

CENTRAL HILL SECTION

Landscape Level Elements

CONTIGUOUS LANDS

As we move west, the land becomes steeper, the areas of contiguous forestland are larger, and there are few acres under cultivation.

There are three separate unfragmented forest areas in this region. The southernmost contains Black Mountain. With 1,111 acres of contiguous undeveloped land, this area is the third largest in Dummerston. The Nature Conservancy has conserved 345 acres on Black Mountain.

To the north of Black Mountain is Prospect Hill. This centrally located block contains 703 acres of unfragmented forest. Of these, 260 acres are conserved (69 with a "Forever Wild" designation). This includes the town-owned summit of Prospect Hill.

In the northwest corner, with 1,159 acres, is the largest contiguous area in Dummerston. This is an area of very irregular shape, so it has more edge and less remote forest habitat than an area of a similar size but more regular shape would have.

This block is in an important location for maintaining connections to forestland in Newfane, Brookline, and Putney. To the north, the Putney Mountain/Pinnacle ridge extends for more than 30 miles, and much of the ridge has been conserved. Narrow undeveloped sections of land connect this block to large blocks to the south and east in Dummerston.

CONNECTING LANDS

Route 30 poses a major impediment to the movement of wildlife to and from the large tracts of land to the south. Amphibians and reptiles, bears, and small mammals are among the species likely to be deterred (or unsuccessful). The bridge over the Rock River offers safe passage to wildlife willing to move in the river or along the rocky area next to the bridge abutments. Improving this area as a wildlife corridor should be considered as this decisions are made about swimmer access.

One of the most important and perhaps most imperiled connections in Dummerston is located between the Prospect Mountain area and the northwest. Here the strip of connecting lands is already narrower that would be ideal for some species. Fortunately, the road here is a Class 4 (unmaintained) so vehicular traffic is slow and infrequent.

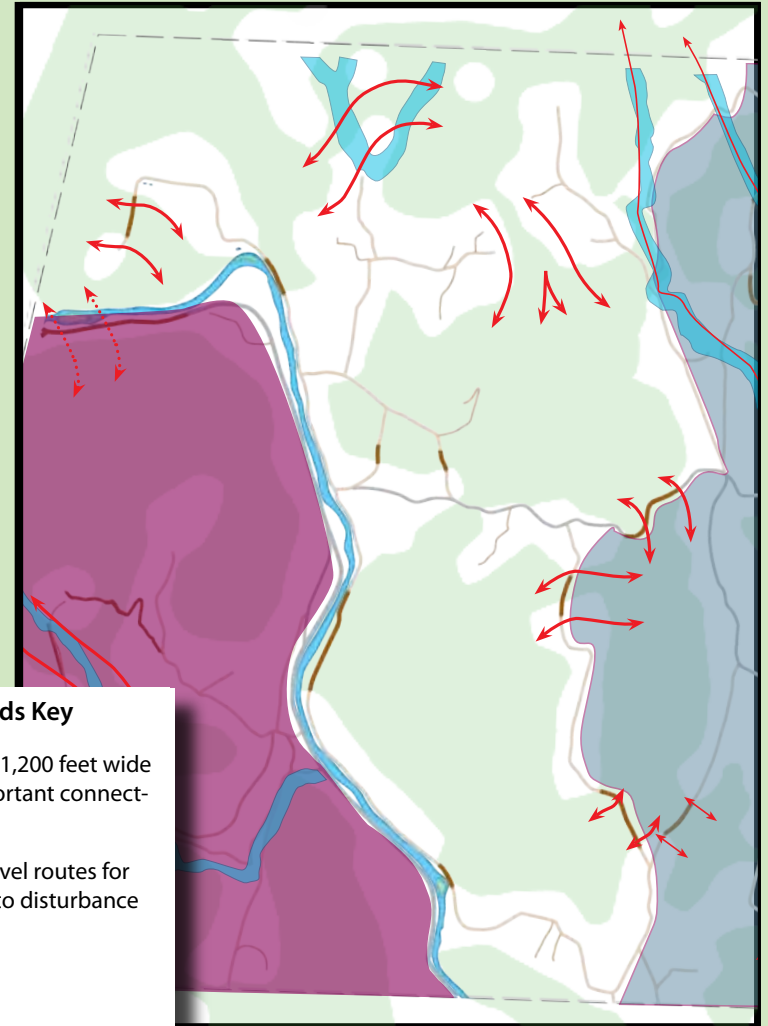
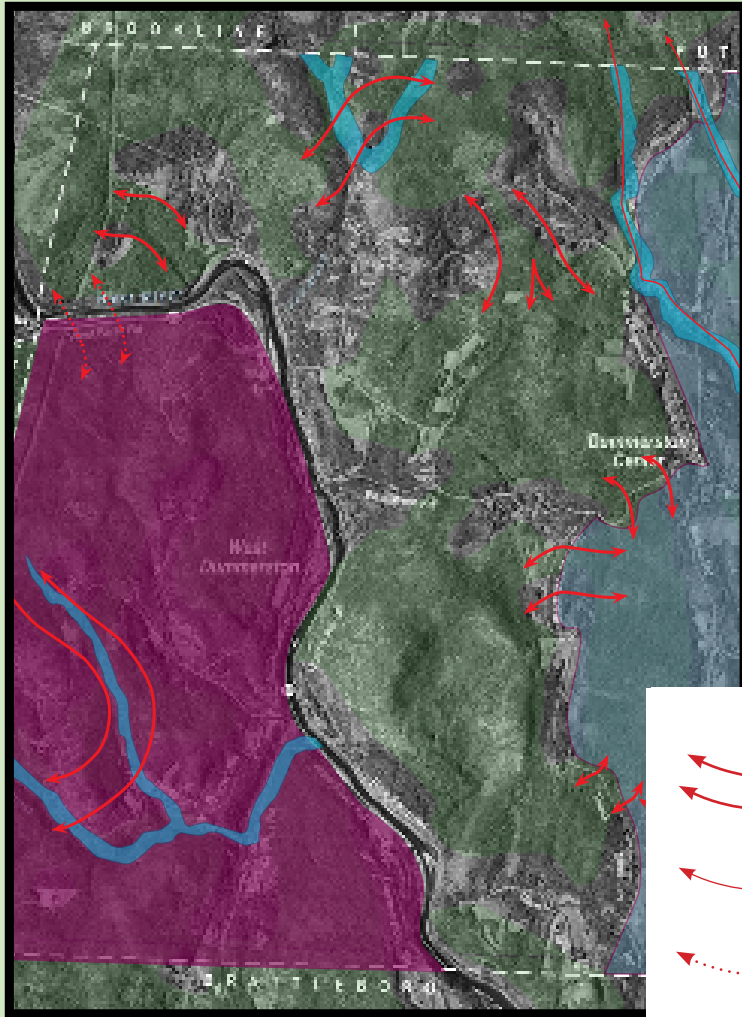
The northern stretches of Fall Brook, Salmon Brook, and Canoe Brook are largely undeveloped, and provide important travel corridors for mink, otter and other mammals, as well as trout and other aquatic species.








