

Basin 15: Passumpsic River and Moose River

Including the following sites:

Emerson Falls	Sleepers River, St. Johnsbury
Mill Brook Cascades	Mill Brook, East Haven

This watershed is in northeastern Vermont and extends from Barnet to Newark and from Sheffield to Granby. Only two waterfalls are currently reported from Basin 15, but it is good mountainous rocky country and with the same schists and granites that produce good falls in other places. We assume that there are a number of falls here that have not been mapped yet.

Report 84, Emerson Falls, Sleepers River, St. Johnsbury,
Caledonia County, Vermont.

Site not numbered by the state, visited on 21 July 1984 by P.F.
Zika.

A large wide cascade below an inconspicuous concrete dam.

Atlas map 41, USGS St. Johnsbury 15-minute quadrangle. From the junction of Route 2 and I-91, east of St. Johnsbury, follow the interstate signs north and continue past the entrance ramps for the highway. After 0.1 mile turn at the first right (southeast). Follow this dead-end road about one-quarter mile and park at the pulloff on the left (northeast). If there are too many cars there try parking about 100 yards further down on the left, behind the old Bible Institute. The cascade and river are close to the road between the two parking areas.

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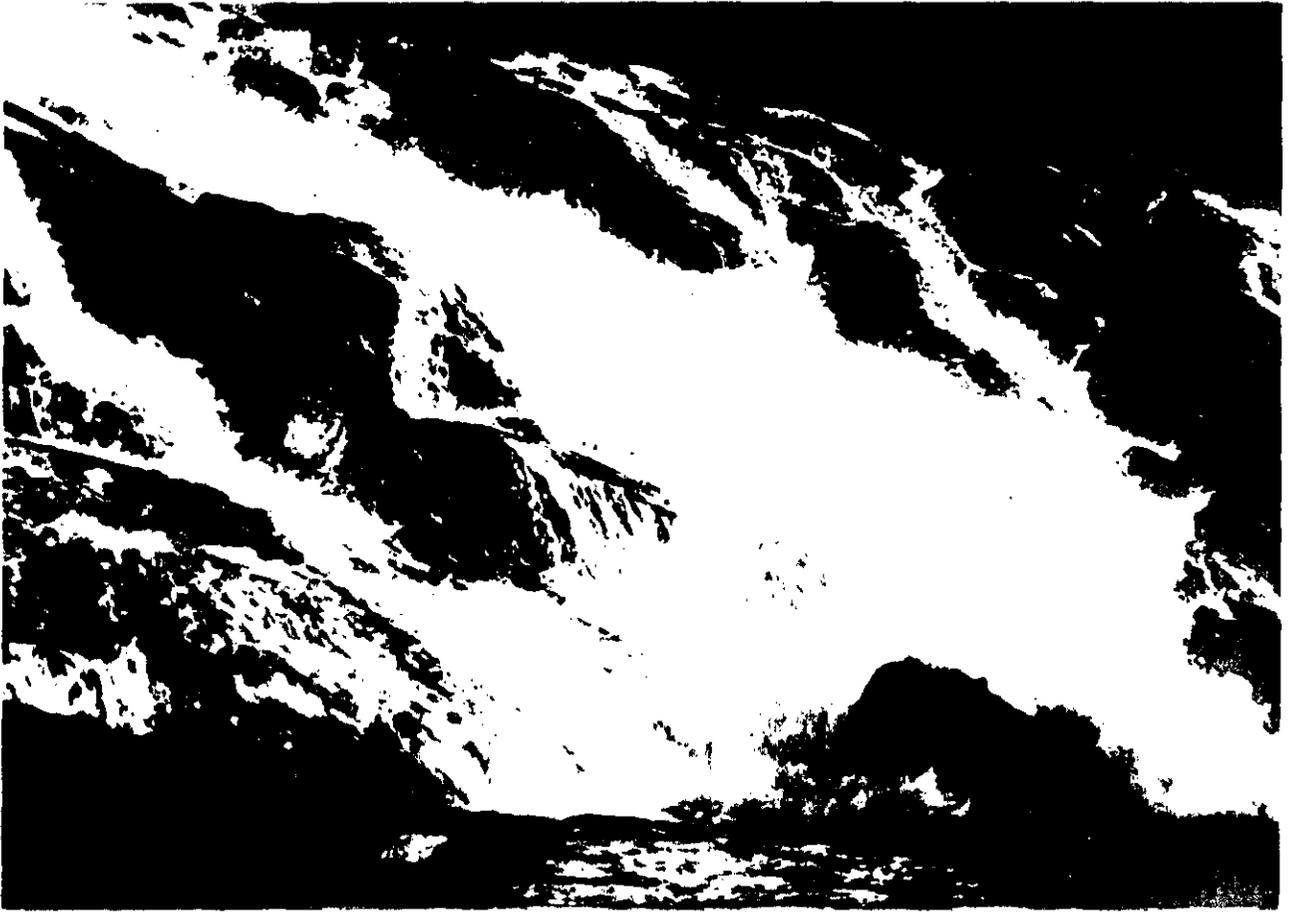
Emerson Falls are located about one-quarter mile northwest of the right-of-way of I-91, just to the west of St. Johnsbury. The north side of the stream is a dense, mixed conifer forest; the south bank has some grassy slopes and ledges with white cedar. There are two low concrete weirs near the top of the cascades and a gauging station 50 yards upstream. Downstream there are several houses, an abandoned Bible Institute which is reportedly going to get turned into an apartment complex, and then a channellized segment where the stream crosses the heroically proportioned I-91 corridor.

