APPALACHIAN TRAIL RARE PLANT SURVEYS AND SITE MONITORING REPORT

Maine to Pennsylvania

Report Prepared for:
Appalachian Trail Park Office
National Park Service
Harpers Ferry, West Virginia

Prepared by:
Ted Elliman, Ecological Consultant
95 West View Road
Voorheesville, New York 12186

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* = map follows site summary.

SUMMARY

This report summarizes rare plant investigations and monitoring activities at 28 sites along the Appalachian Trail corridor from Maine to Pennsylvania in 2003. The field investigations at these sites took place from April through September, 2003. The goals of the investigations were to assess the current condition of the rare plant occurrences and to propose and implement management actions for their protection from human and natural impacts.

Global positioning system (GPS) points and ranges are provided for most of the rare plant occurrences observed in 2003. The GPS points are included in both the individual site summaries and in the spreadsheet of rare plant occurrences that follows the narrative.

Digitized maps, using the National Geographic *Topo!* program for the northeastern states, follow most of the site summaries (scale is 1: 30720). The exceptions are several sites also investigated in 2002 for which maps were provided in the 2002 site monitoring report (Great Falls, CT and Maple Hill, NJ, for example).

During the field season, I tried to contact and coordinate site visitation schedules with the Appalachian Trail Conference volunteer monitors for the sites where volunteers have been assigned. I owe a lot of thanks to these volunteers, who are named in the individual site summaries. The dedication, enthusiasm, and observations of the volunteer monitors have contributed immeasurably to the protection of rare plants in the Appalachian Trail corridor.

I gratefully acknowledge the help and administrative support of Kent Schwarzkopf of the National Park Service's Appalachian Trail Park Office in Harpers Ferry and of Alice Schori and Michele Miller of the Appalachian Trail Conference. My thanks also to biologists and conservation professionals who have helped with these investigations, including Bill Brumback (New England Wild Flower Society), Charles Cogbill (Ecological Consultant), J.T. Horn (Appalachian Trail Conference), Ed McGowan (New York-New Jersey Trail Conference), Don Owen (National Park Service), Casey Reed (National Park Service), Ann Rhodes (Morris Arboretum), David Snyder (New Jersey Natural Heritage Program), Paul Somers (Massachusetts Natural Heritage and Endangered Species Program), Ted Weber (Appalachian Mountain Club), and Larry Wheelock (New York-New Jersey Trail Conference).

Support for this project has been provided by the National Park Service.

APPALACHIAN TRAIL MONITORING SITES: 2003

June 17

Saddleback Mt., Maine

Site Description
Alpine ridgeline of Saddleback Mountain

Rare Plants
The distribution of many rare plant species located on Saddleback's alpine ridge is approximately the same, occurring along the two miles of open ridgeline from the south end of the main summit to the Horn.

GPS points for the northern and southern limits of *Carex bigelowii, Diapensia lapponica, Minuartia groenlandica*, and *Vaccinium boreale* are collectively given following the discussion of all the individual species.

Hierochloe odorata and *Rubus chamaemorus* have a more restricted range on the summit. GPS points for these two species follows the discussion of their occurrences.

Bigelow's sedge (***Carex bigelowii***): found all along the alpine ridge, abundant.

Diapensia (***Diapensia lapponica***): found all along the mountain's alpine ridge; common on Saddleback.

Alpine sweetgrass (***Hierochloe alpina***): Approximately 100 stems were observed, just starting to flower, in the saddle between the main peak and the Horn. The plants are in moist, open ground dominated by *Vaccinium uliginosum*. Total area covered by the plants is about 2000 square feet.

GPS of Hierochloe alpina: N 44.56.670 W 070.29.802 (1086 m. elevation).

Mountain sandwort (***Minuartia groenlandica***): Common all along the mountain's alpine ridge.

Cloudberry (***Rubus chamaemorus***): Scattered plants are found on the south side of the Horn. I counted 14 plants in flower, and nine vegetative individuals. This population occurs in an area of approximately 0.5 acre (this is undoubtedly a subset of the whole population on Saddleback) with krummholz fir, Labrador tea, and alpine bilberry.

GPS of Rubus chamaemorus: N 44.56.884 W 070.29.402

Alpine blueberry (***Vaccinium boreale***): found from the upper subalpine area south of the alpine ridgeline all the way to the Horn, in scattered clumps.

The following GPS points apply to all of the alpine populations except for alpine sweetgrass and cloudberry (given above):

south end of the alpine ridgeline: *N 44.55.631 W 070.30.835*
top of the Horn: *N 44.57.061 W 070.29.251*•

Squashberry (***Viburnum edule***) was found along the Trail in a spruce and fir stand north of Eddy Pond. This appears to be the first documentation of squashberry along the AT on this side of Saddleback. I saw approximately 20 flowering shrubs in two clusters near the footpath, in wet soil.

GPS of Viburnum edule: N 44.55.186 W 070.31.468 (807.3 m. elevation).

{NOTE: *Viburnum edule* has recently been de-listed in Maine. It is now an S4 species; Alice Schori, *personal communication 12/03*}.

GPS Datum
NAD83

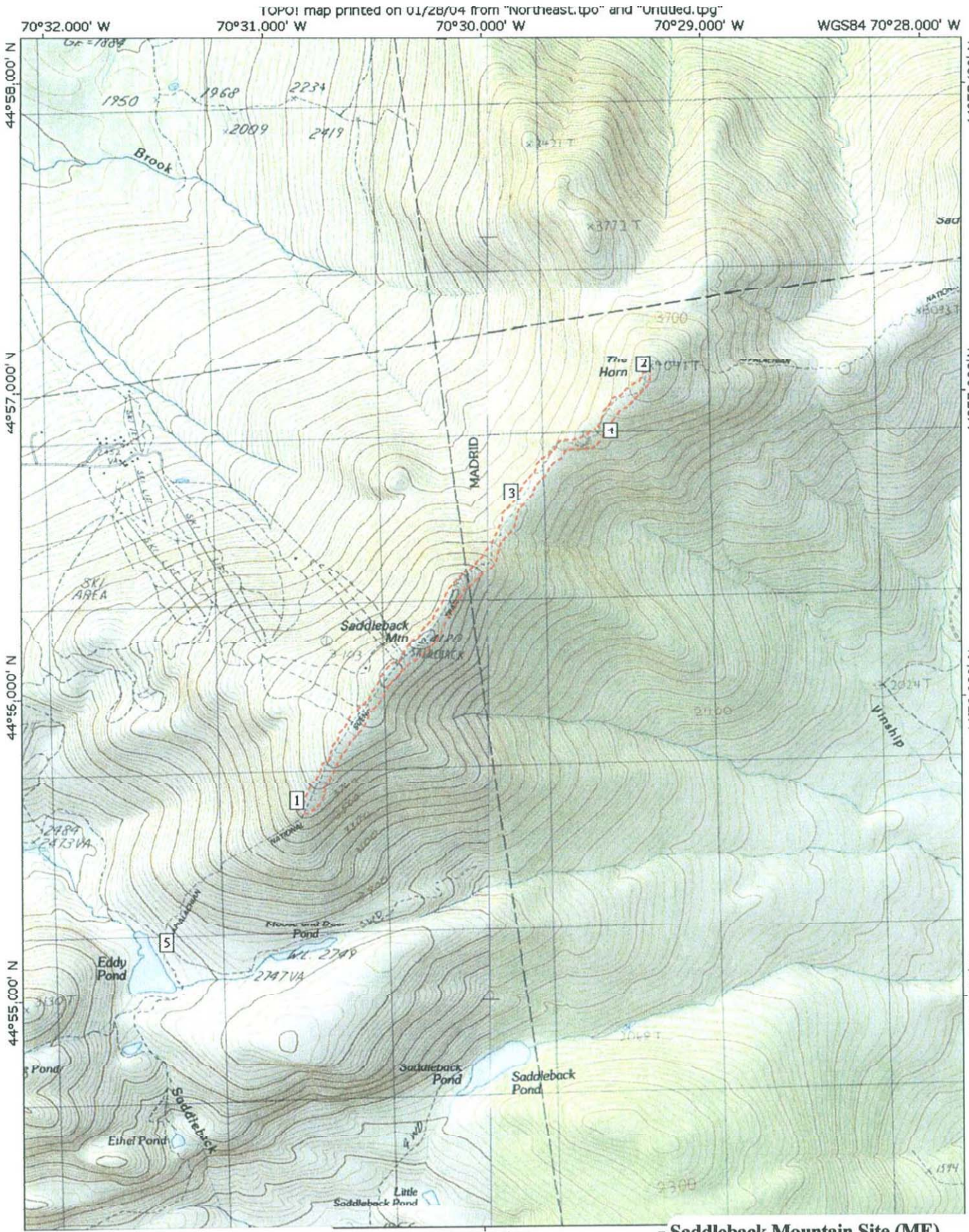
Threats

There is a limited amount of trampling damage to Saddleback's alpine flora, but the rare alpine populations are in good condition. I saw several trampled Diapensia cushions on the south end of the ridge, but overall this population is abundant and undisturbed. Alpine sweetgrass grows in a small area close to the Trail, and this population could suffer if the vegetation mat supporting the plants is damaged.

Management Actions and Recommendations

Saddleback has a varied and spectacular alpine ridgeline, with two miles of above-timberline vegetation. The mountain's rare plant populations should be monitored annually (a NEWFS volunteer may already be doing so). Scree walls along the Trail and signage emphasizing habitat sensitivity should be established in the future if monitors determine that hiker impacts are damaging the mountain's alpine flora.

• Some populations extend north of the Horn—the Horn is as far as I hiked on this day.



Saddleback Mountain Site (2) (ME)

4. *Rubus chamaemorus*
5. *Viburnum edule*

Saddleback Mountain Site (ME)

1-2. Carex bigelowii, Diapensia lapponica, Minuartia groenlandica, Vaccinium boreale

3. Hierochloe alpina

June 16

Baldpate Mt., Maine

with: Milton Wright (fortuitously)

Site Description
Alpine summit of Baldpate.

I searched West Peak first, and did not find any rare species here. Stands of small balsam fir *(Abies balsamea)* are common on this peak. Other species noted on West Peak: black crowberry *(Empetrum nigrum)*, creeping snowberry *(Gaultheria hispidula)*, sheep laurel *(Kalmia polifolia)*, Labrador tea *(Ledum groenlandicum)*, black spruce *(Picea mariana)*, rhodora *(Rhododendron canadense)*, and mountain cranberry *(Vaccinium vitis-idaea)*. Between West and East Peaks there is an alpine bog full of cotton grass *(Eriophorum vaginatum)* and sheep laurel.

Rare Plants
In the saddle between West and East Peaks there is a cluster of about 50 alpine blueberry (***Vaccinium borale***) shrubs associated with balsam fir-black spruce krummholz. The tiny shrubs were in flower. Alpine bilberry (*Vaccinium uliginosum*) is common here. Lowbush blueberry (*Vaccinium angustifolium*) is also here, but had not yet flowered.

GPS of Vaccinium borale: N 44.36.252 W 070.53.993 (1058 m. elevation).

There is more alpine blueberry on the west side of East Peak, and also along the AT north of East Peak. I believe this is a new record for this summit.

Mountain sandwort (***Minuartia groenlandica***) is scattered in small patches along the Trail in the saddle between the peaks as well as on East Peak.

GPS of Minuartia groenlandica on East Peak: N 44.36.511 W070.53.848 (1113 m elevation).

Diapensia (***Diapensia lapponica***) occurs on the highest, most exposed areas of East Peak, often on rocks almost devoid of other plants except alpine bilberry (*Vaccinium uliginosum*). There is a lot of foot traffic here, and many Diapensia cushions have been trampled—this population is badly damaged

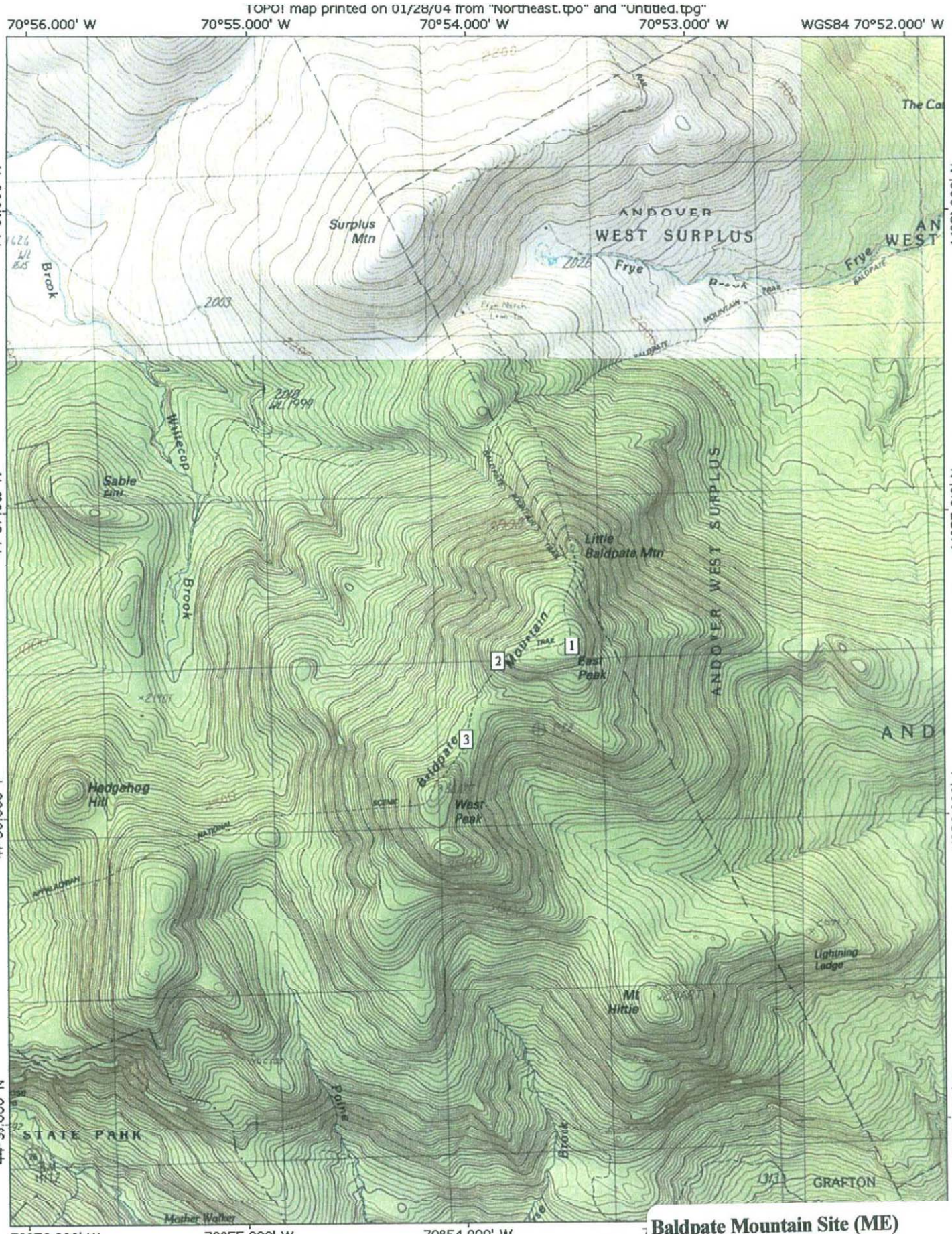
GPS of Diapensia lapponica: N 44.36.555 W 070.53.515 (1166 m. elevation).

GPS Datum
NAD83

Management Actions and Recommendations

Diapensia is in jeopardy on the East Peak. There is signage about the presence of rare plants as you enter the alpine area on West Peak (Milton Wright had put up the sign that day). This message should be reinforced by additional signage on East Peak, as well as by the placement of scree walls around the *Diapensia lapponica* cushions.

Baldpate's Diapensia population should be monitored annually when it is in flower in early to mid-June.



Baldpate Mountain Site (ME)

1. *Diapensia lapponica*
2. *Minuartia groenlandica*
3. *Vaccinium boreale*

June 15

Mt. Moosilauke, NH

Site Decsription
Moosilauke's alpine summit.

Rare Plants
I saw two patches of black crowberry (***Empetrum nigrum***) along the edge of the footpath in Moosilauke's alpine zone, approximately 0.5 mile south of the summit. The plants are associated with *Abies balsamea* krummholz and patches of *Vaccinium vitis-idaea.* There has been some trampling of *Empetrum nigrum* at the edges of the Trail. This small and vulnerable population should be monitored annually.

GPS of Empetrum nigrum: N 44.01.166 W 071.50.242.

Bigelow's sedge (***Carex bigelowii***) is abundant in the alpine zone. There are no threats to this large population.

GPS of Carex bigelowii plants at the summit: N 44.01.404 W 071.49.899.

Mountain sandwort (***Minuartia groenlandica***) grows in scattered patches along the footpath north of the summit. The plant seems to favor disturbed, compacted soils on the edges of the Trail, but stretches of trailsides are too deeply eroded for any vegetation to esatblish a foothold. Minuartia is fairly common south of the summit. The population in its entirety on Moosilauke appears to be secure, but many of the plants lead a precarious existence.

GPS of Minuartia groenlandica: N 44.01.566 W 071.49.814

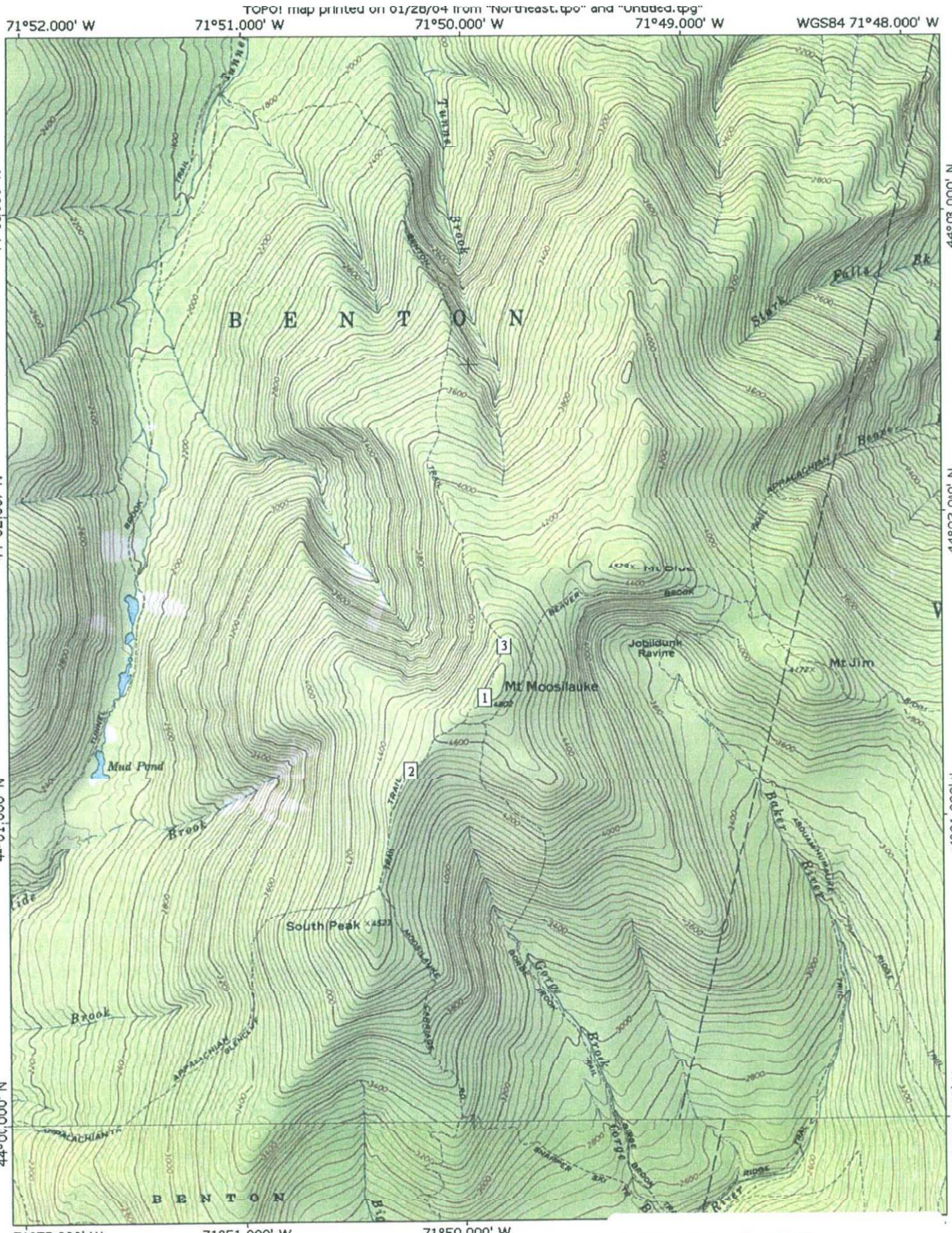
GPS Datum
NAD83

Threats
Empetrum nigrum and *Minuartia groenlandica* are threatened by trampling and trail erosion on Moosilauke.