View from Black Mountain

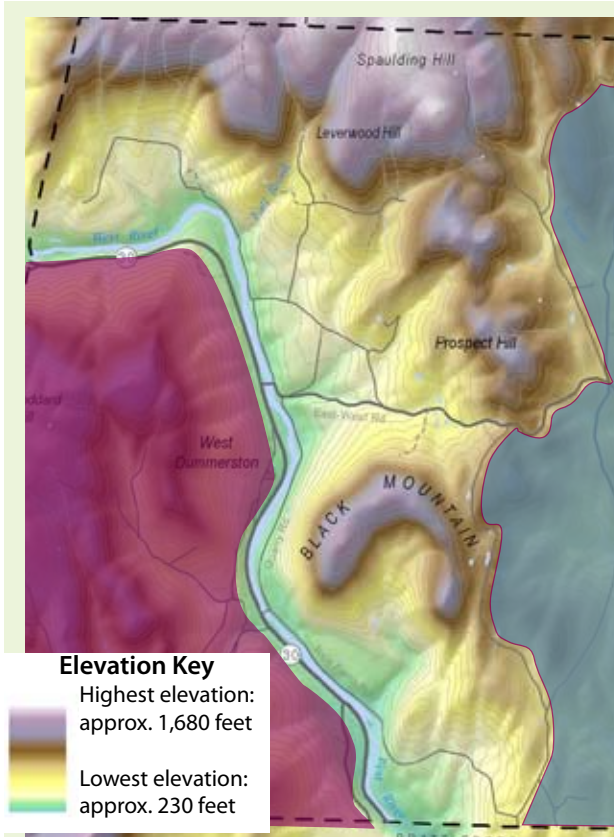
CENTRAL HILL SECTION

Contiguous Lands & Connecting Lands Two Views

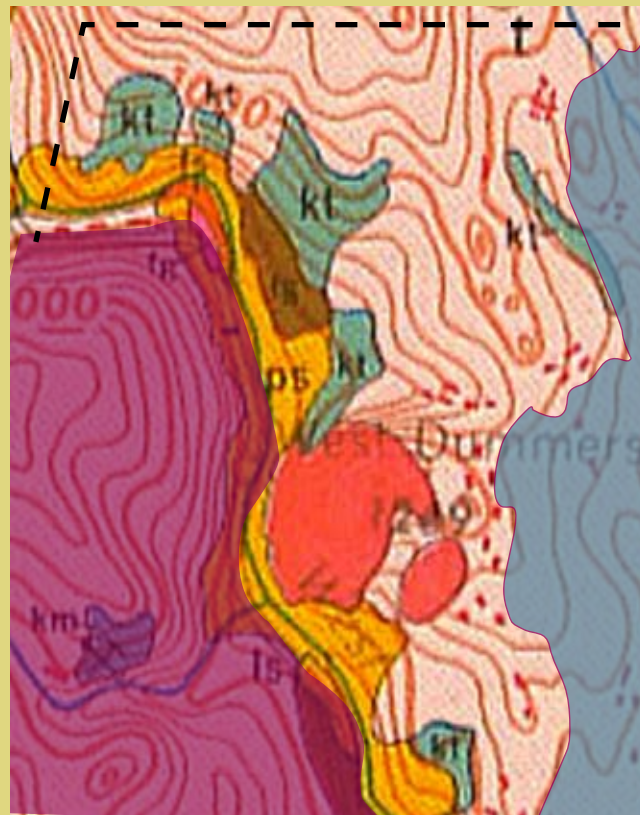


Contiguous & Connecting Lands Key

-  Paired arrows delineate areas 1,200 feet wide that are likely to serve as important connecting habitat
-  Single lines show potential travel routes for species that are less sensitive to disturbance
-  Important connecting land, needs improvements
-  Areas at least 600 feet from a structure
-  Important riparian corridors



Elevation



Surficial Deposits

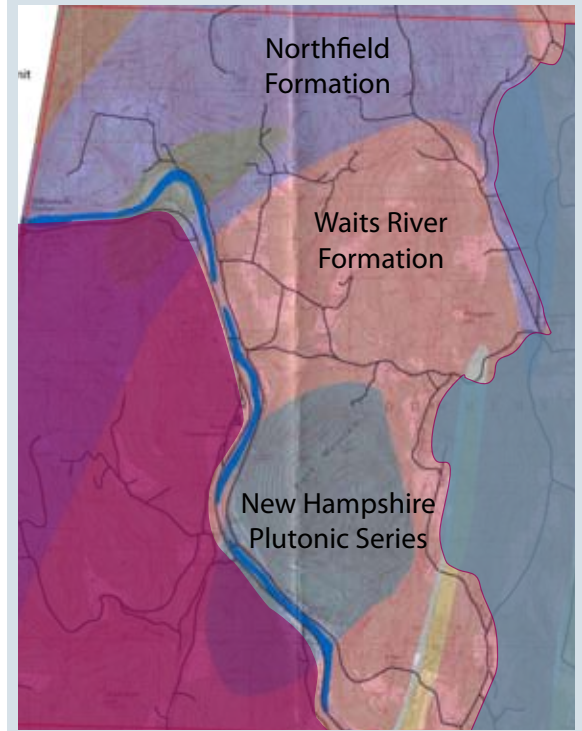
Surficial Deposits Key

- Till
- Bedrock exposure
- Well-sorted littoral (lake shore) sand, no pebbles
- ps* Pebbly sand, lake shore deposit
- kt* Kame terrace, ice-contact outwash gravel
- Post-glacial fluvial gravel
- lg* Gravel, horizontally bedded lakeshore deposit

Surficial Geologic Map of Vermont, 1970, C.G. Doll, Ed.

Important Bedrock Formations

- Waits River Formation:** calcium rich
- Northfield Formation:** some calcium enrichment
- New Hampshire Plutonic Series:** granite, acidic