The Sleepers River is a moderately large alluvial stream with a width of 25-30 feet. The water is clear and clean, and in the deeper pools have a greenish tint. There is no odor or unpleasant taste. A small amount of algae grows on the riverbed rocks. The larvae of stoneflies and caddisflies were observed under a number of rocks at the base of the cascade.

About 40 yards upstream of the site is a weir made of concrete. Ten yards below this, there is an angled concrete dam with an intake for the old U.S. fish hatchery. Below this, there is a pool 25 feet in diameter, and then a steep cascade about 40 feet wide and 35-40 feet high. In the summer, the flow over the cascade breaks up into many separate small cascades, all very noisy and pretty.

At the base of the main cascade, the water runs around an island and runs through several low cascades about three feet high, and into deep pools.

At high water the flow apparently expands and the width of the main cascade is doubled.



EMERSON FALLS

The bedrock at the cascade is a resistant grey quartzite called the Crow Hill member of the Devonian Waits River formation. From the plants, we judge that there is some lime mixed with the quartzite. The rock tends to disintegrate in chunks, leaving jagged corners for the river to tumble over and supplying bathers with zig-zag staircases between the pools at the upper and lower ends of the site. The river has not smoothed the bedrock much, and there is little sculpture save for some rippled rocks and a few potholes about a foot in diameter.

The vascular plants and bryophytes at Emerson Falls are typical of wet limy sites in this part of the state. No unusual species were observed.

At the time of the visit, several families with small children were bathing in the pools, and a number of other people were sunning themselves on the ledges. From below some of them resembled walruses. There are a few fire rings around the perimeter of the site, and the island at the base of the main cascade is well trampled, suggesting that the site is popular for picnics and parties. The stream is used by fishermen. The parking area would benefit from a trash barrel.

Despite the weir above and buildings below, the cascades are very natural-looking, and quite pretty. The water quality is quite good, and the site is a fine and popular swimming hole. We rate it as highly important as a natural feature and recreation area.

This is one of the few large cascades in the state offering such clean river water for swimming so close to a municipal center. Emerson Falls is only a five minute drive from downtown St. Johnsbury, but it is unmarked and unpublicized, so apparently only the locals know which dead-end road to turn down to find it. If the land could be purchased it would make a small but effective municipal or state park.