Management Actions and Recommendations
Empetrum nigrum and *Minuartia groenlandica* should be censused and monitored annually. Signage advising hikers about the presence of rare species and sensitivity of the alpine habitat is recommended to reduce off-trail trampling. The Dartmouth Outing Club could be encouraged to become involved in the conservation of Moosilauke's alpine vegetation.

Scree walls and minor trail relocations should be implemented to protect the *Empetrum nigrum* and *Minuartia groenlandica* populations if they continue to decline. *Minuartia*

groenlandica thrives on trail edges, and a certain level of disturbance may be necessary for its persistence as a viable population on Moosilauke.



Mt. Moosilauke Site (NH)

1. *Carex bigelowii*
2. *Empetrum nigrum*
3. *Minuartia groenlandica*

17 August

Griffith Lake, Vermont

with: Alice Schori

Site Description

Open pond with bog vegetation on its fringes. Wetlands and spruce-fir-paper birch forest surround the pond.

Rare Plants

Geum macrophyllum: Numerous large-leaved avens plants are scattered on the extension of the Forest Road leading to Griffith Lake from Mt. Tabor. The plants grow in moist, weedy conditions on the roadway and along roadsides. The habitat is primarily red spruce (*Picea rubens*) and balsam fir (*Abies balsamea*) mixed with paper birch (*Betula papyrifera*). Other species include: striped maple (*Acer pensylvanicum*), large-leaved aster (*Aster macrophyllus*), swamp aster (*Aster puniceus*), yellow birch (*Betula alleghaniensis*), Bailey's sedge (*Carex baileyi*), common plantain (*Plantago major*), swamp dewberry (*Rubus hispidus*), and dark green bulrush (*Scirpus atrovirens*).

There are no threats to this *Geum macrophyllum* population. Occasional disturbance of the roadway by forest road vehicles and roadside maintenance probably favors the species here.

GPS of two clusters of Geum macrophyllum plants: N 43.17.017 W 072.57.591
N 43.17.945 W 072.57.729

Littorella americana: We found approximately 40 uprooted American shore-grass plants floating in coves on Griffith Lake's boggy northern and eastern shorelines. We saw only one rooted plant that was attached to a submerged log on the lake's northern end. Pond edge species where we found the uprooted *Littorella americana* include: speckled alder (*Alnus rugosa*), black chokeberry (*Aronia melanocarpa*), leatherleaf (*Chamaedaphne calyculata*), round-leaved sundew (*Drosera rotundifolia*), water horsetail (*Equisetum fluviatile*), boneset (*Eupatorium perfoliatum*), dwarf St. John's-wort (*Hypericum mutilum*), mountain holly (*Nemopanthus mucronatus*), and purple St. John's-wort (*Triadenum virginicum*).

It was not clear whether these uprooted individuals would re-root to an aquatic substrate, nor did we have a picture of the full extent of the species in the pond. Since *Littorella americana* is an aquatic species, and use of this remote pond is limited to shoreline camping, there do not appear to be direct threats to this population.

GPS of Litorella americana: N 43.18.389 W 072. 57.508

Carex folliculata: We found approximately 25 mature follicle sedge stems in scattered clumps in open, wet conditions along a pond outlet and in a wet meadow on the

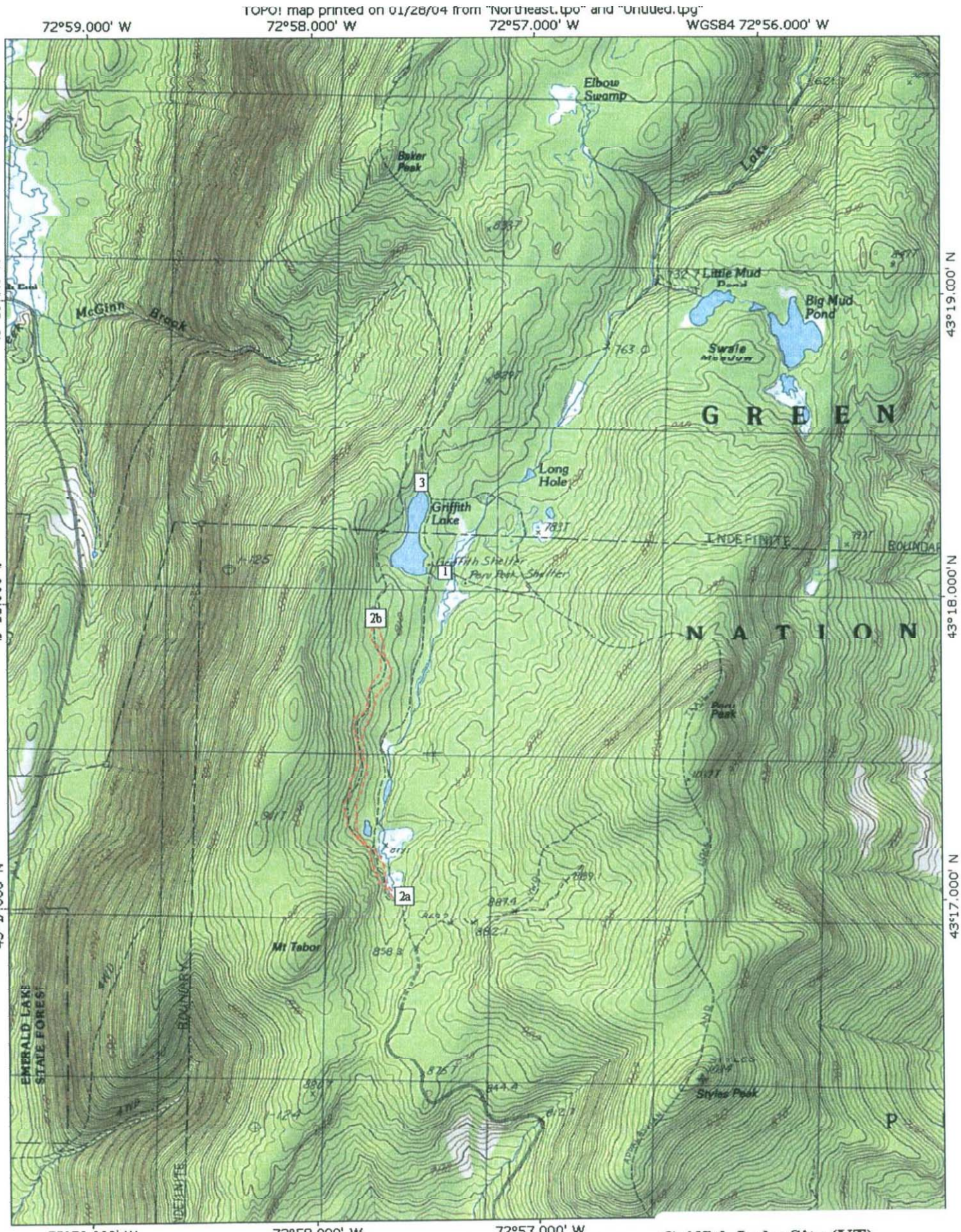
south/southeast side of Griffith Lake. Species associated with *Carex folliculata* include: swamp aster (*Aster puniceus*), long-awned wood grass (*Brachyelytrum erectum*), Canada bluejoint (*Calamagrostis canadensis*), northern awned sedge (*Carex gynandra*), turtlehead (*Chelone glabra*), rough-stemmed goldenrod (*Solidago rugosa*), and tall meadow-rue (*Thalictrum polygamum*). There are no threats to this population.

GPS of Carex folliculata: N 43.16.101 W 072.57.399

GPS Datum
NAD 83

Threats
There are no imminent threats to any of the Griffith Lake area rare plant populations.

Management Actions and Recommendations
This site is not a high priority for monitoring. Periodic checks (five year intervals) on the *Littorella americana* population would help to track the dynamics of this aquatic plant.



Griffith Lake Site (VT)

1. *Carex folliculata*
2a-b. *Geum macrophyllum (range)*
3. *Littorella americana*

May 15

Paull Brook Ravine, MA

with: Cosmo Catalano (and two friends of his)

Site Description
Mature forest dominated by sugar maple (*Acer saccharum*) on rich, moist soils.

Rare Plants
{We noted a West Virginia white butterfly ***(Pieris napi)*** nectaring on toothwort (*Dentaria diphylla)* along the woods road near the broad-leaved waterleaf (***Hydrophyllum canadense)*** population, about 100 feet east of the woods road junction with the AT. I believe this is a new record for this site.}

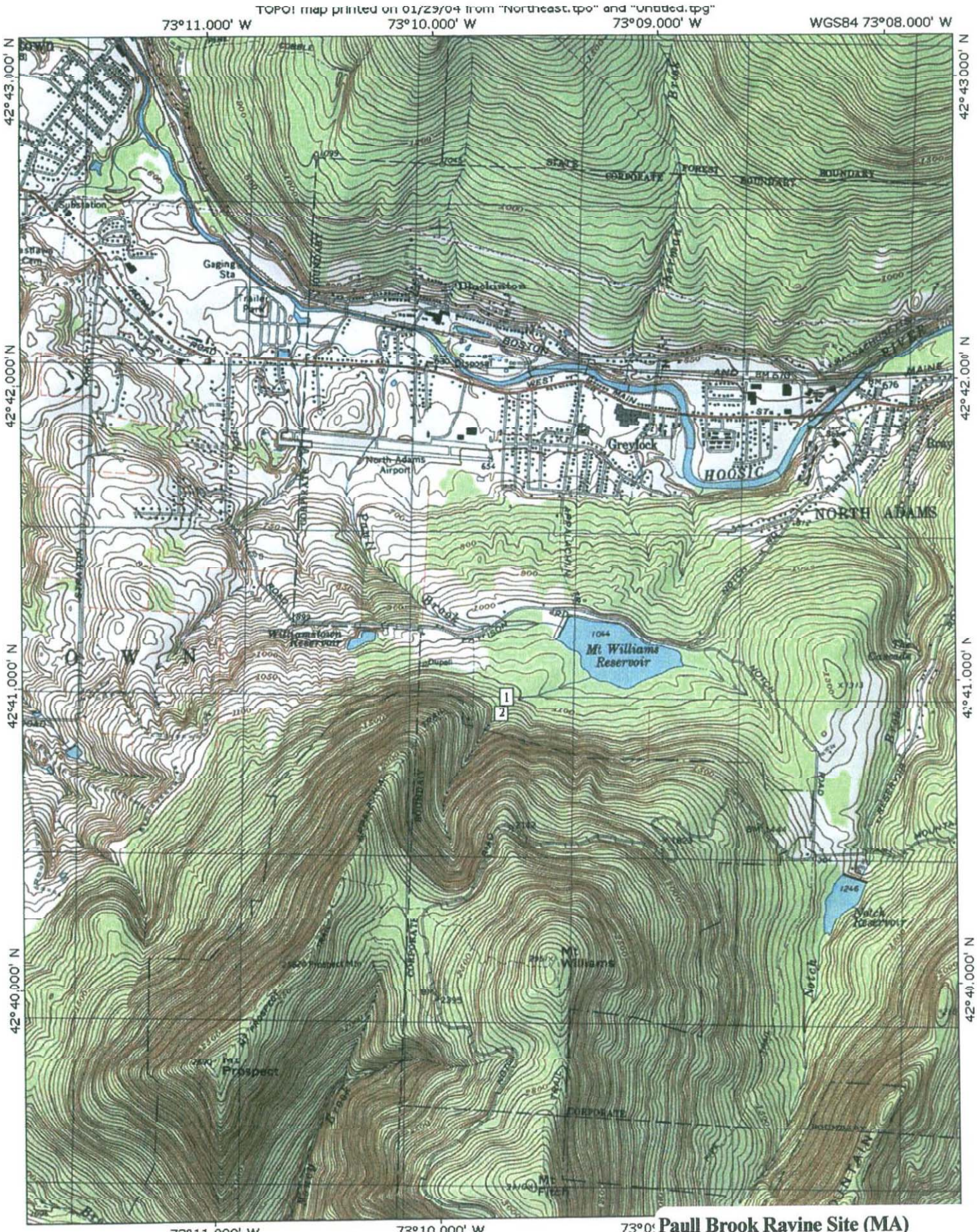
We saw thousands of broad-leaved waterleaf (***Hydrophyllum canadense)*** ramets (stems), the same as in past years. There was no sign of flowering in the population. Cosmo believes that this vegetative colony is spreading downslope. The population also extends upslope (south) of the dam, along a narrow ravine.

Five hundred feet above the dam we found two large-flowered bellwort (***Uvularia grandiflora***) plants, on the east side of the brook—both plants were in flower. This is fewer than the six plants I saw here in 1998, the last time this population was seen. We looked for more large-flowered bellwort along both sides of the ravine, but did not find any. I suspect a few more plants are scattered in the woods.

GPS Datum
I could not get GPS signals in this ravine.

Threats
There are no imminent threats to the rare species at this site.

Monitoring and Management
Hydrophyllum canadense is a very rare species in Massachusetts, and this population should be monitored annually (Cosmo has been doing it). Late in the season Paul Somers told me that a student studying this population may have damaged some of the plants. Paul and/or Cosmo would have details about this matter.



Paull Brook Ravine Site (MA)

1. *Hydrophyllum canadense*
2. *Uvularia grandiflora*

Locations are approximate—no GPS signals in ravine.

July 19

Kitchen Brook Drainage, MA

Site Description

The habitat is mature, rich, mesic forest with a canopy of sugar maple (*Acer saccharum*), white ash (*Fraxinus americana*), black cherry (*Prunus serotina*), and a few large butternuts (*Juglans cinerea*). Associated species: wild leek (*Allium tricoccum*), jack-in-the-pulpit (*Arisaema triphyllum*), wild ginger (*Asarum canadense*), lady fern (*Athyrium filix-femina*), blue cohosh (*Caulophyllum thalictroides*), silvery spleenwort (*Deparia acrostichoides*), bottlebrush grass (*Hystrix patula*), pale jewelweed (*Impatiens pallida*), and wood nettle (*Laportea canadensis*).

Rare plants

Blephilia hirsuta: I counted 31 mature, flowering hairy wood-mint plants and seven immature plants on the north side of the Appalachian Trail along an intermittent stream that drains into Kitchen Brook. The population is about one mile (along the AT) west of the Trail crossing of Outlook Avenue in Cheshire. The plants are scattered in an area of approximately 0.25 acre.

Several hairy wood-mint plants had been browsed, probably by deer, but most of the plants were large and vigorous. Wood nettle is the dominant herbaceous plant here, and browse on this species was extensive. There are no human threats to the wood-mint population at this site. There are a few Morrow's honeysuckle shrubs (*Lonicera morrowii*) in the area, but this microsite is relatively free of extoic plant species. Farther downslope along the AT (0.25-0.5 mile), there are large numbers of Japanese barberry (*Berberis thunbergii*), winged euonymus (*Euonymus alata*), as well as Morrow's honeysuckle, but these species do not appear to be spreading towards the wood-mint population.

In June, 2002, I observed this population with Nancy Childs and Pam Weatherbee. We counted 75 mature *Blephilia hirsuta* plants on that visit. The reason for the decline in numbers this year is not clear to me—browse could have eliminated some plants, or the wetter, cooler conditions in 2003 favored a lush growth of wood nettle that displaced some of the wood-mint population. The population is still in better shape than it was in 1997-98, when Charles Quinlan and I did not locate a single plant in spite of repeated, intensive searches at this location. Annual monitoring could provide clues for the reasons (browse, plant competition, changes in canopy coverage?) for the fluctuations in this population.

GPS of Blephilia hirsuta: N 42.34.671 W 073.10.533

Panax quinquefolius: South of the AT at this same location, there is a thinly distributed ginseng population is an area of about 3 acres. I counted 16 mature and 10 immature ginseng plants. The mature plants were in flower. Canopy trees in this rich, mature, mesic forest near the plants include sugar maple, white ash, beech (*Fagus grandifolia*), and occasional hemlock (*Tsuga canadensis*). Striped maple (*Acer pensylvanicum*) is common in the understory. Herbaceous plants: jack-in-the-pulpit, intermediate woodfern (*Dryopteris intermedia*), spotted touch-me-not (*Impatiens capensis*), wild oats (*Uvularia sessilifolia*), and round-leaved violet (*Viola rotundifolia*).

One ginseng plant had been browsed, but all of the other plants were healthy. In 1997, Charles Quinlan and I found 35 ginseng plants at this site, but in following years, Nancy Childs, who has been monitoring the site, found very few plants. Last year, she, Pam Weatherbee, and I found only five ginseng plants here. It is not clear why the numbers increased this year—more favorable climatic conditions (?), less browse (?). The numbers had dropped so sharply from 1997-2002 that I thought the population had been collected, but that may not be the case. As with the *Blephilia hirsuta* population, an annual census could shed light on the reasons for population fluctuations.

Unless this population is discovered and collected (the plants are well off the trail), there are no human threats. Exotic plants (barberry, honeysuckle, euonymus) are abundant just downslope of the ginseng plants, but do not appear to be spreading upslope into the population area.

GPS points of individual ginseng plants:

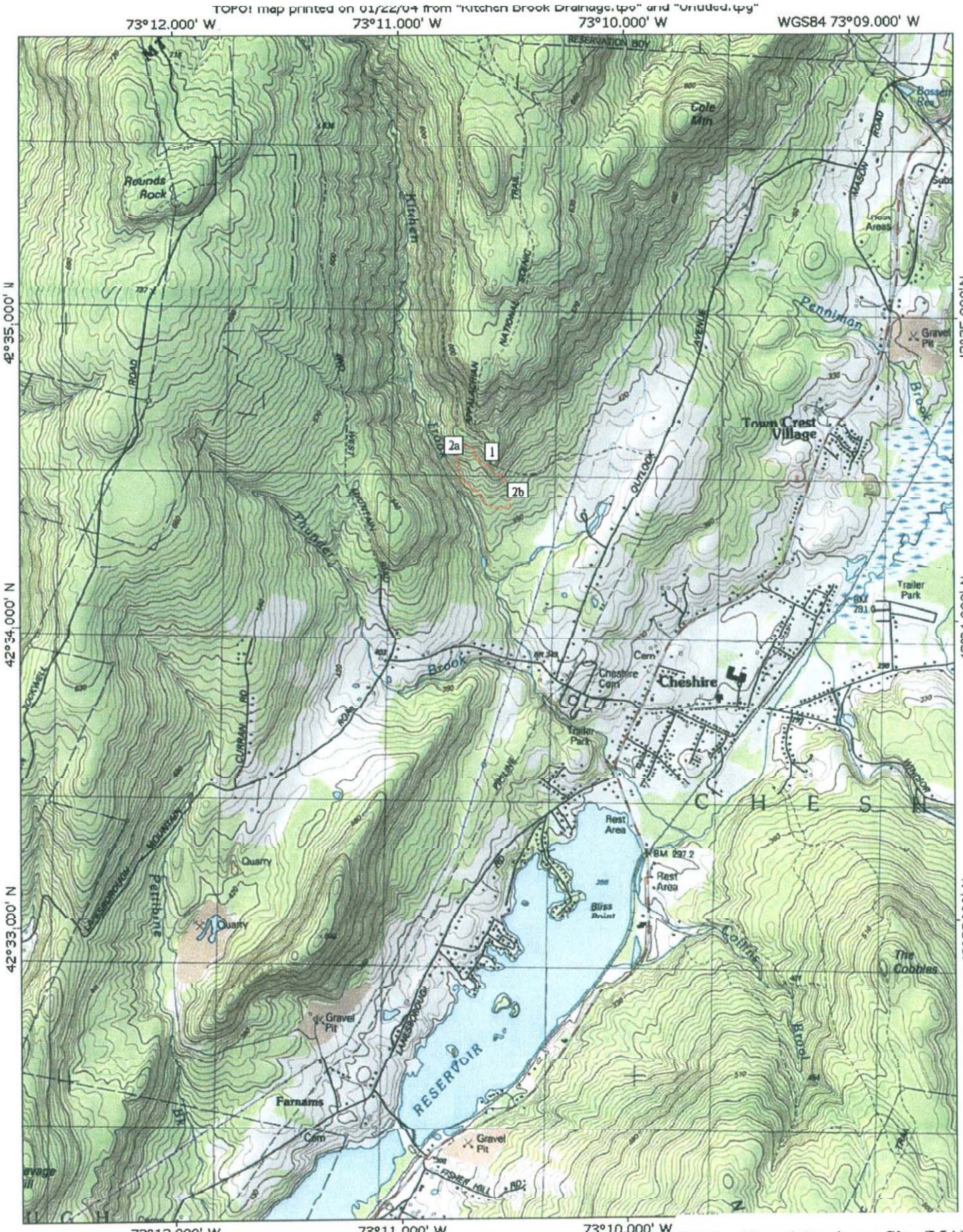
N 42.34.663 W 073.10.544
N 42.34.621 W 073.10.520
N 42.34.632 W 073.10.517
N 42.34.615 W 073.10.490

GPS Datum
NAD 83: ***GPS readings are poor here— species locations on map are not based on GPS readings but on ground assessment of actual locations.***

Threats
Threats are as described above. These include: deer browse on both populations; collection of ginseng plants; competition of wood nettle with hairy wood-mint; and possibly invasion by non-native shrubs such as Morrow's honeysuckle and winged euonymus, which are downslope of the populations.