ENDURING FEATURES

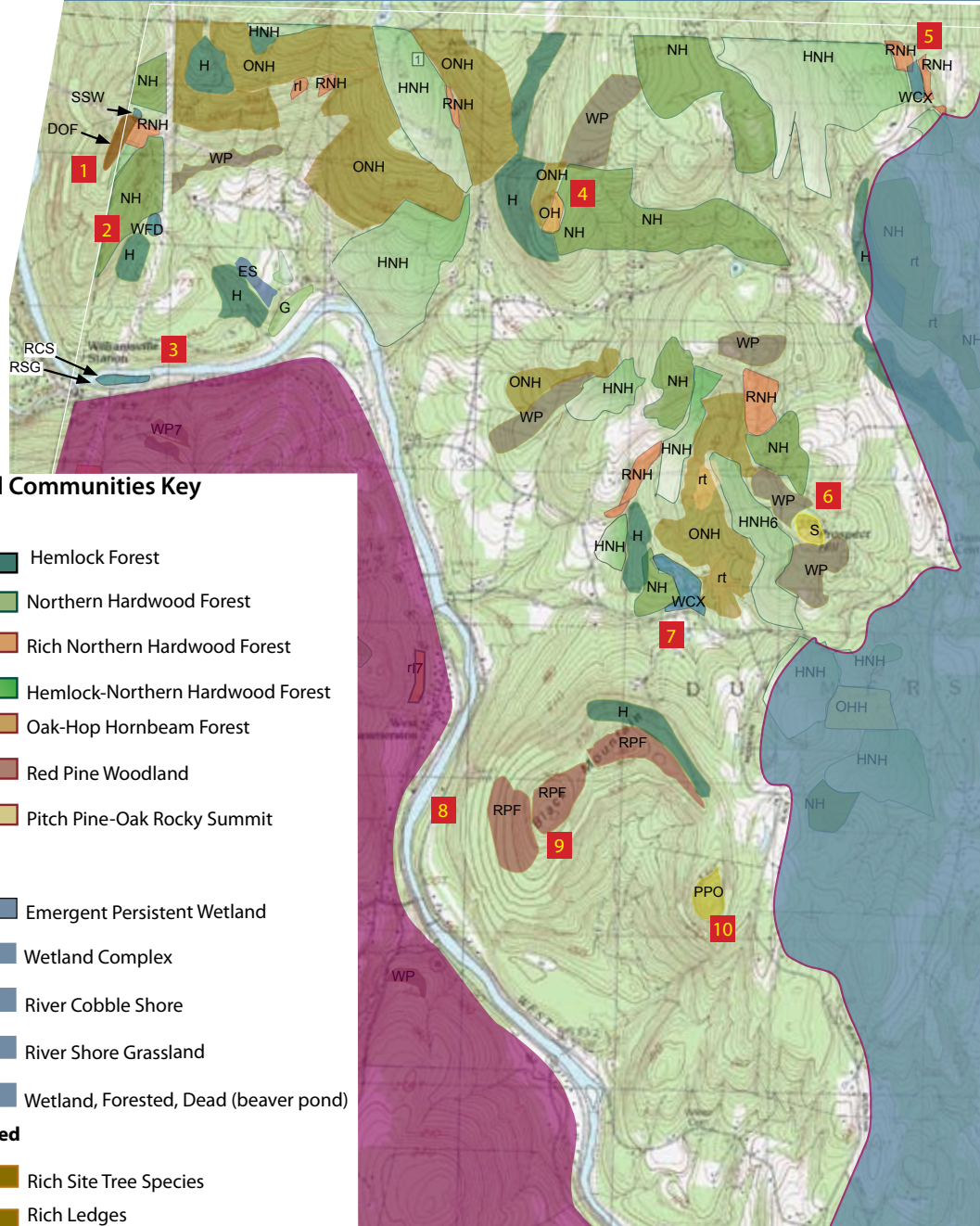
In this section we find some of the enduring features that make Dummerston’s landscape so special: the West River, Black Mountain, Prospect Hill, and the southern end of Putney Mountain. Agricultural land gives way to forest land as we move east-to west-into this section of the town.

The West River Valley is rich in sedimentary deposits, including recent alluvial deposits from the river, and glacial and fluvial deposits from the time when this area was beneath Lake Hitchcock. Stepped terraces mark the historical depositional environments.

Highest on the hillside are the kame terraces, gravel and cobble deposited by meltwater flowing along the side of the receding glacier. Lower terraces of pebbly sand show former shorelines. These sands and gravels tend to be well drained and a number of Dummerston’s rare plants are found on these deposits.

In this section we find the granite of Black Mountain (New Hampshire Plutonic Series) adjacent to the soft, calcium enriched Waits River Formation. Each hosts a different flora and contributes to the richness of natural communities in Dummerston.

Central Hills Natural Communities



Community Level Elements

NATURAL COMMUNITIES

This section of town has the greatest diversity of natural communities, and some of the most important wildlife habitat. The West River and Black Mountain are the enduring features that are largely responsible for increasing the variety of small and large patch communities in this section. Several of these have been listed as significant by the Nongame and Natural Heritage Program.

As with the rest of town, steep slopes or sunny hillsides where soils are drier host a matrix forest of oak-northern hardwood forest. Rich ledges and rich northern hardwood forest appear in a number of places. Prospect Hill, on Waits River Formation bedrock, has many pockets of richness, and the bitternut hickory, white ash, and basswood trees that thrive in sweet soils grow well on many parts of the mountain.