The site is threatened with a hydro power proposal. Any decrease in the summer flows and any construction along the bank of the river would have a severe impact on the recreational value of Emerson Falls. In addition, lowered flows would probably have an adverse effect on the downstream fishery. The Water Resources Department has issued a "401" permit for this project, which provides for minimum flows to protect the fishery. How much this will effect the swimming we are unable to say.

Recommendations: Install a trash barrel. If possible, convert this into a formal scenic and recreation area.

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Summary: Rural setting, average rocks, average biology, not wild or secluded, but rather a nice family swimming hole, some

trash, clean water, good bathing, popular for picnics and parties, a local scenic attraction, a nice place to sit and sun, threatened with construction and flow decreases.

HIGH IMPORTANCE: Clean water, excellent swimming hole, large handsome cascade, pretty place.

Note: Hydro project has been developed since this was written.

Vascular Plants at Emerson Falls

<i>Thuja occidentalis</i>	<i>Pinus strobus</i>
<i>Tsuga canadensis</i>	<i>Tilia americana</i>
<i>Betula alleghaniensis</i>	<i>Ulmus americana</i>
<i>Populus tremuloides</i>	<i>Fraxinus nigra</i>
<i>Acer spicatum</i>	<i>Cornus stolonifera</i>
<i>A. rubrum</i>	<i>Lonicera canadensis</i>
<i>Alnus rugosa</i>	<i>L. X bella</i>
<i>Corylus cornuta</i>	<i>Rubus occidentalis</i>
<i>Salix rigida</i>	<i>Prunus virginiana</i>
<i>Equisetum variegatum</i>	<i>Cystopteris bulbifera</i>
<i>Hieracium piloselloides</i>	<i>Smilacina racemosa</i>
<i>Amphicarpa bracteata</i>	<i>Ranunculus acris</i>
<i>Hypericum perforatum</i>	<i>Daucus carota</i>
<i>Centaurea sp.</i>	<i>Carex aurea</i>
<i>Festuca rubra</i>	<i>C. flava</i>
<i>F. pratensis</i>	<i>C. hystericina</i>
<i>F. ovina</i>	<i>C. granularis</i>
<i>Dactylis glomerata</i>	<i>Agrostis sp.</i>
<i>Phalaris arundinacea</i>	<i>Poa compressa</i>
<i>Elymus sp.</i>	<i>Juncus dudleyi</i>
<i>Anthozanthum odoratum</i>	<i>J. sp.</i>
<i>Calamagrostis canadensis</i>	<i>Sphenopholis intermedia</i>
<i>Parnassia glauca</i>	<i>Lobelia kalmii</i>
<i>Thymus serpyllum</i>	<i>Chrysanthemum leucanthemum</i>
<i>Vicia cracca</i>	<i>Taraxacum officinale</i>
<i>Solidago canadensis</i>	<i>Tussilago farfara</i>
<i>S. juncea</i>	<i>Lysimachia nummularia</i>
<i>Crataegus sp.</i>	<i>Aster umbellatus</i>
<i>Zizia aurea</i>	<i>A. puniceus</i>
<i>Thalictrum polygamum</i>	<i>A. macrophylla</i>
<i>Fragaria virginiana</i>	<i>Eupatorium maculatum</i>
<i>Aquilegia canadensis</i>	<i>Trifolium pratense</i>

Report 85, Mill Brook Cascades, Mill Brook, East Haven, Essex County, Vermont.

Site not numbered by the state, visited on 27 July 1984 by P.F. Zika.

A long series of small cascades and pools. No dam.

Atlas map 50, USGS Burke 15-minute quadrangle. From the Town of East Burke, take Route 114 north to Lost Nation Road, which is the first right after passing the boundary between East Haven and Newark. A short distance down this dirt road, cross the bridge and park. The cascades are a short distance upstream. There is an old logging road and fisherman's path on the east side of the stream.