Management Actions and Recommendations
Several dozen Morrow's honeysuckle shrubs were removed from the vicinity of the hairy wood-mint population.

Continue annual monitoring of these populations and try to understand the patterns of population fluctuations for both species.



Kitchen Brook Drainage Site (MA)

1. *Blephilia hirsuta*
2. *Panax quinquefolius (a and b-range)*

20 August

Day Mountain, MA

Site Description
Rich, maturing sugar maple (*Acer saccharum*)-dominated forest on moist soils. Forest has been logged over in the past, and invasive shrubs, especially Japnese barberry (*Berberis thunbergii*), are common.

Rare Plants

Panax quinquefolius: I found 27 ginseng plants (15 mature, 12 vegetative) in a large area on the lower northern and western slopes of the mountain. This number is approximately the same number that Charles Quinlan, Tony Gola, and I found here last year, but far fewer than the 90 individuals Quinlan and I found in 1997. The diminished numbers of this population (in a year when the Kitchen Brook population had a large increase) puzzles me. I doubt that that collectors have been here. Deer browse could be a factor, but there is no clear evidence of it at this site.

In spite of the proximity of downtown Dalton, this *Panax quinquefolius* population is well-concealed in rugged terrain with a forbidding growth of Japanese barberry (*Berberis thunbergii*).

GPS points of individual Panax quinquefolius plant clusters:

N 42.28.023 W 073.09.568
N 42.28.157 W 073.09.948
N 42.28.138 W 073.10.005

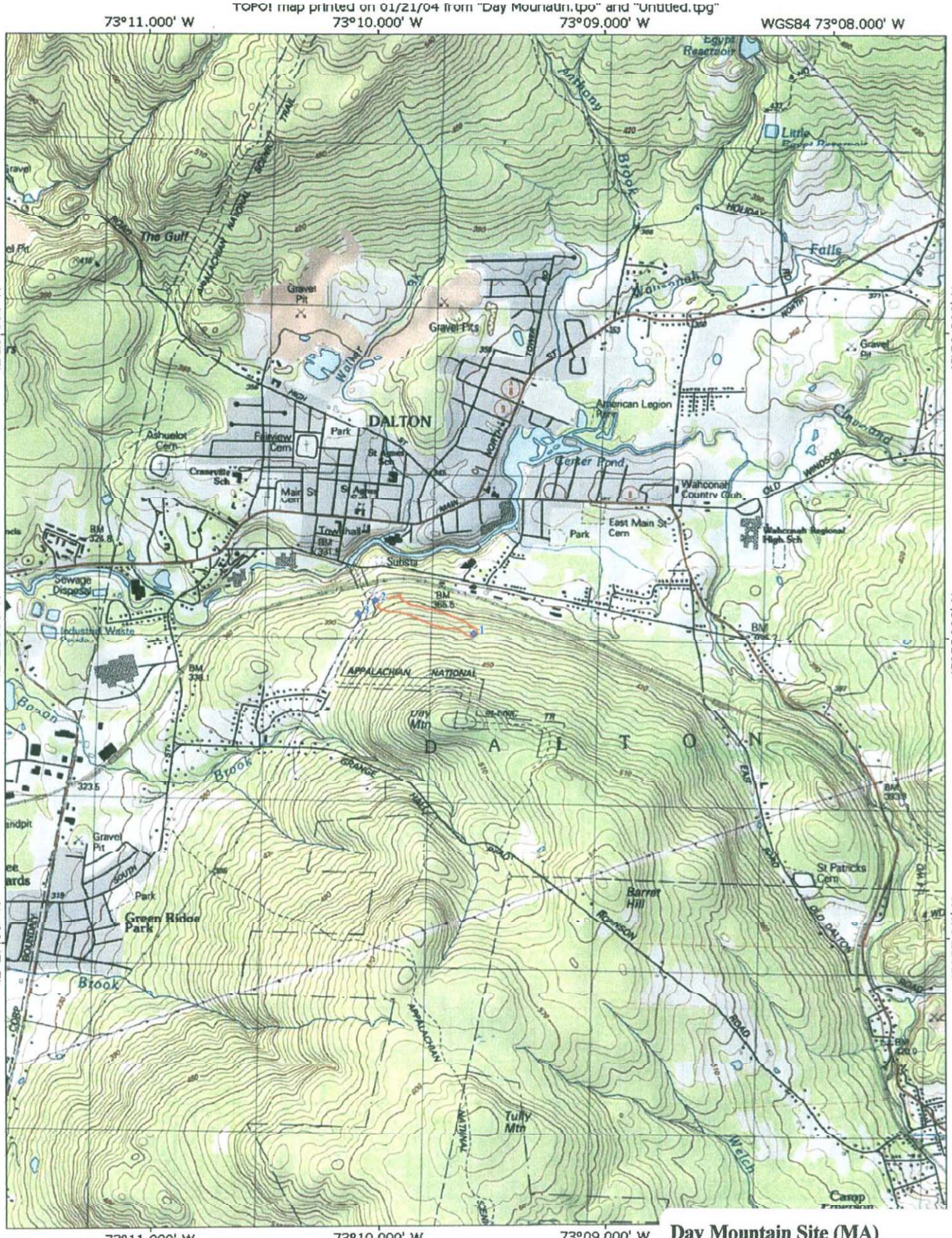
Scirpus pendulus: I saw 10 fading *Scirpus pendulus* plants on the powerline west of the Trail. This population has persisted here in small numbers since our first observation in 1997. There are no threats to these plants.

GPS of Scirpus pendulus: N42.28.079 W 073.10.088

GPS Datum
NAD 83

Threats
Threats include browse and collection of ginseng plants. Although Japanese barberry is common at the site, it does not appear to be impacting ginseng or any of the other rare species at this site. It may even protect the ginseng plants from casual collection.

Management Actions and Recommendations
The ginseng population should be monitored and censused annually.



Day Mountain Site (MA)

1-2. Panax quinquefolius (range)
3. Scirpus pendulus

August 20

Hop Brook at Main Road, MA

Site Description
Shrub swamp along Hop Brook's riparian corridor and wet meadow on the west side of the brook.

Rare Plants
Carex tuckermanii: The plants were senescent, with lingering spikes on a very few individuals. There are a number of look-alike *Carex* species here (all in leaf this late in the season), and I could not get a sense of the size of the *Carex tuckermanii* population on the basis of leaves. Conditions in the *Carex tuckermanii* population area (in ditches on the west side of the footbridge over Hop Brook) appear little different from the time I last saw the population in 1998. A visit in June 2004 is recommended to get an accurate census.

Associated species: tussock sedge (*Carex stricta*), tall mannagrass (*Glyceria grandis*), blue flag (*Iris versicolor*), sensitive fern (*Onoclea sensibilis*), water pepper (*Polygonum hydropiper*), arrow-leaved tearthumb (*Polygonum sagittatum*), and woolgrass (*Scirpus cyperinus*).

GPS of Carex tuckermanii cluster in one ditch: N 42.14.062 W 073.11.810

Ribes americanum: Eight wild black currant shrubs (6 vegetative; 2 in fruit) were clustered in an area of 30 square feet in a dense swamp thicket on the northeast side of the footbridge over Hop Brook. Swamp dogwood (*Cornus amomum*) dominates this riparian habitat, overtopping the currant shrubs and other vegetation. The site is more overgrown with swamp dogwood than it was when I first saw this population in 1997.

It is not clear if the swamp dogwood is crowding out *Ribes americanum*-- this wild black currant population has always been small.

GPS of Ribes americanum: N 42.14.079 W 073.11.783

Carex retrorsa
I did not find any *Carex retrorsa* plants, which were scattered in dense riparian shrub thickets when I last saw them in 1997. However, I was late in the season for sedges, and they should be searched again in June 2004.

GPS Datum
NAD 83

Threats
Natural succession and competition from other plants are possible therats to these two populations. There are a few Canada thistle (*Cirsium arvense*) plants above the ditches

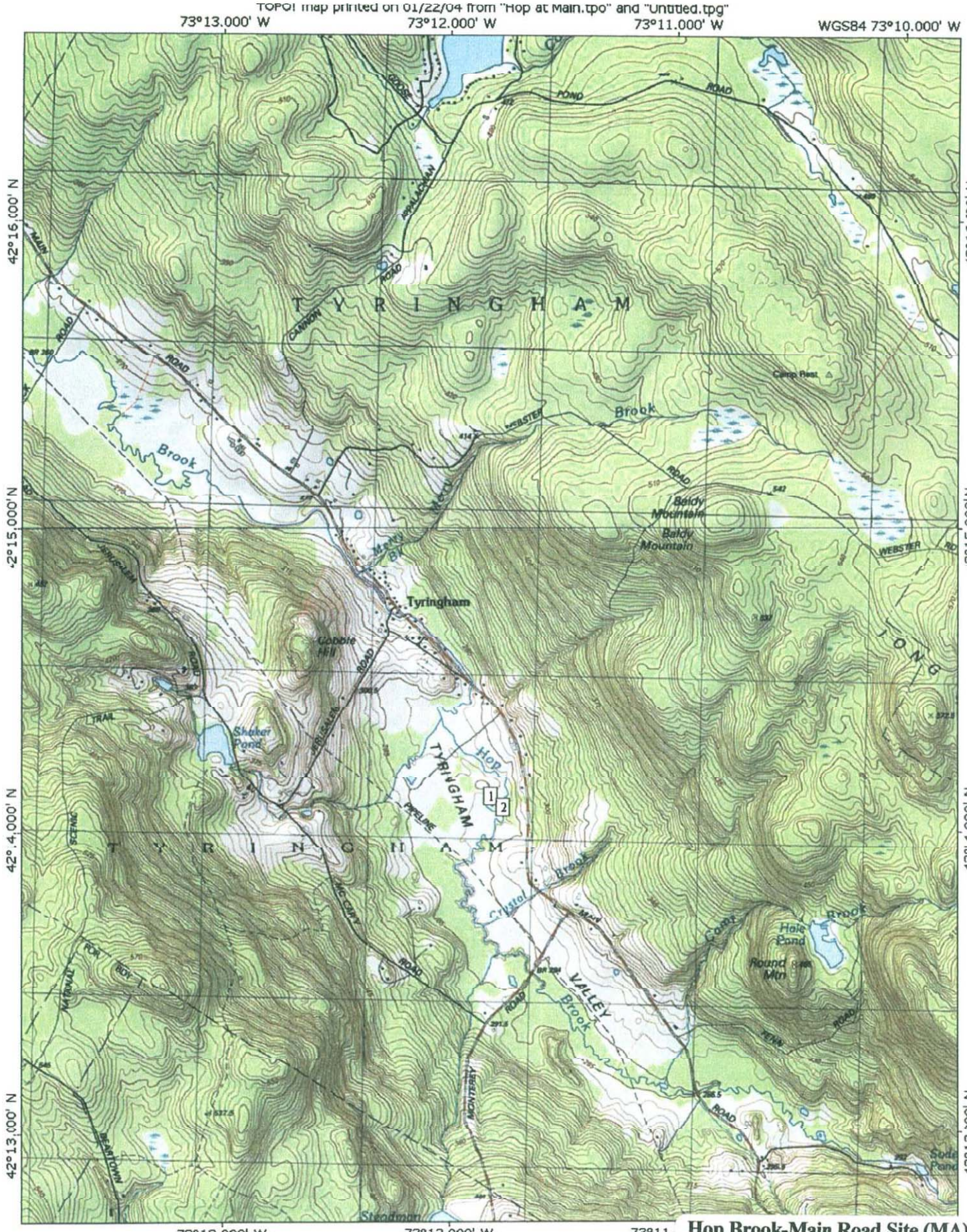
where Tuckerman's sedge occurs. This invasive species could become a problem if it spreads into wetter soil.

Management Actions and Recommendations

The *Carex tuckermanii* population should be inventoried in June 2004. Search for *Carex retrorsa* at the same time.

Hand removal of Canada thistle near the *Carex tuckermanii* plants while its numbers are small is recommended for 2004.

I do not have management recommendations for the site's riparian zone. There are a few purple loosestrife (*Lythrum salicaria*) plants along Hop Brook, but this invasive species—with other herbaceous vegetation—is losing ground to shrubs. Opening up Hop Brook's streamside corridor to a more meadow-like condition is worth consideration, but it is not a management priority.



Hop Brook-Main Road Site (MA)

1. *Carex tuckermanii*
2. *Ribes americanum*

May 1

Shaker Campsite, MA

with: (called Peter Rentz, the site monitor, but there was no answer)

Site Description
Maturing hardwood forest dominated by sugar maple (*Acer saccharum*) on steep, northeast-facing slopes. Soils are moist and rich. Herbaceous flora is very diverse.

Rare Plants
Uvularia grandiflora: Immediately upslope of Jerusalem-Fernside Road, I noted 18 large-flowered bellwort ramets (stems) in bloom, and 13 immature stems. The canopy consists of sugar maple *(Acer saccharum)*, yellow birch (*Betula alleghaniensis),* beech (*Fagus grandifolia)*, and hop hornbeam (*Ostrya virginiana)*. Also associated are: *Carex plantaginea, Claytonia caroliniana, Dentaria diphylla, Dicentra cucullaria, Hydrophyllum virginianum, Mitella diphylla.*

GPS of Uvularia grandiflora: N 42.14.996 W 073.13.648

There were more *Uvularia grandiflora* plants downslope of the road, a total of 23 flowering stems and nine immature stems in a clump about 0.2 mile north of the road.

GPS of this group of Uvularia grandiflora: N 42.15.055 W 073.13.563

Podophyllum peltatum: A total of 27 mayapple plants occurs about 0.2-0.3 mile upslope of Jerusalem Fernside Road. Many of these plants were robust, but there was no sign of flowering. The canopy consists of sugar maple, beech, and hop hornbeam. There are many sapling sugar maples in the area. Associated herbaceous species include: *Caulophyllum thalictroides, Claytonia caroliniana, Dicentra cucullaria, Dentaria diphylla, Erythronium americanum, Hydrophyllum virginianum.*

GPS of Podophyllum peltatum: N 42.14. 966 W 073.13.703

Dentaria maxima I found about 40 crinkleroot plants in bloom over an area of one acre in shaded seepages near the base of the slopes above the Hop Brook floodplain. Associated species include sugar maple, paper birch *(Betula papyrifera),* white ash (*Fraxinus americana),* white pine *(Pinus strobus),* hop hornbeam, alternate-leaved dogwood *(Cornus alternifolia),* and chokecherry *(Prunus virginiana)*. No other herbaceous species are immediately associated with crinkleroot, which is limited to very wet soil in the seepages. I counted approximately 100 vegetative crinkleroot plants, with the caveat that these smaller specimens resemble common toothwort (*Dentaria diphylla*) which occurs in mesic (but not wet) conditions in the surrounding forest.

GPS of Dentaria maxima: N 42.15.109 W 073.13.384

Sanicula odorata: I quickly noted the clustered snakeroot population near the campsite—there were approximately 200 stems, the same as in previous years. I did not log a GPS point for this population (see 2002 monitoring report).

{Saw one ***Pieris napi*** (West Virginia white butterfly) on the AT, 50 feet downslope of Jerusalem-Fernside Road.}

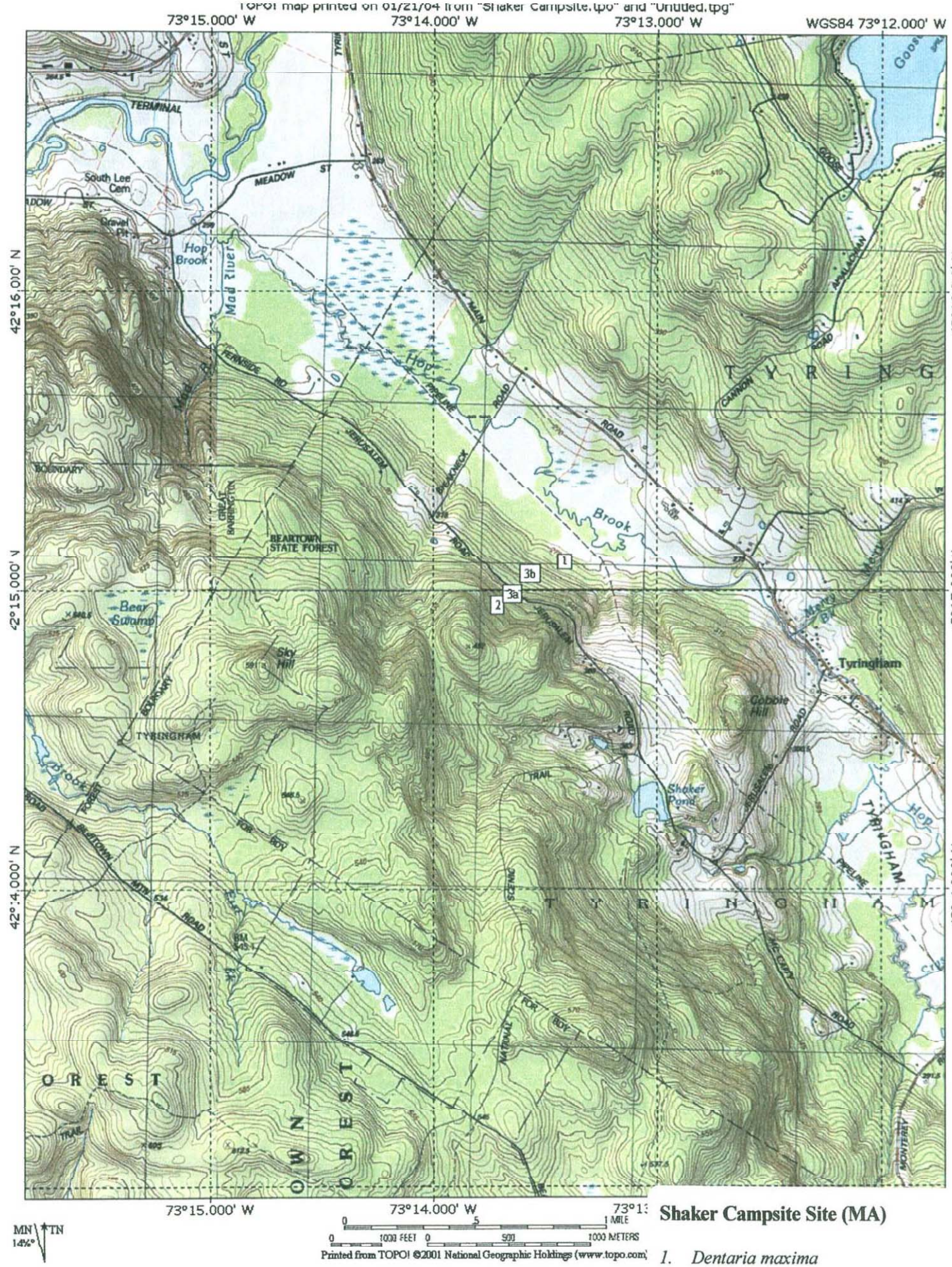
GPS Datum
WGS 84

Threats
The clustered snakeroot population grows along the side of the Trail and is exposed to trampling and trail maintenance. Trail maintainers have done a good job watching out for this occurrence. Patches of garlic mustard (*Alliaria petiolata*) grow near the clustered snakeroot plants.

There are no immediate threats to the other rare plant populations at this site.

Management Actions and Recommendations
I removed many garlic mustard plants in the vicinity of the clustered snakeroot population.

This site should be monitored periodically (every 2-3 years). All of the site's rare plant populations were in good shape in 2003.



Shaker Campsite Site (MA)

1. *Dentaria maxima*
2. *Podophyllum peltatum*
3. *Uvularia grandiflora (a and b-points)*

April 29

Vossburg Hills, MA

Site Description
Mixed hardwood-hemlock forest on dry, limestone soils; farm fields.

Rare Plants
Purple-stemmed cliffbrake (***Pellaea atropurpurea)***: one clump with nine fronds was found on rocks on the west side of Trail on the upper ridge. I had not seen this patch in last year's survey (17 fronds were counted on the east side of the Trail in September 2002). This clump is on an partially-shaded west-facing slope, in thin, dry soil, about 10 meters west of AT. It grows on ledges with mosses and *Cladina* lichens.