The well-drained sedimentary deposits above the river support forests with white pine as a dominant in the canopy.

Ten areas where clusters of communities are found are looked at more closely in the photo section that accompanies the communities map.

WETLANDS

The steepness of much of the land in this section is not conducive to the formation of large wetlands, and this section of town has even fewer than the rest of town. A few wetlands were visited as part of this project, and are described in the following section.

1 Putney Mountain Foot

This area along the northwest border has a number of interesting small patch communities. A dry oak forest along the ridge extends into Brookline. A small wetland complex here is part classic woodland depression vernal pool, but is spring fed and drainage might hold water year-round. Buttonbush, *Cephalanthus occidentalis*, occurs in this wetland, the only place in Dummerston we encountered it.



Joe-Pye weed and other wetland plants growing near the pond

2 Beaver Pond and Ledges

This small pond is in the powerline right of way. Beaver have augmented the pond in the past, though none were in residence at the time of our visit. The landscape to the southwest of the pond has varied topography, with steep ledge outcroppings. Porcupines have resided here for many generations. A classic woodland depression vernal pool with many wood frog and spotted salamander egg masses is located between the pond and the ledges. Jefferson salamander egg masses were suspected but not confirmed. The expansion of the powerline right-of-way will alter this area.



Mossy porcupine ledges



River cobble shore and rivershore grassland communities

3 River Cobble Shore and Rivershore Grassland

The seasonal West River islands below the mouth of the Rock River host two natural communities identified as significant by the NNHP, a Rivershore Grassland that has been ranked S3 (uncommon, believed to be threatened), and a River Cobble Shore, S2 (rare in Vermont).

These islands are seven to eight acres in size, and formed where the Rock River and West River converge, slowing the flow and creating a depositional environment. The shores are subject to flooding and ice scouring, and the plants that populate these communities are adapted to survive in such challenging conditions. The cobble community is adjacent to the river, and the grassland is higher on the bar where conditions are more moderate. Three rare plants are found in these communities.



John Warren examines Canada burnet on a conservation commission visit to the site

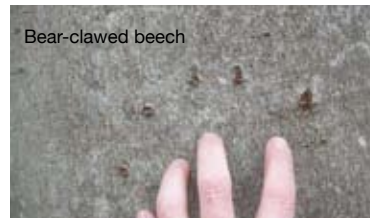
4 Leverwood Hill

The summit of this hill has a small patch of dry oak-hophornbeam forest. A number of large old pasture oaks and slender hop hornbeams create an open, park-like forest with a lawn of Pennsylvania sedge. The hemlocks on the steep south and west slopes shelter deer.



5 Wetland Complex, Rich Woods

This wetland complex can be seen from Park Laughton Road, and contains a mix of cattail marsh, alder swamp, and old beaver pond. This complex lies at the base of a hillside with several seeps that create calcium enrichment. Maidenhair fern and plantain-leaved sedge grow beneath sugar maple, bitternut hickory, and ash.



Bear-clawed beech

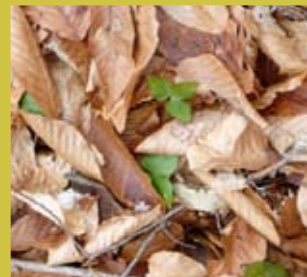


A layer of beech leaves tries to conceal the evidence of rich soils—the frosted remains of maidenhair fern, plantain-leaved sedge, and sharp-lobed hepatica

6 Prospect Hill East

Prospect is on Waits River Formation bedrock, and its influence can be seen in the bitternut hickories, ash, sugar maple, and basswood that grow on the mountain. Because most of the mountain was heavily grazed, the rich soil flora is not as diverse as can be found in other parts of the town. There is one moist hillside on the eastern side that was maintained as sugar bush, and here maidenhair fern, hepatica, wild ginger, and rich-site sedges (*Carex plantaginea* and *Carex platyphylla*) can be found. Three beech trees that have been

climbed by bears are found in the same area. A few vernal pools are found in the proximity of the prospect summit, including a classic woodland depression pool that can be seen from the new trail the Dummerston Trails Committee has made on Prospect Mountain.



7

Prospect Hill South

Rich site trees are found in many parts of these woods, but the understory flora shows little evidence of nutrient enrichment. This could be the result of historical agricultural activities at this site. Rich site indicators are still found on bedrock in this area, and include fragile fern and ebony spleenwort. Beavers have contributed to the development of a wetland complex that can be seen to the north from East West Road. A series of former ponds are in various stages of old pond succession, including shrub swamp, cattail marsh, sedge meadow and cattail marsh. Many of the shrubs in this wetland complex are invasive honeysuckles and buckthorn. No beavers are active in this area as of this writing.