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The land surrounding Mill Brook Cascades is dense boreal forest, used for pulp production, hunting, and fishing. Currently there are no farms, although there is an old barbed wire fence at the top of the cascade. Except for the road and some mossy stumps from an old cut, there are few traces of man here.

Mill Brook is a small stream, about five to 12 feet wide at the site. At the time of the visit, the water was a bit brownish, perhaps because of a recent rain. There is a moderate amount of algae on the rocks near the top of the cascade, and lots of moss on the rocks in the channel. Stonefly and mayfly larvae are present at the base of the cascade series and blackflies are abundant. The water tastes good. In dry weather, the stream must get very low.

The site consists of a series of low-angle cascades with pools up to 12 feet across, with a total drop of some 150 to 200 vertical feet. At various points there are low rock walls on one side of the brook, but these are never more than about six feet high. The bed of the stream is mostly bedrock. In contrast, the banks are mostly a rough till with numerous angular and loose stones protruding, and this makes walking along the stream difficult in places.

The bedrock at Mill Brook Cascades is variable and is probably a contact zone between two or three rock types. Metamorphic layered rock near the top of the cascades (especially on the banks) is Lower Devonian phyllite or schist from the Gile Mountain or Waits River formations. A reddish, blocky stone is prominent in many places, with concoidal fractures and small caves. It is possibly greywacke or quartzite from the two previous formations, or, more likely, Devonian Standing Pond Volcanic member hornblende or lava.

The plants of Mill Brook Cascades are the normal species of northern spruce woods. Bryophytes are abundant as a ground cover in the forest. The species seen are tabulated at the end of this report.

Mill Brook is accessible by road, but it is in a part of the state distant from population and tourist centers, and is unknown and unlikely to ever receive much use. Several of the pools are deep enough for shallow bathing. There is a bit of fishing above the falls according to the report filed by the Department of Fish and Game, and it is possible that brook trout reproduce in some of the pools.

It is an attractive site. No single feature is spectacular, but the site is completely undeveloped and feels remote and undisturbed. We rate it as moderately important; there are only a few major cascade chains in the state, and while it is possible that there are others like the Mill Brook cascades in this portion of the Northeast Kingdom, until we have explored and mapped others, we have to regard it as a unique feature in this part of the state.

The site is threatened by a hydro proposal: we oppose this until we know more about how many sites of this type there really are.

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Summary: Woodland setting, average rocks and biology, wild, private, clean site, clean water, seldom visited, threatened with a dam.

Vascular Plants of Mill Brook Cascades

Betula alleghaniensis	Oxalis montana
Fraxinus nigra	Streptopus roseus
Tsuga canadensis	S. amplexicaulis
Picea rubens	Clintonia borealis
Populus grandidentata	Trillium undulatum
Acer pensylvanicum	Tiarella cordifolia
A. spicatum	Rubus pubescens
A. rubrum	Thalictrum polygamum
A. saccharum	Actaea rubra
Thuja occidentalis	Veratrum viride
Prunus serotina	Brachyelytrum erectum
Vaccinium myrtilloides	Medeola virginica
Viburnum alnifolium	Chimaphila umbellata
Taxus canadensis	Trientalis borealis
Athyrium filix-femina	Cypripedium acaule
Cystopteris bulbifera	Monotropa uniflora
Polypodium virginianum	Viola sp.
Osmunda claytoniana	Galium aparine
Thelypteris phegopteris	Pyrolla elliptica
Polystichum acrosticoides	Elymus virginiana
Gymnocarpium dryopteris	Goodyera tessellata
Prunella vulgaris	Mitella nuda
Prenanthes altissima	Aster acuminatus

Some Bryophytes of Mill Brook Cascades

Bazzania trilobata
Ptilimnium crista-castrense
Dicranum spp.
Hylocomnium splendens
Climaceum sp.