GPS of Pellaea atropurpurea: N 42.08. 978 W 073.22.654 (WGS84).

Japanese barberry (*Berberis thunbergii)* and multiflora rose (*Rosa multiflora)* are spreading into the small-flowered agrimony (***Agrimonia parviflora***) population area on the farm field east of South Egremont Road.

Small-flowered agrimony had not emerged at the time of this visit. (***see September 2 discussion for this site***).

{Note. I surveyed a different and larger area of the Vossburg Hills on September 2.}

GPS Datum
WGS 84

Threats
There are no threats to the purple-stemmed cliffbrake plants. See summary for September 2 for small-flowered agrimony.

Management Actions and Recommendations
See summary for September 2

September 2

Vossburg Hills, MA

Site Description
Old limestone quarry maintained by the owner as a rifle range.

Note: I was scheduled to visit the privately owned site abutting the AT corridor at Vossburg Hills with Bill Brumback of the New England Wild Flower Society. Bill had secured the landowner's permission to visit the site, but at the last minute Bill could not come. I surveyed the site on my own. This section of the Vossburg Hills is not officially within the AT corridor, but it is so close and so rich in rare plants that this information may be useful for AT corridor management.

The *Agrimonia parviflora* information discussed in this summary is located on the edges of farm fields on ATPO land.

The results of this day's survey have also been submitted to the New England Wild Flower Society and the Massachusetts Natural Heritage and Endangered Species Program.

Rare Plants
I searched for the following rare plants in and around the property's old limestone quarries, using as guidance a site report and map prepared by Bill Brumback following his visit to the property on 19 September 1998:

Equisetum variegatum
Gentiana andrewsii
Hedeoma hispida
Pellaea atropurpurea
Penstemon hirsutus
Quercus muehlenbergii
Verbena simplex
Waldsteinia fragarioides.

***Equisetum variegatum* (variegated horsetail).** A small, clustered population of about 50 variegated horsetail stems is located in open, wet ground on the quarry floor just to the north of the quarry's second bowl (on Brumback map), to the south of the tunnel. The area covered by the stems is about 2m by 2m. Associated with the horsetail are: *Aster lateriflorus, Daucus carota, Equisetum arvense, Prunella vulgaris*, and *Tussilago farfara*. *GPS: N 42.09.150, W 073.23.004*

***Gentiana andrewsii* (Andrew's bottle-gentian).** I did not find Andrew's bottle-gentian (last seen here in 1996?). Its most likely habitat now would be the wet depressions on the north end of the quarry floor.

***Hedeoma hispida* (Hispid pennyroyal).** I did not find *Hedeoma hispida* at the site—American pennyroyal (*Hedeoma pulegioides*) was abundant all around the quarry.

***Lobelia kalmii* (Kalm's lobelia):** This watch-listed plant was not mentioned in previous site reports. It is scattered in wet spots on the north and east sides of the first and second bowls. The largest group (31 plants) is located two meters north of the variegated horsetail population. Another cluster of 28 plants was noted in a small, shallow depression on the east side of the first bowl. The plants were flowering vigorously.
GPS: N 42.09.150. W 073.23.004

***Pellaea atropurpurea* (purple-stemmed cliffbrake).** One cliffbrake plant with several fronds was seen in a crevice on the eastern wall of the quarry' s second bowl. The clump was a few feet above the quarry floor, at the northern end of the second bowl. Cypress spurge (*Euphorbia cyparissias*) grows abundantly on this part of the wall (and in other places at the site).
GPS: N 42.09.117 W 073.22.992.
{I have noted more *Pellaea atropurpurea* plants on outcroppings on NPS land adjacent to this property.}

***Penstemon hirsutus* (hairy beardtongue).** A total of about 40 hairy beardtongue plants in late fruit were scattered in exposed sites on the rim and walls on the quarry's east side. One plant was seen on the quarry floor in the middle of the first bowl. Although it was late in the season for the species, the individual plants appeared vigorous.
GPS of a cluster of 10 plants on the quarry rim: N 42.09.120 W 073.22.976.

***Quercus muehlenbergii* (yellow oak).** There are hundreds of yellow oak seedlings and saplings in the woods and on wood edges at the site, as well as occasional understory trees. There are many more mature yellow oaks on the NPS land east of this property.

***Verbena simplex* (narrow-leaved vervain).** Bill Brumback's 1998 report mentions more than 500 narrow-leaved vervain plants scattered on the quarry floors and eastern walls of both the first and second bowls. I noted a total of just over 100 plants. The largest group seen on this visit (about 65 plants) was on gravelly pavement on the quarry floor in the north and central parts of the second bowl. A smaller number of plants (17) occurred on the floor near the middle of the first bowl. Twenty more plants, most of them vegetative, were scattered on the cliffs on the east side of the second bowl. For the population as a whole, I counted 76 fruiting individuals and 32 vegetative, presumably immature ones.

Most of the *Verbena simplex* plants were very small (5-10 centimeters), with tiny inflorescences. The population looked anemic. I saw only two mature plants that were over 25 centimeters in height—both of these individuals grew on the quarry wall. Almost all of the plants grow in almost barren conditions, either on pavement rubble or on bare cliffs. I did not see any narrow-leaved vervain plants in the patches of weedy turf on the quarry floor.

Species associated with *Verbena simplex* include: *Ambrosia artemisiifolia, Aquilegia canadensis (on the cliffs), Aster pilosus, Celastrus orbiculatus, Centaurea maculosa, Daucus carota, Echium vulgare, Euphorbia cyparissias, Hedeoma pulegioides, Muhlenbergia frondosa, Panicum capillare, Poa compressa, Potentilla fruticosa, Schizachyrium scoparium, Verbascum thapsus.*

GPS of Verbena simplex plants on the floor of the second bowl: N 42.09.108 W 073.22.999.

***Waldsteinia fragarioides* (barren strawberry).** A large and healthy population of barren strawberry (2000+ leaves counted) is located along an old woods road that is above and to the east of the quarry's eastern rim. The plants are northeast of the rim fronting the quarry's second bowl. The population occurs in partially shaded conditions in an area of approximately 450 square meters (30m by 15m) on and near the road. Most of this area is covered with pine needles. White pine (*Pinus stobus*) and white ash (*Fraxinus americanus*) form a partial canopy (about 60%) above the plants. Understory trees and shrubs include *Cornus rugosa, Ostrya virginiana, Prunus serotina, Quercus alba,* and *Q. muehlenbergii*. Associated ground cover species include *Aquilegia canadensis, Hepatica americana, Maianthemum canadense, Mitchella repens* and *Parthenocissus quinquefolia*. I could not tell how much (if any) of this early-flowering and fruiting species had flowered here.
GPS of Waldsteinia fragarioides: N 42.09.158 W 073.22.980

GPS Datum
NAD 83

Threats
Verbena simplex is the only species in trouble at the quarry site. The main reason for the decline of *Verbena simplex* in the past five years is competition from other herbaceous plants on the quarry floor. In New England, where narrow-leaved vervain is on the extreme northeastern edge of its range, the species cannot tolerate competition from other plants. It demands open, dry, and warm conditions in calcareous rock crevices and bare, stony ground.

Management Actions and Recommendations
Narrow-leaved vervain is the only rare plant species at the site requiring management attention in the near future. This population is one of two *Verbena simplex* populations in New England. The population at this site appears to have declined by about 80% (from c. 500 to c.100 plants) in a five-year period.

Bill Brumback reported in 1998 that scraping of the quarry floor in the previous year had cleared the floor of other vegetation, and stimulated a significant increase in *Verbena simplex* numbers. I recommend scraping the floor again in March/early April, 2004.

I advise scraping the entire first bowl, and most of the second bowl, except for a stony, open section in the north-central part of the second bowl that still has good numbers of *Verbena* plants.

Do not scrape the area north of the second bowl. Both *Equisetum variegatum* and *Lobelia kalmii* occur in wet depressions north of the second bowl and south of the tunnel. Scraping here would destroy these plants, as well as eliminate habitat for *Gentiana andrewsii* which may still exist as a seed bank.

One other point about the *Verbena simplex* population this year is that the majority of mature plants on the quarry floor were very small (5-10 cm.), almost dwarfed, considerably smaller than the typical height range for the species (20-60 cm.). This small stature could be a response to the cool and wet conditions prevailing in 2003, and/or it may reflect the diminshed quality of site conditions as other herbaceous plants encroach on its habitat.

Annual observations of this population would yield useful information about the population dynamics and trends of an extremely rare plant on the edge of its range.

All of the other rare plant populations, including *Penstemon hirsutus*, which like narrow-leaved vervain is endangered in Massachusetts, looked vigorous. *Equisetum variegatum*, *Pellaea atropurpurea*, and *Waldsteinia fragarioides* occupy small areas at the site, but these populations should be fine as long as habitat and land use remain essentially the same.

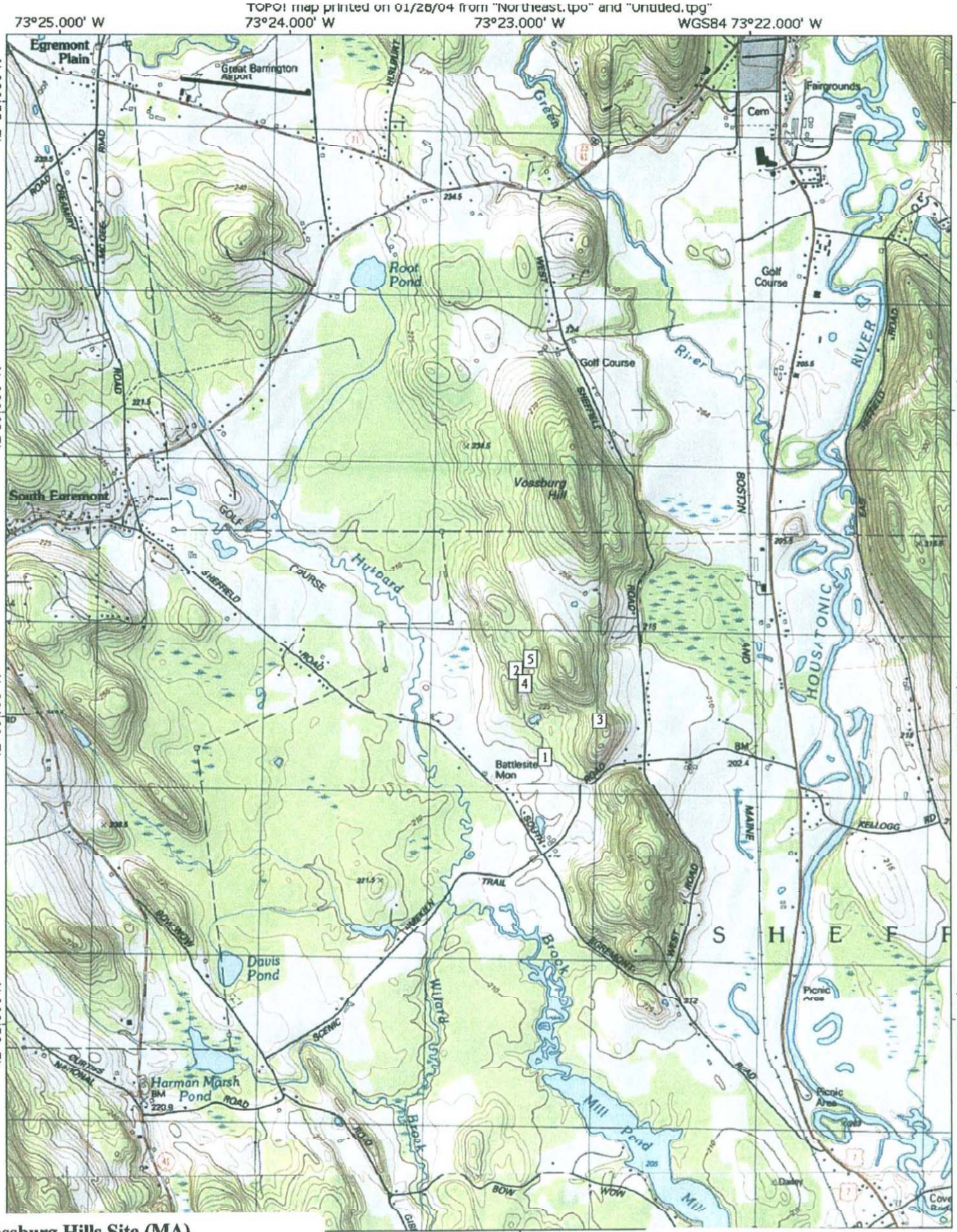
Agrimonia parviflora (Small-flowered agrimony)

This population is on the edge of a large, moist farm field on NPS-owned land just south of the Norton property, inhabiting an area of about 30m x 20m.

I counted 75 large, flowering plants in old field conditions on the overgrown edge of the farm field. These numbers are slightly greater than they were in 2002 (50-60 plants), but plant competition from native and non-native old field species is a long-term threat to this occurrence.

I recommend mowing this area late in the year (October-November) in 2004 to reduce competing species, such as multiflora rose (Rosa multiflora), common buckthorn (Rhamnus cathartica), and tree seedlings which are becoming established on the edge of the field.

GPS of Agrimonia parviflora: N 42.08.871 W 073.22.890



Vossburg Hills Site (MA)

1. *Agrimonia parviflora*
2. *Equisetum variegatum, Lobelia kalmii*
3. *Pellaea atropurpurea*

Vossburg Hills Site (2) (MA)

4. *Pellaea atropurpurea, Pestemon hirsutus, Verbena simplex*
5. *Waldsteinia fragarioides*

April 29

Hubbard Brook, MA

with: Claudia Vispo (and her husband and child)

Site Description
Wet meadow with a mixture of shrubs and tall herbaceous plants on the east side of Hubbard Brook.

I went into the site before Claudia arrived. A few marsh marigolds (*Caltha palustris*) were in bloom, but otherwise the floodplain and adjacent meadows still looked like winter. There was no sign of *Cardamine bulbosa* or any other rare species. When Claudia arrived we rescheduled the site visit for Saturday, May 10.

May 10

Hubbard Brook, MA

Site Description
Wet meadow with a mixture of shrubs and tall herbaceous plants on the east side of Hubbard Brook.

with: Claudia Vispo

Rare Plants
Cardamine bulbosa: We did not find the spring cress population on the east side of the Hubbard Brook bridge. This was disappointing, since there were scores of them here several years ago (1998). Changes in water level from beaver activity along the brook and shrub succession on the wet meadow are possible reasons for their disappearance on the east side of Hop Brook.

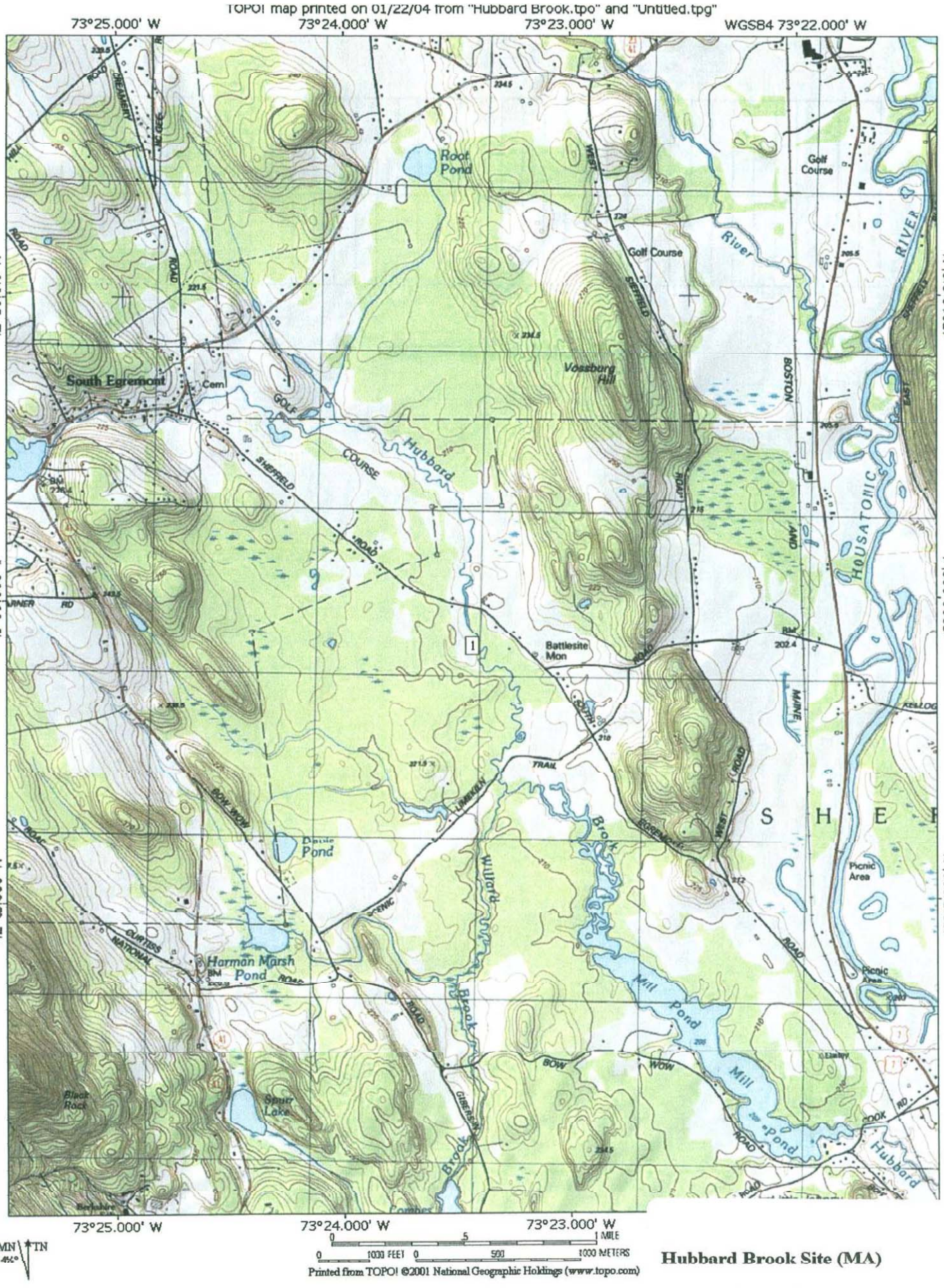
We found 12 healthy, budding *Cardamine bulbosa* plants in an area of 500 square feet on the west side of the brook, in wet soil, in the partial shelter of hemlock (*Tsuga canadensis*). Also here were: *Anemone quinquefolia, Athyrium filix-femina, Cornus amomum, Onoclea sensibilis, Tiarella cordifolia.*

GPS of Cardamine bulbosa: N 42.08.858 W 073.23.283

GPS Datum
WGS 84

Threats
Beaver flooding of portions of the wet meadow may have impacted spring cress on the east side of the bridge. (Meadow conditions in 2003 were excellent for the late-blooming *Agrimonia parviflora* and *Gentiana andrewsii*. The Andrew's bottle gentian numbered about 25 when observed on a fast survey in September 2003—this is the largest number seen here in five years).

Management Actions and Recommendations
Annually monitor the spring cress and other rare plant populations at this site.



Hubbard Brook Site (MA)

1. Cardamine bulbosa

May 10

Sheffield-Egremont Town Line

with: Claudia Vispo

Site Description
Mid-successional hardwood-white pine forest on rich soils. Soils are intermediate between moist and dry. The slopes on this site have an interesting diversity of herbaceous plants.

Note: We saw bobolinks on farm fields west of Route 41—I'm not sure if bobolinks are a state-listed species, or perhaps a "locally rare breeding bird".

Rare Plants
We found long-spurred violet (***Viola rostrata)*** at the base of the slope near the pond and swamp at this site. There were 55 flowering long-spurred violets in an area of about two acres.

The habitat is diverse, marred by the presence of Japanese barberry (*Berberis thunbergii*), especially near the pond. In much of the woods, especially on the steep slope above the pond, the flora is mostly native. Trees include: sugar maple *(Acer saccharum),* white ash *(Fraxinus americana),* white oak (*Quercus alba),* red oak *(Quercus rubra),* and white pine *(Pinus strobus).*

Leatherwood (*Dirca palustris)*, an unusual if not state-listed shrub, is present in small numbers on the slope.

Herbaceous species noted in vicinity of the long-spurred violets on the steep slope: *Aquilegia canadensis, Botrychium virginianum, Carex eburnea, Erythronium americanum, Hepatica americana, Oryzopsis asperifolia, Pedicularis canadensis, Uvularia perfoliata, Viola conspersa,* and *Viola sororia.*

GPS points for Viola rostrata: west side of population--N 42.08.714 W 073 24.654; east side of population--N 42.18.670 W 073.24.547; plants on the slope—N 42.08.705 W 073.24.559.