Old barn foundation is part of the evidence of this areas past

Fragile fern



White pine begins to creep back into drying meadow

Areas that still hold water now function as vernal pools



8

Riverside Outcrop

Riverside outcrop communities are located in zones where the rock is frequently scoured by water and ice. Pockets of nutrient-rich silt accumulate in the rock. Some very specialized plants can grow in these conditions. The NNHP has mapped this as a significant natural community. The outcrop is located at the contact between Black Mountain granite and the Waits River Formation. It is considered a good example of this community type, and is ranked S3.

9 Red Pine Woodland



Granite and mountain laurel beneath the red pine woodland on the west side of Black Mountain

Many red pine stands in Vermont have been planted, and such forests are not natural communities. Red pine woodlands do occur naturally on the drought- and fire-prone ridges of Black Mountain. The Nongame and Natural Heritage Program considers these areas to be significant. They are rare statewide, and are ranked S2. The woodlands found on Black Mountain are large and there is little human disturbance. This forest community is found along the ridge, and in an expanse of about 100 acres on the steep western slope. Pitch pine, red oak, and white oak are also common canopy trees. Blueberry, huckleberry, and mountain laurel are abundant understory shrubs.



Red pine woodland



Mountain laurel

Roger Haydock describes Black Mountain geology amidst pitch pine on summit



10 Pitch Pine-Oak-Heath Rocky Summit

This site, the popular destination for hikers on Black Mountain, is ranked S1 in Vermont, and is considered to be an excellent example of this community type. Pitch pine, *Pinus rigida*, is a fire adapted tree. Its cones open when subjected to heat, and the seeds germinate in the nutrient poor pockets of mineral soil found on this granite dome. Pitch pine is the most abundant tree on this summit, and shares this open woodland with scrub oak, *Quercus ilicifolia*, red pine, and white pine. Mountain Laurel, blueberry, and huckleberry are abundant shrubs. Both scrub oak and mountain laurel are rare in Vermont.

RIPARIAN AND AQUATIC FEATURES

The West River is classified as a "Priority Aquatic Feature" by the Vermont Biodiversity Project. With its rocky bottom, fluctuating water levels, and spring-time ice scouring, it creates habitat for a number of specialized plants. It is one of the rivers where Atlantic salmon fry are released each spring as part of the project to restore the population.

Three small streams drain into the West River from Putney Mountain. Falls Brook, Salmon Brook, and Canoe Brook are larger brooks. Falls Brook is a high gradient stream that flows through a steep-sided valley. Salmon Brook, in this northern stretch of town, flows on a low gradient through a forested valley. These stream segments are largely undeveloped. Salmon Brook, in particular, offers an inviting corridor to the north for larger mammals. This short stretch of Canoe Brook flows through the wetland complex on Park Laughton Road. While it also flows through a stretch of agricultural land, the streamside vegetation is shrubby and dense and provides good cover for wildlife and shade for the brook.

