual rather than annual mowing.

Travel Corridors: Functioning travel corridors allow for the movement of wildlife across the landscape. Conservation of wildlife travel corridors is often a difficult undertaking in that much of the negative impact to these features happens slowly over time. The affect on a particular corridor from one residential development, for example, may be small. Over the years, however, as more small development occurs, the once functioning travel corridor may receive less use and eventually disappear. Concrete management recommendations for the travel corridor presented here are, therefore, difficult to develop. The following steps, however, will increase the knowledge about the specific corridors in the towns and enable planners to draw more specific conservation guidelines.

- Conduct field verification studies to identify and characterize the important travel corridors within the Mad River Valley and especially those presented in this study.
- Prioritize the importance of these travel corridors for conservation action.
- Take steps to conserve the most important travel corridors by creating isolation buffers around them to maintain wildlife movement patterns.
- Limit development to the outside edge of corridors and encourage screening, natural color schemes and other actions to limit negative effects of development in or near corridors.
- Important black bear corridors are especially vulnerable and may require buffers of up to ¼ mile in extent.
- Improve vegetated buffer conditions along the Mad River and its tributaries to provide protected movement opportunities for wildlife.

7.0 Conclusions

The Mad River Valley provides habitat for a wide-variety of wildlife, including bear, moose, deer, fox, coyote, fisher, bobcat, mice, voles, and moles, abundant birdlife, a variety of amphibians and reptiles. It is home to a wide variety of upland and wetland natural communities. Waitsfield and Fayston have undertaken this investigation to better understand the nature and specifics of their natural resources and to plan for protecting these resources for their own sake and to enhance the quality of life for it's residents.

The quality of life in Waitsfield and Fayston is uniquely tied to the condition of the natural features in the towns. It is the clean water to fish and swim in, the woods to walk and hunt in, and the clean air to breathe that makes this area an attractive place to live and work. We are hopeful that the towns in the Valley will use the information within this report to carve out a home for wildlife, woods and wetlands as well as its citizens.

What we have presented in this report is essentially a snapshot of a dynamic landscape, the Mad River Valley, where habitats and people will push up against each other for some time to come. Hopefully the information contained here will inform the citizenry, developers, and town planners in the Mad River Valley and provide a basis for informed decisions that will promote conservation and human activities side by side. The natural resource inventory process is an ongoing endeavor constantly in need of fresh information. It is our hope that over the years, towns in the Valley will continue to map and assess their natural features and add to this snapshot in time.

8. References

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All photos and figures by Arrowwood Environmental.