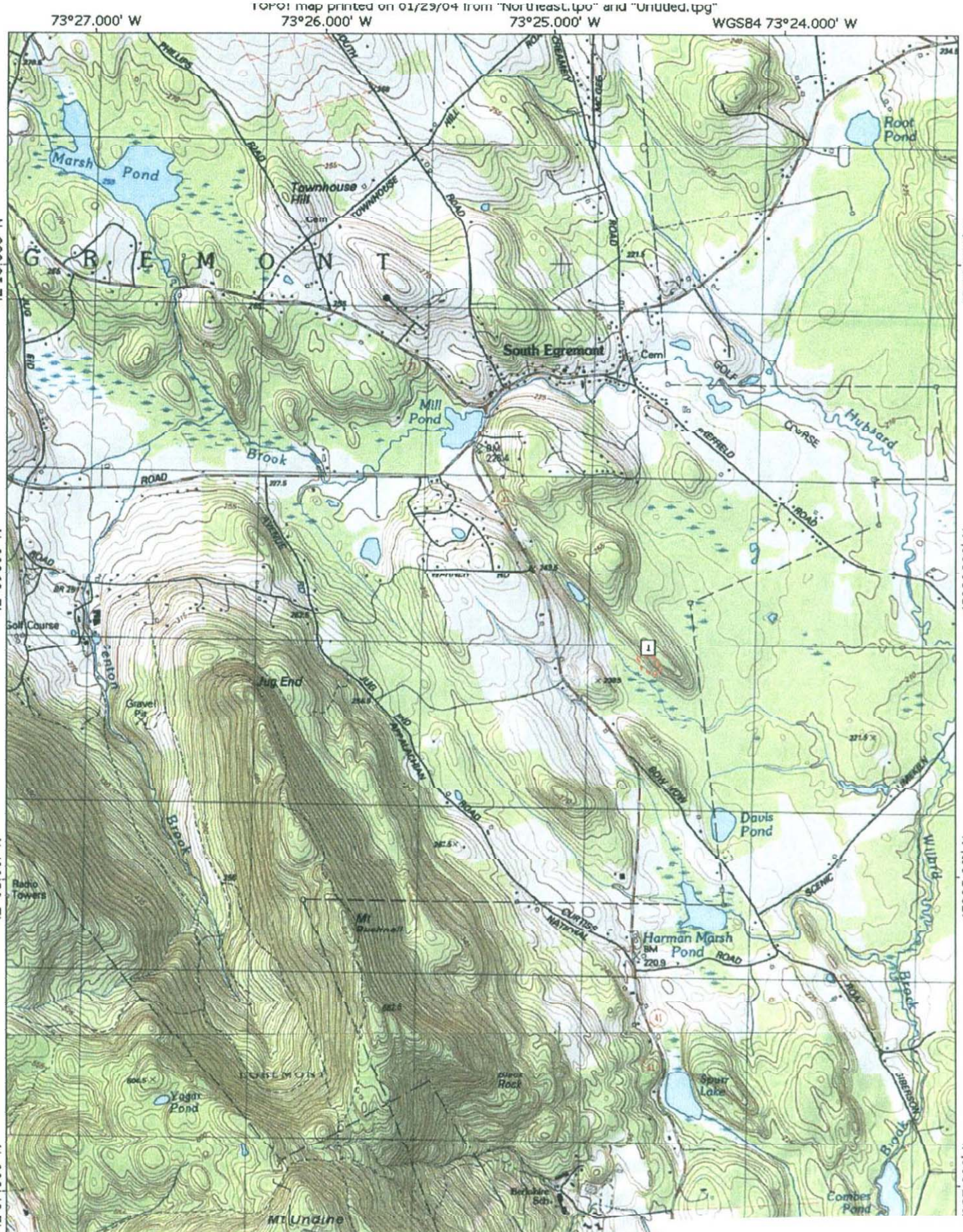
GPS Datum
WGS 84

Threats
Japanese barberry is an annoying presence at this site, but it does not directly threaten long-spurred violet.

Management Actions and Recommendations

This site should be monitored annually, and surveyed for more rare species.

If several volunteers with hand clippers can be organized for a day's work, they could make a dent in the Japanese barberry infestation.



Sheffield-Egremont Site (MA)

1. Viola rostrata (range)

29 August

Mount Race and Bear Rock Falls, MA

The objectives of this search were to inventory the populations of *Solidago simplex* var. *randii* (=*S. glutinosa*) at these two sites.

Mt. Race

Site Description

Red maple (*Acer rubrum*), red oak (*Quercus rubra*) and chestnut oak (*Quercus montana*) dominate most of Mt. Race. The mountain's long, partially open ridgeline has a good stand of pitch pine (*Pinus rigida*) and scrub oak (*Quercus ilicifolia*).

Rare plants

I noted an ***Ilex montana*** (mountain winterberry) population on the north side of the mountain's upper ridgeline. This population had not been previously documented. There were four mature, multi-stemmed shrubs and five immature shrubs scattered along 0.2 mile of the Trail at an elevation of 640 meters. The shrubs grow in a thin forest of red maple (*Acer rubrum*), red oak (*Quercus rubra*), and scattered hemlock (*Tsuga canadensis*). This population grows in higher and drier conditions than the large mountain winterberry populations near Guilder and Plantain Ponds.

There are no threats to these shrubs, and I expect that a more extensive survey would find more *Ilex montana* on the north side of Mt. Race.

GPS of *Ilex montana* : N 42.03.442 W 073.26.214

The ***Solidago simplex*** (Rand's goldenrod) subpopulation which grows in open conditions at the south end of the Mt. Race ridgeline consisted of 188 flowering stems and approximately 25 sets of basal leaves without stems. These numbers have been stable since I first saw the population in 1997—the plants looked to be in excellent condition.

The second Mt. Race subpopulation, which grows in the woods from the south end of the ridgeline to a point near the access trail to YMCA Camp Hi-Rock, consisted of 15 flowering stems and 33 sets of basal leaves. These numbers are also about the same as found during the original inventory. The plants in this subpopulation are less vigorous and have more slender inflorescences than those in the open ridgeline.

I saw one *Solidago simplex* plant near the summit, north of where plants had been previously documented. This identification should be confirmed (the very similar *Solidago puberula* occurs at the Mt. Race summit also), but I believe this individual was *S. simplex*.

GPS of Solidago simplex: *N 42.04.902 W 073.25.912 (plant near summit)*
N 42.04.587 W 073.25.892 (ridgeline plants near trail)

N 42.04.450 W 073.25.934 (ridgeline plants at lookout)
N 42.03.992 W 073.26.212 (southernmost plants near Camp Hi-Rock)

GPS Datum
NAD 83

Threats
A number of the Rand's goldenrod plants in the southern subpopulation grow right in the footpath and are exposed to trampling.

Management Actions and Recommendations
Solidago simplex on Mt. Race should be monitored and censused annually, especially the southern subpopulation.

Bear Rock Falls

Site Description
Hemlock (*Tsuga canadensis*) dominates the forest around the top of Bear Rock Falls

Rare Plants
The Bear Rock Falls population of ***Solidago simplex*** is at the eastern margin of the AT corridor zone. I noted 26 budding stems and approximately 25 clusters of basal leaves. These plants grow in crevices along the falls, and there are certainly more plants farther down these steep, slippery falls. There are no threats to this population.

GPS of Solidago simplex: N 42.03.642 W 073.26.134

GPS Datum
NAD 83

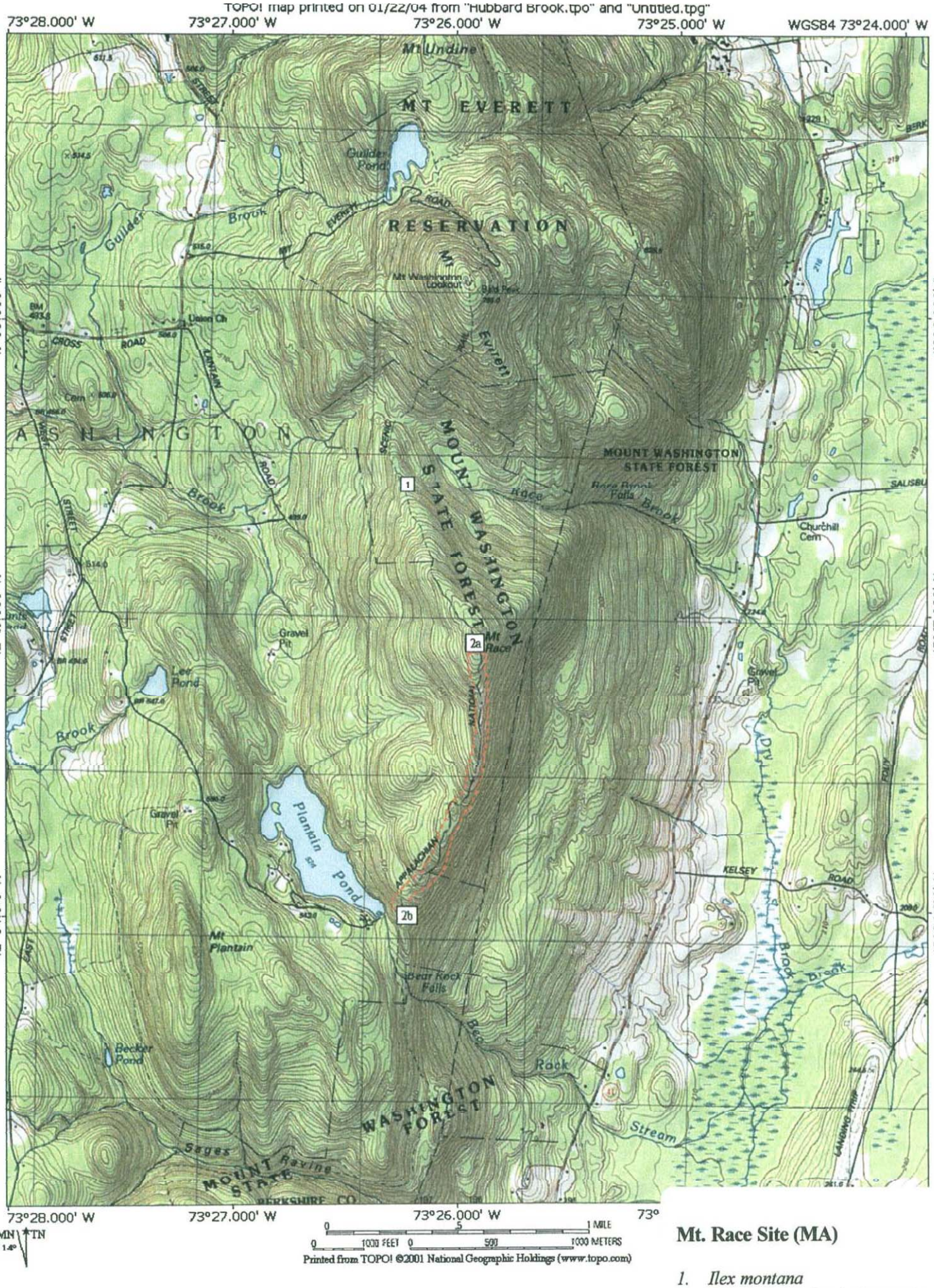
Threats
None

Management Actions and Recommendations
None

Additional notes on this survey:

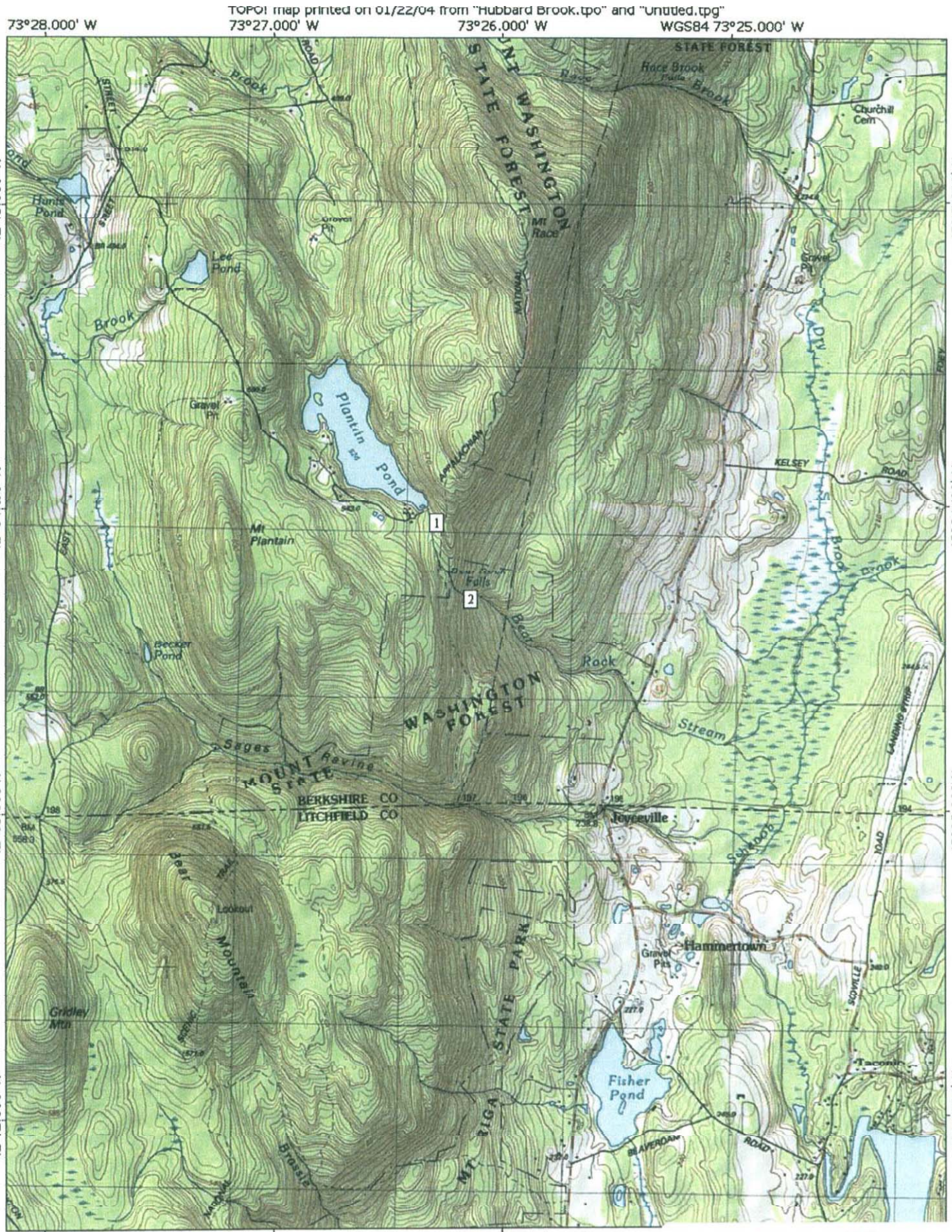
I looked quickly at *Ilex montana* shrubs at the Bear Rock Falls site. This large population grows almost entirely within YMCA camp property around Plantain Pond. The camp property is now posted, and I did not enter the grounds. I took a GPS point of several outlying mountain winterberry shrubs on the boundary of state and camp land, within the AT corridor: *N 42.03.951 W 073 26.288.*

On my descent down the blue-blazed Mt. Race Trail, I found another group of *Ilex montana* shrubs along Race Brook—on state land outside of the Corridor. FYI the GPS of this population of about 25 shrubs is: N 42.05.314 W 073.25.530.



Mt. Race Site (MA)

1. *Ilex montana*
2. *Solidago simplex (a,b-range)*



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Bear Rock Falls Site (MA)

1. *Ilex montana*
2. *Solidago simplex*

April 23

Bear Mountain, CT

with: Paul Palmer

Site Description
Northern hardwood-hemlock slopes and black spruce swamp on the east side of Bear Mountain.

Objective: Search for red spruce *(Picea rubens)* on the south end of the large swamp to the east of Bear Mountain's steep eastern slopes.

Rare Plants
We found five red spruce (***Picea rubens***) saplings and one mature red spruce tree in an area of about 2-3 acres between a small, perched swamp and the southern end of the big sphagnum swamp on the east side of Bear Mountain. This population appeared to be in poor shape. The "saplings" looked old. The two largest (four to five feet tall) had dead leader shoots—much of their tops had died—and growth was continuing from lateral shoots. The other three saplings were at most two feet tall, displaying more horizontal, layered-type growth (like krummholz) than vertical growth. The mature tree (35' tall; 14" dbh) only had foliage in its top 6 feet or so—all of the middle and lower branches were dead. One nearby spruce of about the same size was dead. These were the only large red spruces we saw. There are many mature black spruce (*Picea mariana*) in the big swamp. One of the red spruce saplings was dwarfed and bonsai-like in appearance.

The habitat where red spruce occurs includes semi open mountain laurel (*Kalmia latifolia*) thickets, with a scattered overstory of red oak *(Quercus rubra)*, chestnut oak *(Quercus montana)*, and red maple *(Acer rubrum)* near the small swamp; a forest with tall chestnut oak, black birch *(Betula lenta)*, and hemlock *(Tsuga canadensis)* on the top of a steep rocky pitch just south of the big swamp (this was the location of the large red spruce); the big swamp itself, where one sapling red spruce was growing on a hummock in open conditions, with some mountain laurel, hemlock, skunk cabbage (*Symplocarpus foetidus*), and goldthread (*Coptis groenlandica*) growing near it.

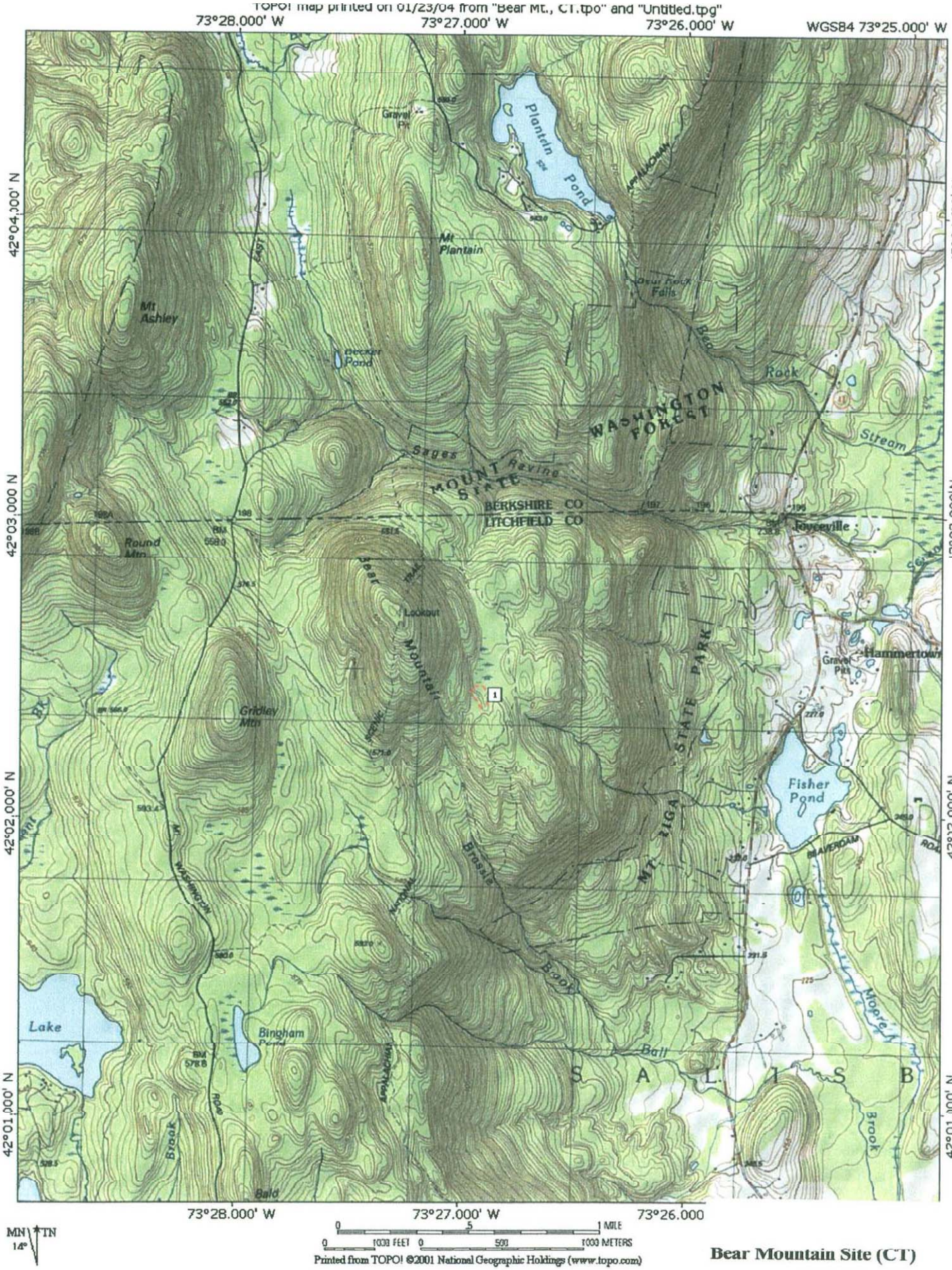
GPS points for red spruce: *N 42.02.374 W 073.26.905 (southernmost sapling); N 42.02.398 W 073.26.930 (large red spruce).*

GPS Datum
WGS 84

Threats
None

Management Actions and Recommendations
None

NOTE: More red spruce was found in this swamp later in the season. These findings and management recommendations will be discussed in the Connecticut Inventory.