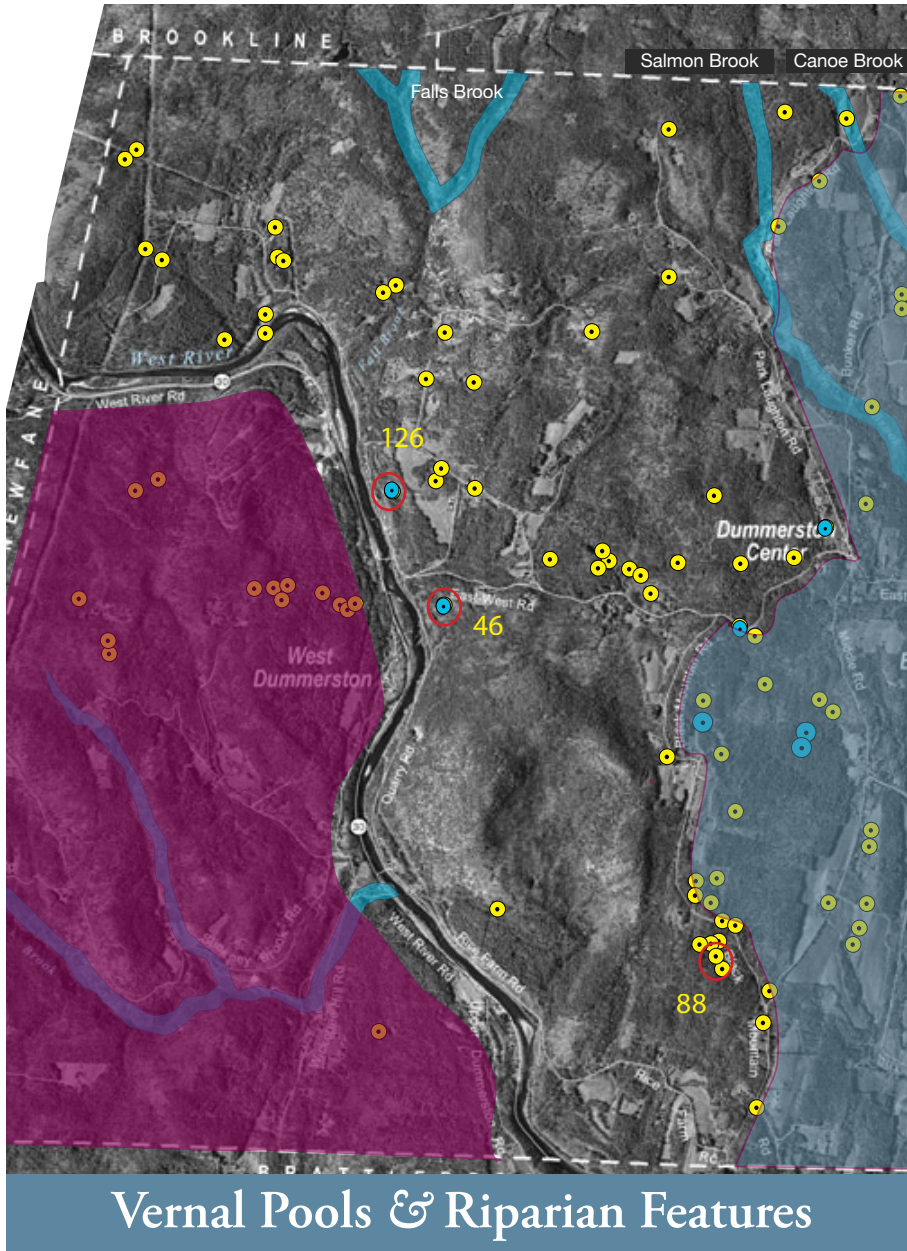
VERNAL POOLS

Forty-nine vernal pools have been mapped and measured in this section of Dummerston, and it has been surveyed pretty thoroughly, however most pools were only checked for wood frogs. Ecologically significant pools have yet to be identified in this area. A number of the pools here are part of the ongoing vernal pool monitoring project, so we will soon have counts of other species' egg masses. Black Mountain needs further survey work.

Ecologically Significant Pools

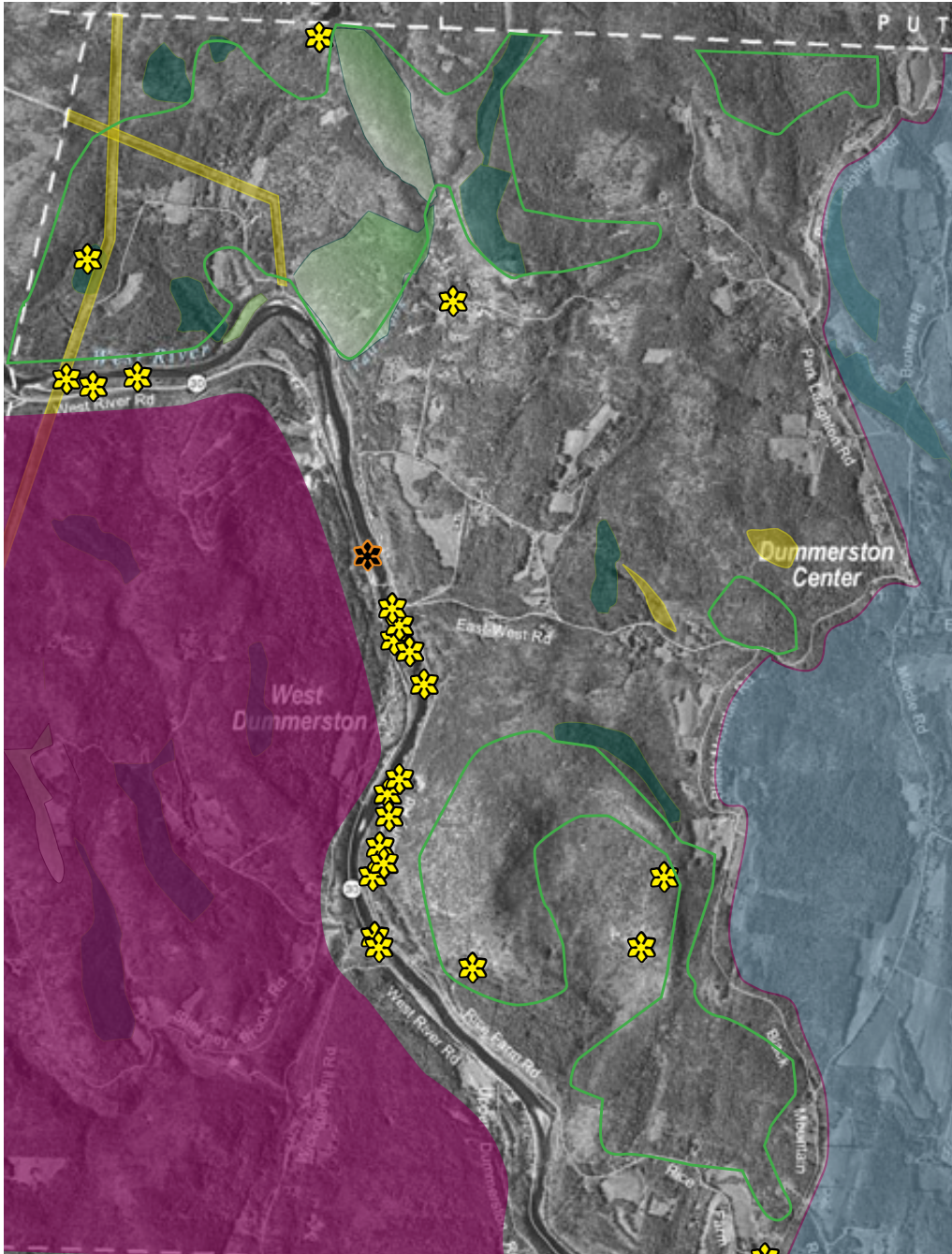
VP#	Wood Frog Masses	Spotted Masses	Jeffersons Masses
46	250	35	8
126	139	90	2
88	67	0	TNTC*