Bear Mountain Site (CT)

1. Picea rubens

April 29

Great Falls, CT

with: Paul Palmer

Site Description
Disturbed, rich hardwood forest on calcareous outcrops. Site is a popular lookout with a network of much-used "unofficial" trails. Parts of the site are trashed.

Rare Plants
We found two tiny Carolina whitlow-grass (***Draba reptans***) plants just emerging through the leaf litter in a crevice—the same rock where we saw six plants in June 2002. There could be have been more *Draba* plants still covered with leaf litter on this rock and perhaps others.

GPS point of these two Draba reptans plants: N 41.57.764 W 073.22.354

We looked quickly at the round-leaf shadbush (***Amelanchier sanguinea)*** at the overlook. These shrubs looked fine—they were still in bud (leaf bud). (See 2002 Monitoring report for this population).

Weedy species noted on rocks near *Draba reptans*: *Centaurea maculosa, Cerastium vulgatum, Lonicera morrowii, Potentilla recta, Taraxacum officinale, Trifolium sp.*

GPS Datum
WGS 84

Threats to *Draba reptans*
Trampling, and possibly competition from weedy species.

Management Actions and Recommendations
Monitor this site annually. When I returned to this site in May, I did not see *Draba reptans*. This population should be checked again in May 2004. This site will be discussed in the Connecticut Inventory.

NOTE: *See 2002 Monitoring Site Report and Spreadsheet for map and GPS information for Great falls, CT occurrences. This information will also be summarized in the Connecticut Inventory report.*

May 29

Hammersly Ridge, NY

with: Ron Rosen

Site Description

Calcareous seepage swamp on a forested ridge. Many invasive species are in the swamp and surrounding woods.

Rare Plants

Devil's-bit (***Chamaelirium luteum)*** leaves had just emerged in the swamp and were very small. TNC has placed metal stakes and flagging in the swamp to monitor this population.

We also searched for and did not find scarlet paintbrush (***Castilleja cocinnea)*** in the swamp. In the forest north of the swamp we searched for large twayblade (***Liparis liliifolia)*** and the woodland *Chamaelirium luteum* population, but we did not find these occurrences either. The *Castilleja* and *Liparis* populations were only reported here once (1985) and have not been seen again by TNC or by New York Natural Heritage Program botanists. I have seen the woodland *Chamaelirium* population in the past, but in this year's cold and wet spring we may have been too early.

Threats

Berberis thunbergii and *Celastrus orbiculatus* are rampant in the swamp. TNC does not seem to have removed invasive species here in recent years (they have done so in the past). These invasive species will overrun the swamp, to the detriment of *Chamaelirium luteum*.

Management Actions and Recommendations

TNC should be contacted about its monitoring and management plans for *Chamaelirium luteum*. I recommend removing the invasive shrubs in the swamp with hand tools.

24 August

Cat Rocks (on the West Mountain ridge in Dutchess County), NY

Site Description

Semi-open ledges on the top of West Mountain. Species on the ledges: big bluestem (*Andropogon gerardii*), gray birch (*Betula populifolia*), poverty grass (*Danthonia spicata*), scrub oak (*Quercus ilicifolia*), winged sumac (*Rhus coppalinum*), little bluestem (*Schizachyrium scoparium*), silver-rod (*Solidago bicolor*), and early lowbush blueberry (*Vaccinium pallidum*).

Rare Plants

Lechea racemulosa: 85 individual Illinois pinweed stems occur in four scattered clumps on the open, southeast-facing ledges on the top of this ridge. This figure is larger than the number seen here in 2000. There has been some clearing along an access trail to the AT near the lookout, but the population has not been damaged by this activity.

GPS of Lechea racemulosa: N 41 36 424 W 073 37 112

GPS Datum

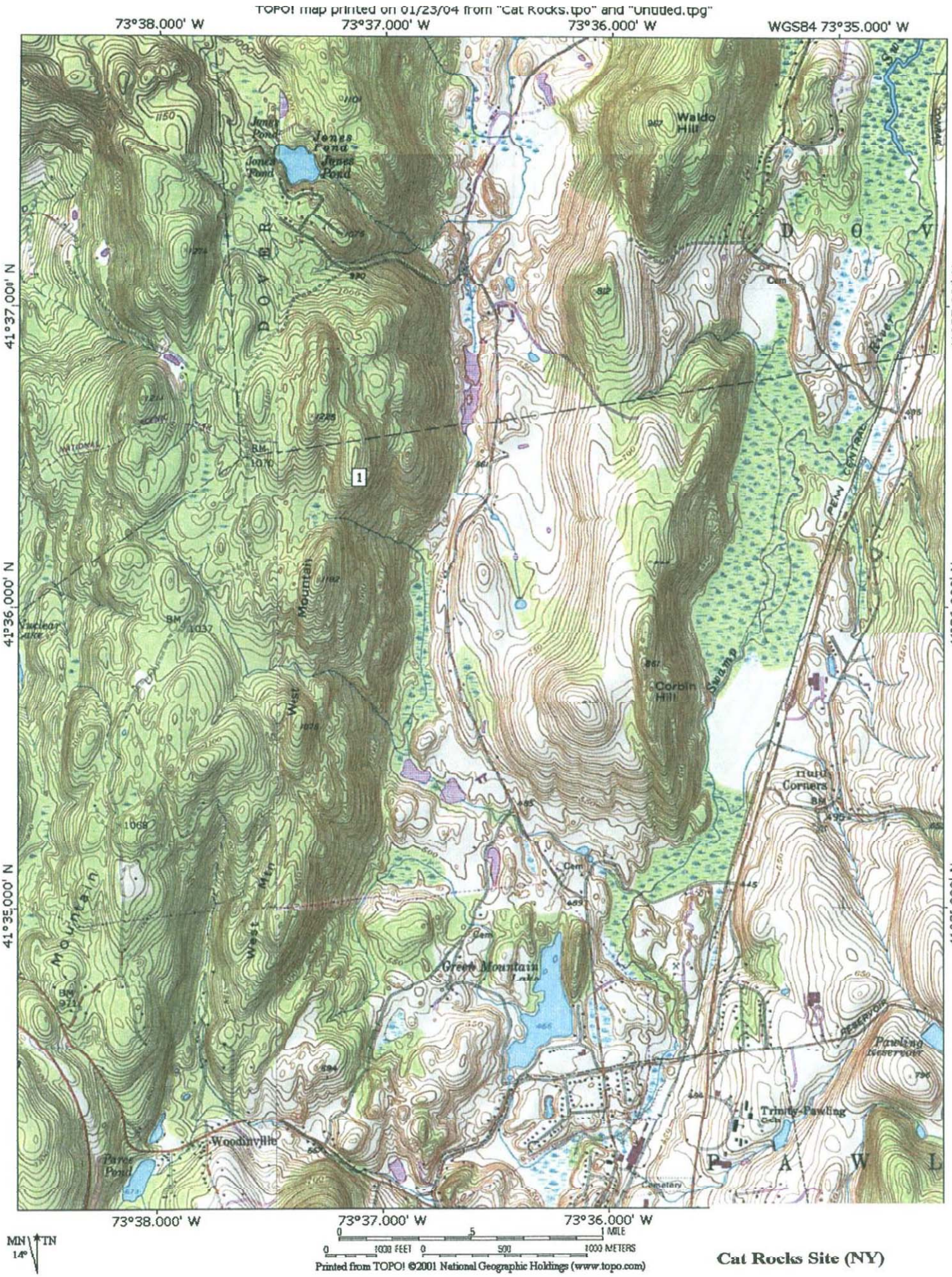
NAD 83

Threats

Accidental clearance during trail maintenance is a slight threat to this population.

Management Actions and Recommendations

A plant monitor should accompany anyone doing trail work in the vicinity of the easily-overlooked Illinois pinweed plants.



Cat Rocks Site (NY)

1. Lechea racemulosa

September 9

Tiorati Circle, New York

with: Roz Barnes (monitor) and Ed McGowan of the New York-New Jersey Trail Conference

Site Description
Sandy, disturbed roadsides and picnic grounds.

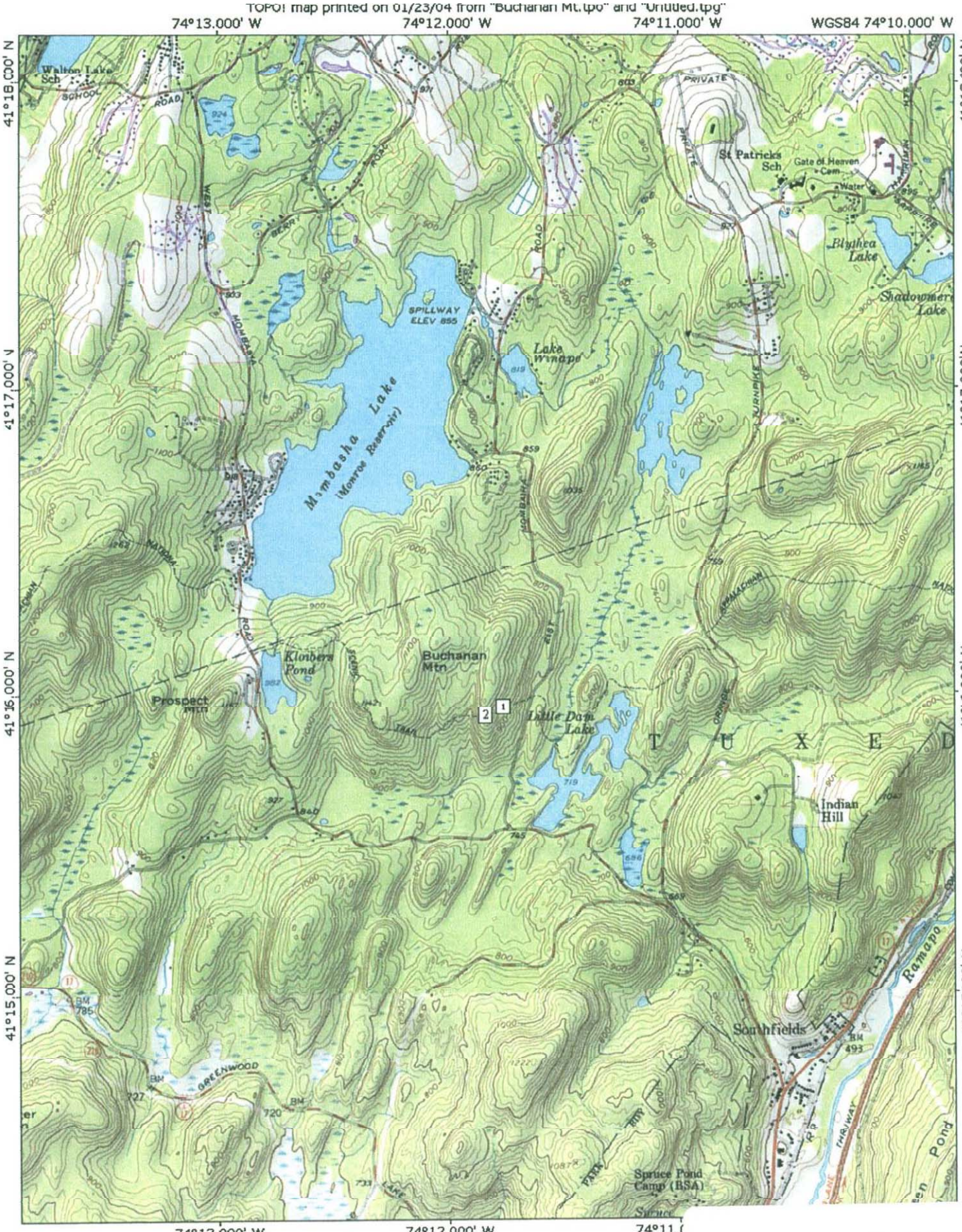
Rare Plants
We counted 3500 heath aster (*Aster pilosus* var. *pringlei)* stems along the weedy edges of Seven Lakes Drive and the dry, sandy upper shoreline of Lake Tiorati. This locally abundant plant tolerates such abuses as roadside mowing and heavy foot traffic. Its numbers are at least stable since it was first documented here in the 1990's. Associated species include: *Aureolaria flava, Conyza canadensis, Daucus carota, Erigeron annuus, Euthamia graminifolia, Prunella vulgaris, Silene cucubalus, Solidago bicolor, Solidago nemoralis,* and *Verbascus thapsus.*

GPS of Aster pilosus var. pringlei: N 41.16.491 W 074.05.326

GPS Datum
NAD 83

Threats
Trampling, road maintenance.

Management Actions and Recommendations
None except for monitoring. This hardy population is doing well.



Buchanan Mountain Site (NY)

1. *Corydalis flavula*
2. *Lechea racemulosa*

September 9

Little Dam Lake, New York

with: Ed McGowan

Site Description
Large pond.

Rare Plants
Our objective was to see if the common reed population (*Phragmites australis*) was spreading and threatening the pond's rare aquatic plants (*Ceratophyllum echinatum, Megalodonda beckii, Potamogeton diversifolius, and Potamogeton pulcher*) .

We saw a handful of Phragmites plants at the south and east ends of the pond. Ed. who had seen Phragmites here in the 1990's, believes the population has declined. The decrease may be due to elevated water levels from beaver activity.

From the shoreline I looked for but did not see water marigold (*Megalodonta beckii*). A boat is necessary for resurveying the rare aquatic plants found here by Richard Mitchell in 1999.

One unusual sight here was a musk turtle (*Sternotherus odoratus*) spotted by Ed just under the surface in shallow water below the footbridge on the Trail at the northern end of the pond.

Threats
Phragmites australis is present in very small numbers, and does not threaten the site's rare aquatic plants. There are no other evident threats to the rare flora in the pond.

Management Actions and Recommendations
Future surveys should reconfirm the presence of the rare aquatic plant species at this site, and also keep an eye on the potential spread of invasive wetland species around the pond's edges.

May 12

Buchanan Mountain, NY

with: Michael Needleman, Jerome_____(Michael's friend)

Site Description
Mixed hardwood forest of oak, hickory, and sugar maple on thin, rocky soils.

Rare Plants
We took a GPS point of the Illinois pinweed (***Lechea racemulosa)*** population on the ledges near the top of the mountain: *N 41.15.913 W 074.11.828 .*

We found yellow harlequin (***Corydalis flavula)*** on the mountain's eastern slope, near the Trail. We found 26 plants: 15 in flower and 11 vegetative stems growing on rocky ledges in a dry, east/southeast facing slope under a thin canopy of sugar maple *(Acer saccharum),* pignut hickory *(Carya glabra),* shagbark hickory *(Carya ovata),* chestnut oak (*Quercus montana).* and red oak *(Quercus rubra*). Also here are: *Carex pensylvanica, Potentilla simplex,* and *Saxifraga virginiensis.*

Most of the plants were in or near rock ledges, growing in leaf litter, concentrated in a small (1/4 acre) area downslope of the "*Lechea racemulosa*" lookout. One plant was found near the *Lechea racemulosa* population. Pale corydalis (*Corydalis sempervirens),* which has similar leaves but is a larger plant, also occurs here.

GPS of Corydalis flavula: N 41.15.943 W 074.11.799

GPS Datum
WGS 84

Threats
The Illinois pinweed population is at a slight risk of trampling.

Some of the yellow harlequin plants are also exposed to trampling, but the population appears to be secure. This species may be one of those that not only tolerates but is helped by a certain level of disturbance on the edges of the footpath.

Management Actions and Recommendations
The two rare plants at this site should be monitored annually. This site is the only known location for yellow harlequin along the Trail in New York.

May 12

Maple Hill, NJ

with: Mark Cirillo

Site Description
Mixed hardwood-hemlock bottomland forest.

Rare Plants
Rosy twisted-stalk (***Streptopus roseus***), inventoried in 2002 (see 2002 report for details and GPS points). The population looked healthy, essentially unchanged since last year.

Threats
Japanese barberry is present near the population.

Management Actions and Recommendations
We removed many Japanese barberry *(Berberis thunbergii)* shrubs in the vicinity of the rosy twisted-stalk population.

Mark was returning in 7-10 days to census the plants, accompanied by a reporter who is writing about rare plant monitoring activities. (I've forgotten the newspaper now, perhaps it was the *Newark Star-Ledger*. The New York-New Jersey Trail Conference knew about the article.)

Mark should continue to monitor the plants annually. Hemlock mortality and blowdown will increase light penetration to the forest floor in this deeply shaded bottomland. Large hardwoods dominate the site, so hemlock die-off may not have a serious impact on the *Streptopus roseus* population, but the process should be tracked.

NOTE: *See 2002 Site Monitoring Report for map and GPS points for Streptopus roseus at Maple Hill.*

April 24

Breakneck Mountain and Rattlesnake Mountain, NJ

with: Larry Wheelock

Breakneck Mountain

Site Description
Mixed hardwood-pine forest on the upper slopes of Breakneck Mountain.

Rare Plants
We looked at the red pine ***(Pinus resinosa)*** population on Pinwheel Vista ledges. We counted 33 trees: 14 mature individuals with cones, and 17 saplings. We saw two dead red pines. The population looks to be in good shape. Young trees look healthy.

GPS points of Pinus resinosa: N 41.12.778 W 074.26.721 (southern part of population): N 41.12.841 W 074.26.700 (northern trees).

We also checked the dwarf *Amelanchier* shrubs at the very top of Wawayanda Mountain. These were not yet in leaf—the leaf buds were swollen, but had not opened. There was no evidence of flowers among these sprawling shrubs. *GPS: N 41.12.704 W 074.26.649.*

GPS Datum
WGS 84

Threats
There are no direct threats to the red pines.

Management Actions and Recommendations
Because it is the only native red pine population in New Jersey, it should be monitored annually.

Rattlesnake Mountain

We checked a report of red pine on the south side of Rattlesnake Mountain. These trees turned out to be pitch pine *(Pinus rigida)*.

May 12

Breakneck Mountain, NJ

with: Sandy Parr

Site Description
Rich hardwood forest on the lower talus slopes of Breakneck Mountain.

Rare Plants
*Alleghony-vine (**Adlumia fungosa**): N 41.13.044 W 074.26.841 (south); N 41.13.114 W 074.26.795 (north)* Abundant on lower and mid-talus.

*Dewey's sedge (**Carex deweyana**): south end: N 41.12.983 W 074.26.841 (south); N 41.13.114 W 074.26.795 (north)* Common on the lower talus.

*Purple clematis (**Clematis occidentalis**).* We found three immature plants. Reading for two adjacent plants: *N 41.13.060 W 074.26.808; for the other plant, N 41.13.050 W 074.26.811.*

*Oak fern (**Gymnocarpium dryopteris**): N 41.13.077 W 074.26.827 (south); N 41.13.114 W 074.26.795 (north).* Many plants in this large population are concentrated on the northern end of ATPO land at the base of the talus slopes.

*American fly-honeysuckle (**Lonicera canadensis**): N 41.12.983 W 074.26.841(south); N 41.13.114 W 074.26.795 (north).* At least 200 shrubs are widely distributed on lower, shaded talus.