*TNTC: Too numerous to count (possibly because visibility was poor, but large numbers were seen)









Key

- Vernal pools
- Vernal pools with Jeffersons salamanders
- Ecologically significant vernal pools
- Significant riparian areas



Species Level Elements

Species Level Key

-  Rare invertebrate site
-  Rare Plant site
-  Hemlock Forest, possible deer wintering habitat
-  Mapped by VT ANR as deer wintering areas
-  Early successional and shrub habitat
-  Grassland and bird habitat

RARE, THREATENED AND ENDANGERED SPECIES
 This part of town has most of the rare species. The majority of these occur along the West River or on Black Mountain. Two occur in other areas.

Species Level Elements



Shrub habitat under powerline



Grassland and shrubland on summit of Prospect Hill



Streeter's Meadow

DEER WINTERING HABITAT

The Vermont Agency of Natural Resources shows most of this region as "Deer Wintering Areas." A large deer yard that the Vermont Department of Fish & Wildlife monitors is located here on the Camp Arden property. Of the areas surveyed, the deer yard mentioned above, and the south and west sides of Leverwood Hill show clear sign of winter use by deer.

EARLY SUCCESSIONAL AND SHRUB HABITAT

The summit of Prospect Hill provides excellent shrub habitat for breeding birds. Unfortunately many of the shrubs are invasive honeysuckles. Efforts to manage invasives should consider bird nesting in the timing of shrub removal. The lowbush blueberries and huckleberries that grow in this opening are a source of fruit for wildlife, and also provide good cover for a number of small mammals and snakes. This is the type of habitat preferred by eastern racers, though none have been found on this hill.

The largest area of early successional and shrub habitat is found in the powerline right of way. While we are concerned about the herbicides used to maintain this area and about the impact of such open habitat on forest nesting

birds, there is no denying that this corridor offers valuable habitat to many species. The soil moisture varies from saturated to well drained and hosts a diverse mix of plants from both ends of the spectrum. Raspberries and blackberries are abundant.

Bear and bobcat tracks have been seen here, and bears have marked many of the powerline poles. A smooth green snake and a Dekay's brown snake were seen during the inventory.

GRASSLAND AND BIRD HABITAT

While this area doesn't have vast open fields, it has a few modest openings (5-10 acres) that might accommodate grassland birds.

Streeter's Meadow, located above the West River on a former flood plain, is a meadow that, according to the landowners, has not been mowed in at least forty years. The grassland is about 5 - 7 acres in size and appears to remain open as a result of the dense root mat produced by reed canary grass. Signs of deer were abundant. This area might also provide breeding habitat for grassland birds.



Camp Arden deer wintering area



Bobcat tracks under the powerline