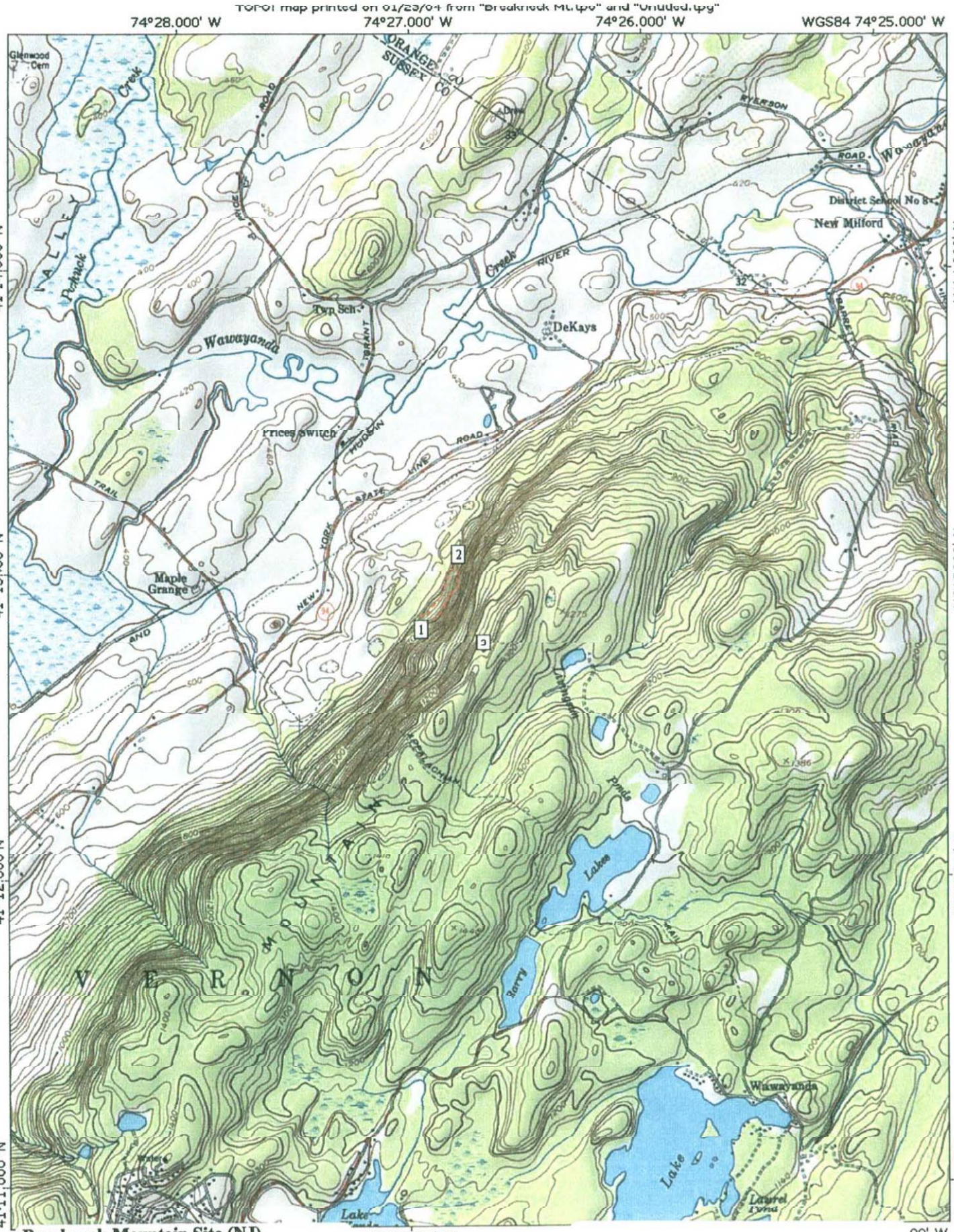
All of these populations are stable, occurring in approximately the same numbers as noted in 2002. There may be more purple clematis plants higher on the slope.

GPS Datum
NAD 83

Threats
The invasive garlic mustard (*Alliaria petiolata*) covers the lower talus slopes, but it is not certain that it is impacting the site's rare plants. The rare plant species are here in about the same abundance as they were when reported by David Snyder in 1990.

Management Actions and Recommendations
I removed scores of garlic mustard plants along the Trail in the lower to mid-talus area.

These rare plant populations should be monitored annually. Future surveys should search for more purple clematis plants and also for Hitchcock's sedge (*Carex hitchcockiana*) and pellitory (*Parietaria pensylvanica*), which has not been seen here since 1990.



Breakneck Mountain Site (NJ)

MI *Adlumia fungosa, Carex deweyana,*
13) *Clematis occidentalis,*
Gymnocarpium dryopteris,
Lonicera canadensis (all 1-2, range).

Breakneck Mountain Site (2) (NJ)

3. Pinus resinosa

24 August

Summary of ATPO clearance survey of Banks Pond, New Jersey-New York

Banks Pond lies on both sides of the New York-New Jersey border, on Appalachian Trail Park Office land at the northern end of the Pochuck Mountain site described in the New Jersey AT Inventory.

This site has several vegetation types:

1) a mixed hardwood forest on the south and southwest sides of the pond

2) an oak-hickory/ericaceous shrub forest on the northwest side of the pond

3) a hemlock-dominated forest on the steep slope and ledges on the east side of the pond

4) wetland fringe vegetation all around the pond--primarily herbaceous species and shrubs

The site has a fairly high diversity of community types and plant species. There are weedy species along the old woods road on the west side of the pond, and some of these have encroached into the surrounding hardwood forest. Stilt grass (*Microstegium vimineum*), Japanese barberry (*Berberis thunbergii*), Morrow's honeysuckle (*Lonicera morrowii*), and multiflora rose (*Rosa multiflora*) are common here.

Dominant trees in the mixed hardwood forest include red maple (*Acer rubrum*), black birch (*Betula lenta*), beech (*Fagus grandifolia*), and white ash (*Fraxinus americana*), red oak (*Quercus rubra*), and basswood (*Tilia americana*).

Tha oak-hickory forest on the pond's northwest side consists primarily of native plants. Pignut hickory (*Carya glabra*), shagbark hickory (*Carya ovata*), red oak, black oak (*Quercus velutina*), and sassafras (*Sassafras albidum*) are the primary trees.

Most of the hemlocks (*Tsuga canadensis*) in the forest on the pond's east side are dead. If the hemlocks were living, they would dominate this side of the pond. Other trees include black birch, gray birch (*Betula populifolia*), white oak (*Quercus alba*), chestnut oak (*Quercus montana*), and red oak. Deeply shaded hemlock stands (most now dead or dying) with a dense rhododendron (*Rhododendrom maximum*) understory occur on lower slopes on this side of the pond.

The wetland vegetation surrounding the pond is diverse and predominantly native. A short list of species includes: buttonbush (*Cephalanthus occidentalis*), winterberry (*Ilex verticillata*), arrow-wood (*Viburnum recognitum*), beggar's-ticks (*Bidens frondosa*), lurid sedge (*Carex lurida*) wood reed grass (*Cinna arundinacea*), water horehound (*Lycopus americanus*), cattail (*Typha latifolia*), and skunk cabbage

(*Symplocarpus foetidus*).

I did not find any rare species listed by New York or New Jersey at the site. However, much of the site is quite pristine and appealing, especially the steep slopes and huge boulders on the east side of the pond.

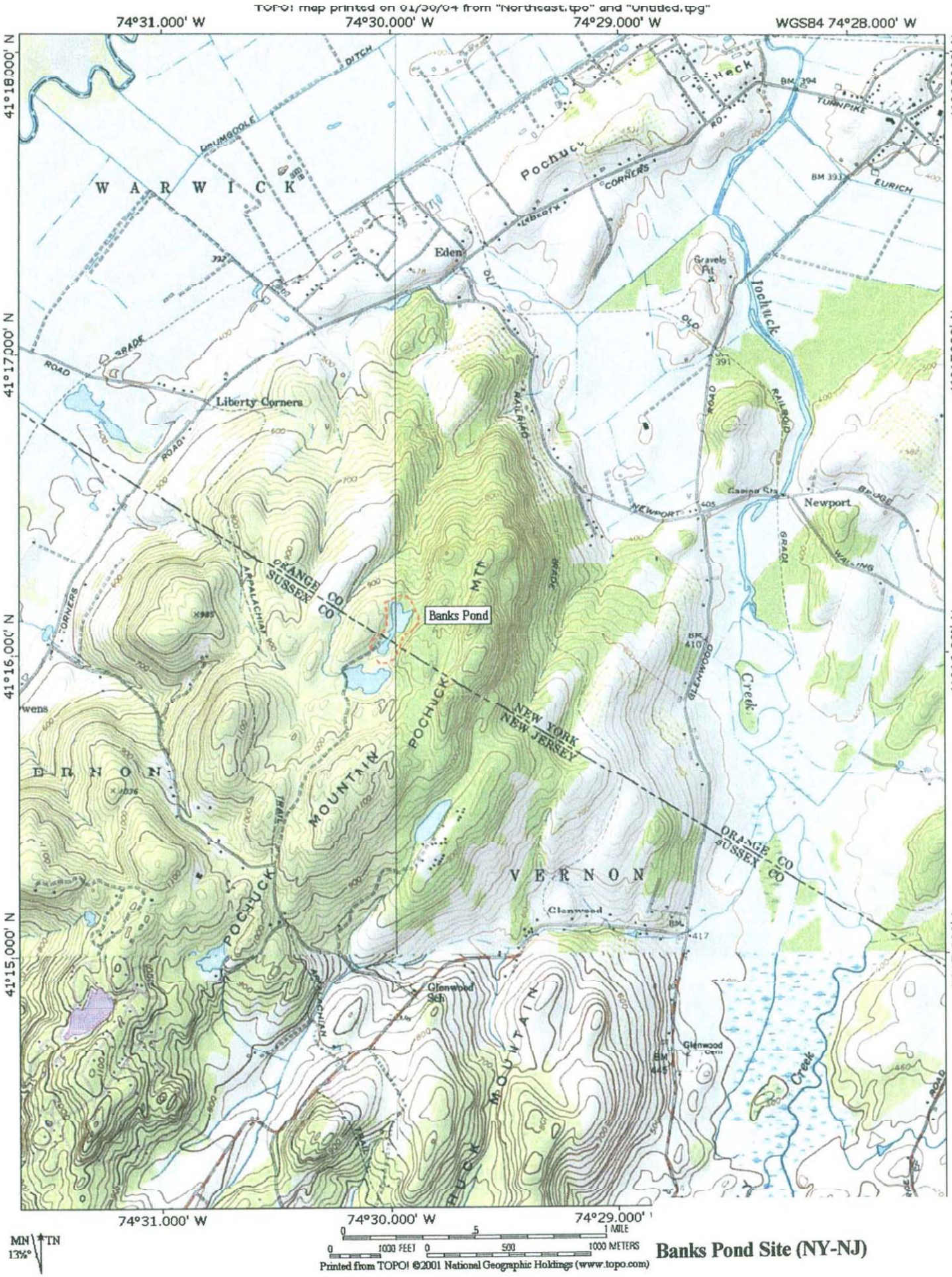
Someone has been either dropping or smacking golf balls into the woods here (from where in this forested site I don't know)--there were at least 30 balls scattered around the hemlock-rhododendron woods. But there is little other sign of direct human impacts.

It was good to see a pond in this area without purple loosestrife (*Lythrum salicaria*) or *Phragmites australis*. The pond itself appeared undisturbed, except for a few fishing bobbers. There could be rare aquatic species in the pond, and the site is potential habitat for the northern cricket frog (listed in NY-it occurs in Little Dam Lake to the north of this site).

Disturbance at the site could encourage the spread of the weedy species present along the roadway, especially stilt grass, and have an impact on the mostly native associations around the pond.

I recommend a visit to the site in late May or June 2004 to complete the natural resource inventory and to confirm that no early-blooming rare plant species are present around Banks Pond. I also recommend that someone familiar with northern cricket frog surveys (such as Ed McGowan of the New York-New Jersey Trail Conference) survey the pond for cricket frogs.

{This pond was the one highlighted on the map I received for the site, but there is a more disturbed pond, entirely within New Jersey, a short distance to the south. It occurred to me after the site visit that the disturbed pond could be the one under consideration for the clearance project. That pond is more "artificial" and weed-infested than the pond discussed here.}



Banks Pond Site (NY-NJ)

May 13

High Point North, NJ

I tried to arrange this visit with site monitor Steve Weissman, but we could not coordinate our schedules (he had visited the site on the previous weekend).

Site Description
Deeply shaded hemlock ravine.

Rare Plants
American fly-honeysuckle (***Lonicera canadensis)*** was in flower. The population looked healthy in spite of all the hemlock (*Tsuga canadensis*) mortality and blowdown. *Lonicera canadensis* grows along the creek and is vulnerable to slope erosion.

The location of the shrubs on the bottom of the ravine, where conditions are still cool and shaded, and the persistence of some hardwood canopy, may buffer the population from the effects of increased light. As Steve Weissman pointed out in an e-mail, the shrubs on the east side of the ravine are larger than those on the west, perhaps because of deeper shade (although hemlocks are dead here too). I noticed some *Rubus* (blackberry) near one clump of fly honeysuckle shrubs – it may have moved in since hemlock die-off. The spread of blackberry in canopy gaps and its potential competition with *Lonicera canadensis* should be monitored.

Rosy twisted stalk (***Streptopus roseus***) was found on the east side of the ravine. Some of the plants are near *Lonicera canadensis* shrubs right above the creek. Associated with rosy twisted-stalk are: *Acer spicatum, Arisaema triphyllum, Betula alleghaniensis, Dryopteris intermedia, Lonicera canadensis, Maianthemum canadense,* and *Tsuga canadensis.*

NOTE: this record is new for the AT corridor. When I e-mailed David Snyder, New Jersey State Botanist, he replied that he had seen this rosy twisted stalk population in 2002 when he was checking the American fly-honeysuckle shrubs at the site.

There are two clusters of rosy twisted stalk in an area of 3000 square feet at the bottom slope of the ravine (east side); a total of 16 flowering and 11 vegetative stems. The plants were vigorous this year. They grow in shaded to filtered light, on a steep, west-facing slope (>45 degrees), in very moist soil.

GPS readings of Streptopus roseus N 41.18.975 W 074.39.375; northern cluster: N 41.18.979 W 074.39.360

I took GPS points of two paper birch (***Betula papyrifera)*** trees about 0.5 mile north of the ravine. There was a total of six paper birch trees--four mature, and two immature trees in an area of one acre. One mature tree was almost dead from ice or wind damage. This tree may not survive another year: *N 41.19.525 W 074.38.965. GPS of a large, healthy*

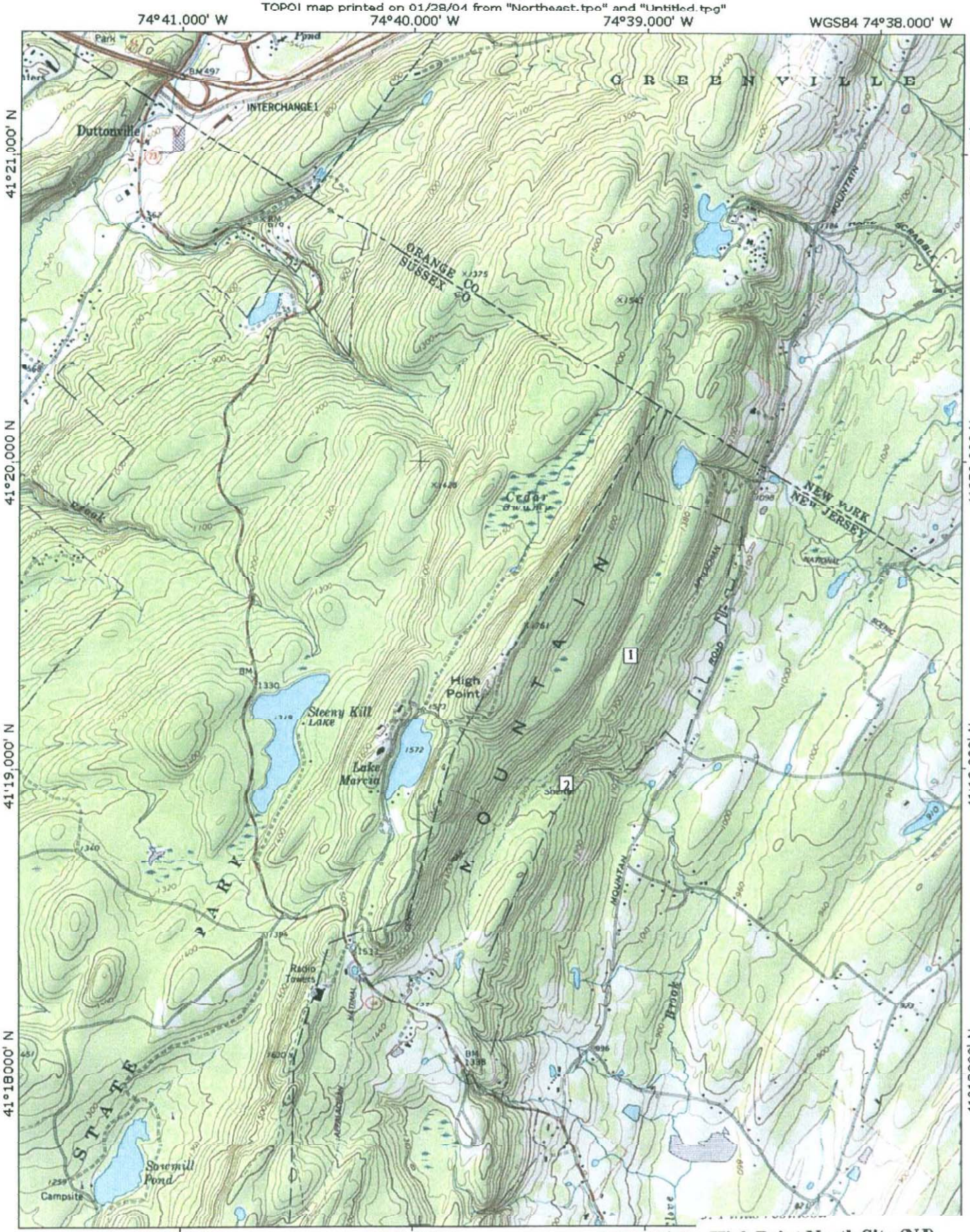
one: N 41.19.536 W 074.38.991. Southernmost paper birch noted: N 41.19.376 W 074.39.056.

There are gray birch (*Betula populifolia)* trees here also, as well as some trees that appear to be hybrids between the two species. I did not count these "hybrids". These individuals have the chevron trunk markings typical of gray birch, but also peeling bark typical of paper birch. Their leaves are intermediate between the oval form of paper birch leaves and the triangular shape of gray birch leaves.

GPS Datum
NAD 83

Threats
Hemlock mortality and blowdown, causing slope erosion and increased light penetration.

Management Actions and Recommendations
The American fly-honeysuckle and rosy twisted stalk populations should be monitored every year. Hopefully these rare New Jersey plants can withstand hemlock mortality, but the deep shade cast by the hemlocks is probably a major reason for their presence at this site.



High Point North Site (NJ)

1. *Betula papyrifera*
2. *Lonicera canadensis, Streptopus roseus*

May 13

High Point South, NJ

(no monitor for this site)

Site Description
Rocky bottomland forest dominated by red oak (*Quercus rubra*) and red maple (*Acer rubrum*) with a rhododendron (*Rhododendron maximum*) understory.

Rare Plants
I found two flowering painted trillium (***Trillium undulatum***) plants separated by 50-60 feet. This is the same number of plants as I'd seen in 2000, but then there was one mature and one vegetative plant growing together.

I looked for more painted trillium but did not find any. With good habitat conditions and no disturbance, it is surprising that the population is so small.

I searched for the historic (1960) population of *Carex brunnescens* in the swamp but the sedges in the swamp were immature and not identifiable.

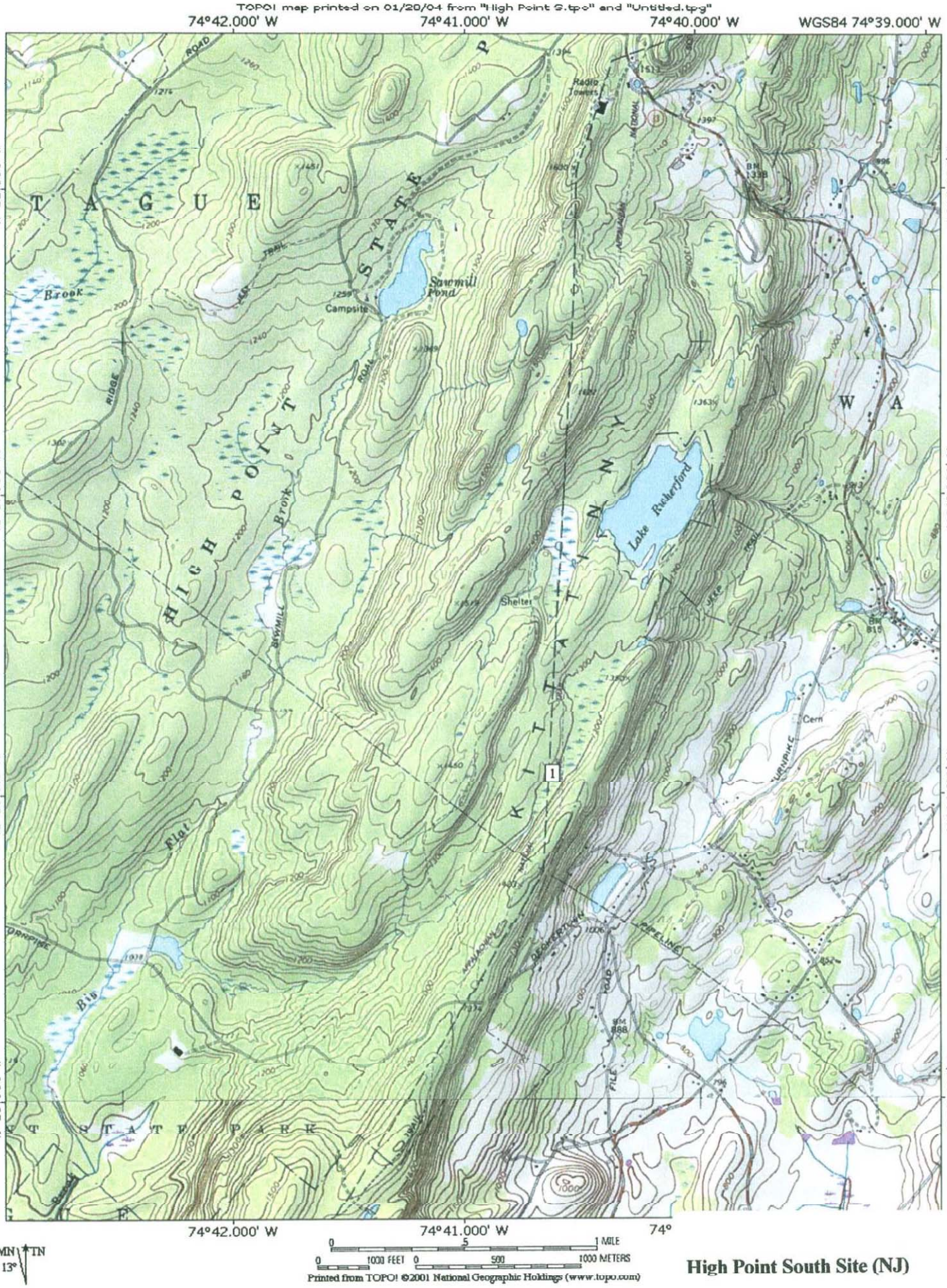
GPS of the painted trillium closer to the footpath (only 30' W of AT): N 41.16.074 W 074.40.559. GPS of the other plant: N 41.16.060 W 074.40.574.

GPS Datum
NAD 83

Threats
None

Management Actions and Recommendations
Monitor this very small *Trillium undulatum* population every two to three years.

Search again for *Carex brunnescens*.



High Point South Site (NJ)

1. Trillium undulatum

25 August

Big Offset Barren, PA

Site Description

Most of this site is dominated by chestnut oak (*Quercus montana*), red maple (*Acer rubrum*) and black birch (*Betula lenta*), but conditions around the rare species are slightly moister, and this area has an overstory of red maple (*Acer rubrum*), black gum (*Nyssa sylvatica*), and sassafras (*Sassafras albidum*). The site is overrun with stilt grass (*Microstegium vimineum*).

Rare Plants

Carex polymorpha: I saw the polymorphous sedge population described in the Pennsylvania AT Inventory (1990), but the area is dominated by a jungle of *Microstegium vimineum.*

Comparing these observations with the description in the PA Inventory, the *Carex polymorpha* population has declined. The PA Inventory does not mention stilt grass, and its invasion may be recent. Japanese barberry *(Berberis thunbergii)* is also scattered around the site.

I noted 150-200 sets of basal leaves of *Carex polymorpha*, but only one mature plant. I was late in the season for it (although Ann Rhodes of the Morris Arboretum told me the plant holds its spikes until late summer), and there may be more mature individuals here. The dense growth of stilt grass may conceal part of the population, but *Carex polymorpha* numbers appear to be down.

This stilt grass infestation is continuous for two miles, from the trailhead parking lot on Route 33 in Wind Gap northeast along the Trail into an acidic oak/heath forest where it finally fades out. The *Carex polymorpha* population is located along a 500-600 foot stretch of the footpath about 1.25 miles north of the parking lot.

One brief note that may or may not bear on the presence of *Carex polymorpha* here is the location of the population a short distance south of the southern limit of Wisconsonian glaciation along the AT route (according to the PA Guidebook).

GPS of Carex polymorpha: N 40.52.414 W 075.16.481 (north): N 40.52.388 W 075.16.522 (south).

GPS Datum

NAD 83

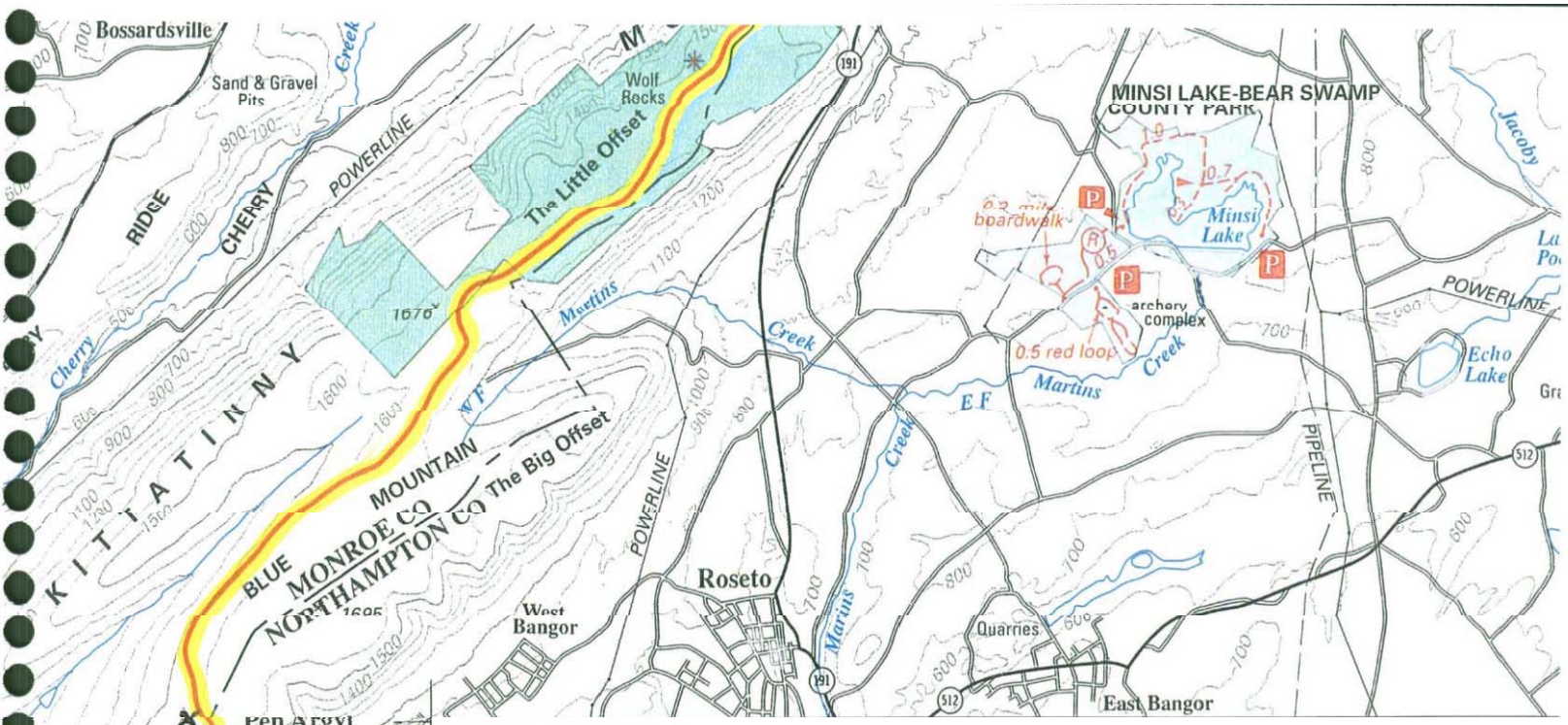
Threats

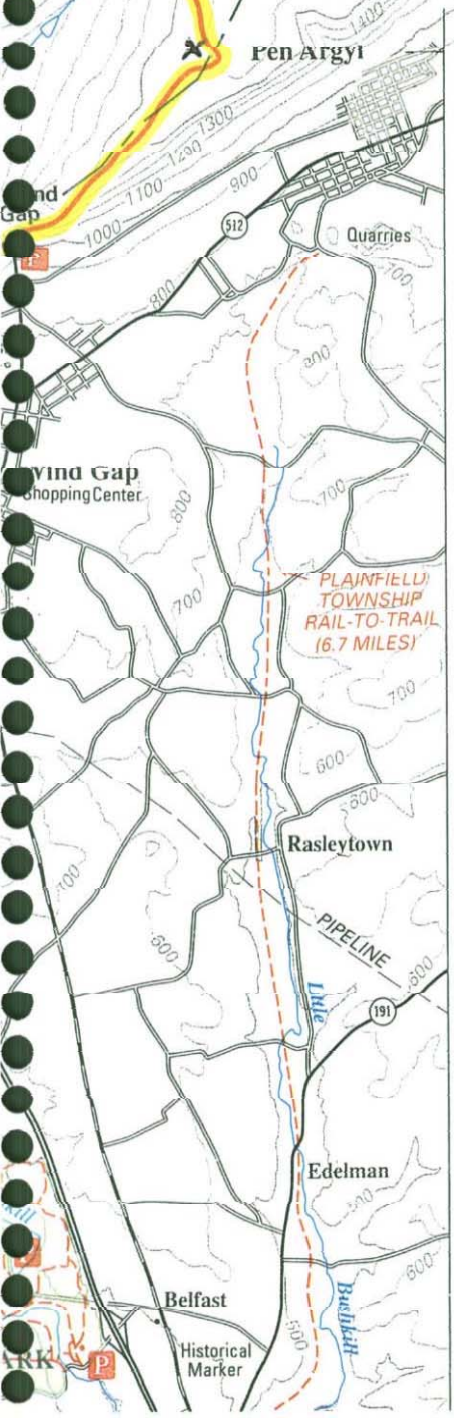
Microsegium vimineum.

Management Actions and Recommendations

It will be a laborious and time-consuming task, but hand removal of Japanese stilt grass around the *Carex polymorpha* plants would help the population. Removal should take place in late May or early June, before stilt grass (a late-flowering, annual species) reaches maturity. Stilt grass removal will need to be done with extreme care not to damage any of the *Carex polymorpha* plants. Since the plants grow together—stems and roots intermixed—this will be challenging. Alternatives such as herbicide treatments could be lethal for *Carex polymorpha*.

NOTE: the digitized mapping program used for this report does not include Pennsylvania. Following is the AT strip map showing the location for Carex polymorpha (1:63,360).





LEGEND

- Appalachian Trail (white blazes)
- other marked trails
  - blue blazes
  - red blazes
  - yellow blazes
  - orange blazes
  - green blazes
  - pink blazes
  - lavender blazes
  - Snowmobile Trail (orange diamonds)
- unmarked trail or woods road
- 1.2 Mileage distance (between symbols)
- Overlook
- Shelter
- Spring
- Developed water source
- Designated Campsite
- Designated off-road parking area
- Approximate site location

State Game Lands (no camping except along the A.T.)

State Park or State Forest Lands

National Park Service Lands

11°1 Magnetic North

N
W E
NORTH
S

All trail mileage shown are rounded up or down to nearest 1/10

1 ½ 0 1 2 3 Miles

SCALE 1:63,360

1 ½ 0 1 2 3 4 5 Kilometres

CONTOUR INTERVAL 100 FEET

APPALACHIAN TRAIL MILEAGE LOG

Big Offset Barren Site, PA

PA SECTION #1
DELAWARE WATER GAP TO WIND GAP

S >		S > N		N
	✕ *Carex polymorpha*			
0.		0.0	PA Route 33/Wind Gap	15

AT 2003 SITE MONITORING REPORT SPREADSHEET

SITE	SPECIES	COMMON NAME	G-RANK	S-RANK	GPSPOINTS	DATUM	ELEVATION
							(feet)
Saddleback, ME							
	Carex bigelowi	Bigelow's sedge	G5	S2	N 4455.631 W070.30.835 N 44.57.061 W 070.29.251	NAD83	3550-4120'
	Diapensia lapponica	Lapland diapensia	G5	S2	N 4455.631 W070.30.835 N 44.57.061 W 070.29.251	NAD83	3550-4120
	Hierochloe alpina	Alpine sweetgrass	G5	S1	N 4456.670 W070.29.802	NAD83	3559
	Minuartia groenlandica	Mountain sandwort	G5	S3	N 4455.631 W070.30.835 N 44.57.061 W 070.29.251	NAD83	3550-4120
	Rubus chamaemorus	Cloudberry	G5?	S4?	N 4456.884 W070.29.402	NAD83	3762
	Vaccinium boreale	Alpine blueberry	G3	S1	N 4455.631 W070.30.835 N 44.57.061 W 070.29.251	NAD83	3550-4120
	Viburum edule	Squashberry	G5	S4	N 4455.186 W070.31.468	NAD83	2675
Baldpate, ME							
	Diapensia lapponica	Lapland diapensia	G5	S2	N 4436.555 W070.53.515	NAD83	3765
	Minuartia groenlandica	Mountain sandwort	G5	S3	N 4436.511 W070.53.848	NAD83	3691
	Vaccinium boreale	Alpine blueberry	G3	S1	N 4436.252 W070.53.993	NAD83	3431
Moosilauke, NH							
	Carex bigelowi	Bigelow's sedge	G5	S3	N 4401.404 W071.49.899	NAD83	4792
	Empetrum nigum	Black crowberry	G5	S3	N 4401.166 W071.50.242	NAD83	4559
	Minuartia groenlandica	Mountain sandwort	G5	S2	N 4401.566 W071.49.814	NAD83	4722
Griffith Lake, VT							
	Carex folliculaa	Folliclesedge	G4G5	S3	N 4318.101 W072.57.399	NAD83	2582
	Geum macrophyllum	Large-leaved avens	G5	S3	N 4317.017 W072.57.591 N 43.17.945 W 072.57.729	NAD83	2707-2787
	Litorella americana	American shore-grass	G5	S2	N 4318.389 W072. 57.508	NAD83	2633
Paull Brook Ravine, MA							
	Hydrophyllumcanadense	Broad waterleaf	G5	S1	none		c. 1150
	Uvularia grandiflora	Large-fowered belwort	G5	S3S4	none		c. 1185
Kitchen Brook Drainage, MA*							
	Blephilia hirsuta	Hairy wood-mint	G5	S1	N 4234.671 W 073.10.533	NAD83	1653
	Panax quinqeiolius	American ginseng	G4	S3	N 4234.663 W 073.10.544;N 42.34.613 W 073.10.490*	NAD83	1340-1585

SITE	SPECIES	COMMON NAME	G-RANK	S-RANK	GPS POINTS	DATUM	ELEVATION
Day Mountain, MA							
	Panax quinquefolius	American ginseng	G4	S3	N 4228.023 W 073.09.568; N 42.28.133 W 073.10005*	NAD83	1239-1353
	Scirpus pendulus	Pendulous bulrush	G5	S3	N42.28.079 W 073.10.088	NAD83	1255
Hop Brook-Main Rd., MA							
	Ribes americanum	American black currant	G5	S4	N 4214.079 W 073.11.783	NAD83	922
	Carex tuckermanii	Tuckerman's sedge	G4	S1	N 4214.062 W 073.11.810	NAD83	922
Shaker Campsite, MA							
	Dentaria maxima	**Crinkleroot**	G5C	S3	N 4215.109 W 073.13.384	WGS84	897
	Podophyllum peltatum	Mayapple	G5	SU	N 4214.966 W 073.13.705	WGS84	1268
	Uvularia grandiflora	Large-flowered bellwort	G5	S3S4	N 4214.996 W 073.13.648; N 42.15.055 W 073.13563	WGS84	1039-1171
Vossburg Hills, MA							
	Agrimonia parviflora	Small-flowered agrimony	G5	S1	N 4208.871 W 073.22.890	NAD83	696
	Equisetum variegatum	Variegated horsetail	G5	S3	N 4209.150 W 073.23.004	NAD83	734
	Lobelia kalmii	Kalm's obelia	G5	S2	N 4209.150 W 073.23.004	NAD83	734
	Pelaea atropurpurea	Purple-stemmed cliffbrake	G5	S3S4	N 4208.978 W 073.22.654; N 42.09.117 W 073.22992	NAD83	732-817
	Penstemon hirsutus	Hairy beardtongue	G4	S1	N 4209.120 W 073.22.976	NAD83	761
	Quercus muehlenbergii	Yellow oak	G5	S3	no points--occurs throughout site	NAD83	730-820
	Verbena simplex	Narrowleaved vervain	G5	S1	N 4209.108 W 073.22. 999	NAD83	730
	Waldsteinia fragarioides	Barren strawberry	G5	S3	N 4209.158 W 073.22.980	NAD83	760
Hubbard Brook, MA							
	Cardamine bulbosa	Spring cress	G5	S2S3	N 4208.858 W 073.23.283	WGS84	673
Sheffield-Egremont, MA							
	Viola rostrata	Long-spurred violet	G5	S2S3	N 4208.714 W 073 24.654; N 42.08.705 W 073.24559	WGS84	714-783
Mt. Race, MA							
	Ilex montana	**Mountain winterberry**	G5	S2	N 4205.442 W 073.26.214	NAD83	1991
	Solidago simplex	Rand's goldenrod	G5T4	S1	N 4204.902 W 073.25.912; N 42.03.992 W 073.26212*	NAD83	1710-2345
Bear Rock Falls, MA							
	Ilex montana	Mountain winterbery	G5	S2	N 4203.951 W 073 26.288	NAD83	1734
	Solidago simplex	Rand's goldenrod	G5T4	S1	N 4203.642 W 073.26.134	NAD83	1317

SITE	SPECIES	COMMON NAME	G-RANK	S-RANK	GPS POINTS	DATUM	ELEVATION
Bear Mt., CT							
	Picea rubens	Red spruce	G5	S2	N 4202.374 W 073.26.905;W 42.02.398 W 073.26.930	WGS84	1795
Great Falls, CT							
	Dnba reptans	Carolina whitlow-grass	G5	S2	N 4157.764 W 073.22.35	WGS84	
Hammersly Ridge, NY							
	Chamaelirium luteum	Devil's-bit	G5	S2	none		
Cat Rocks, NY							
	Lechea racemulosa	Illinois pinweed	G5	S3	N 4136.424 W 073.37.112	NAD83	1152
Tiorati Circle, NY							
	Aster pilosus var. pringlei	Heath aster	G4G5	S2S3	N 4116.491 W 074.05.326	NAD83	1033
Buchanan Mt., NY							
	Corydalis flavula	Yellow harlequin	G5	S3	N 4115.943 W 074.11.799	WGS84	969
	Lechea racemulosa	Illinois pinweed	G5	S3	N 4115.913 W 074.11.828	WGS84	1001
Breakneck Mt., NJ							
	Adlumia fungosa	Allegheny-vine			N 4113.044 W 074.26.841;N 41.13.114 W 074.26795	NAD83	627-797
	Carex deweyana	Dewey's sedge	G5	S1	N 4112.983 W 074.26.841;N 41.13.114 W 074.26795	NAD83	627-797
	Clematis occidentalis	Purple clematis			N 4113.060 W 074.26.808;N 41.13.050 W 074.26811	NAD83	627-797
	Gymnocarpium dryopteris	Oak fern			N 4113.077 W 074.26.827;N 41.13.114 W 074.26795	NAD83	627-797
	Lonicera canadensis	American fly-honeysuckle	G5	S1	N 4112.983 W 074.26.841;N 41.13.114 W 074.26795	NAD83	627-797
	Pinus resinosa	Red pine	G5	S1.1	N 4112.841 W 074.26.700;N 41.12.773 W 074.26721	WGS84	1183
High Point North, NJ							
	Betula papyrifera	Paper birch	G5	S2	N 4119.525 W 074.38.965;N 41.19.373; W 074.39.056*	NAD83	1335
	Lonicera canadensis	American fly-honeysuckle	G5	S1	N 4118.979 W 074.39.360	NAD83	1235
	Streptopus roseus	**Rosy twisted-stalk**	G5	S1	N 4118.975 W 074.39.375;N 41.18.979 W 074.39360	NAD83	1235
High Point South, NJ							
	Trilium undulatum	Painted trillium	G5	S3	N 4116.074 W 074.40.559;N 41.16.060 W 074.40574	NAD83	1289

SITE	SPECIES	COMMON NAME	G-RANK	S-RANK	GPS POINTS	DATUM	ELEVATION
Big Offset Barren, PA							
	Carex polymorpha	Variable sedge	**G2**	S1	N 40.52.414 W 075.16.481 N 40.52.388 W 075.16.522	NAD83	c. 1500-1600
Plant species in bold are new occurrence records for the AT corridor.							
*= Range of species occurrence; more GPS points of individual plants are in the report.							
**GPS readings for Kitchen Brook Drainage are not accurate.							