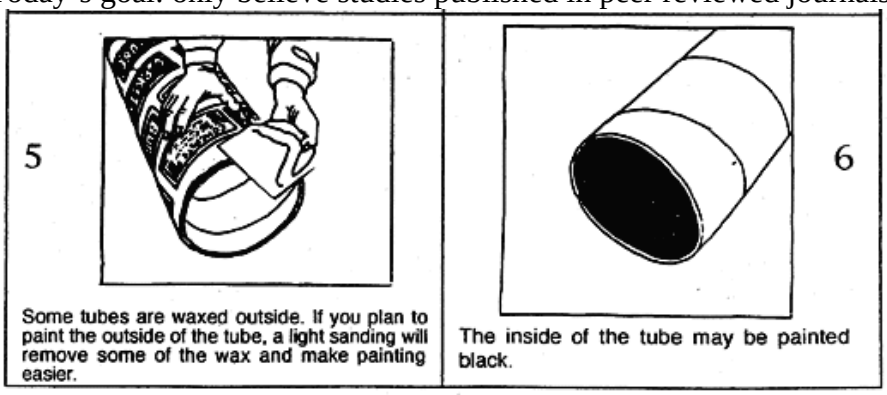
THE ENVIRONMENTAL SCIENCE PROGRAM 2006 | ts#2.

Today's goal: only believe studies published in peer reviewed journals.



Each panel tells a story – right?

These trip slips are truly deep, however, I leave it to you, the tripslip-ee to stay alert and sift trough the non-sense (of which I admit there will be plenty) and blatant disregard for line-breaks and somehow find the quality information that will prove to be immeasurable in the days to come.

~

This trip slip conveniently printed on post-aqua-fresh-whitening teeth white paper…yea, still white.

Today and/or tomorrows trip (depending on when you read this):

WEBSTER CONSERVATION AREA.

THERE'S A HAYFIELD UP NEAR BUXTON.

~

Pertinent Information:

Ts# (trip slip number): *2*
D|t (date and times): *July 6, 2006 | 9am-4pm*
Ml (meeting location): *Brown middle school*
L (leaders): *Jonathan Rivnay {617.527.1849} & Chris Leo-Palermino {617-926-0319}*
vEq (various equipment): *Hiking Boots, Water, Lunch, Field Kit (Raingear, First Aid, etc.), Bug Spray, Compass & Map, Notebook, maybe some writing utensils. Some enthusiasm wouldn't hurt.*

~

Informational Haikus {i5|7|5}:

Oh boy! First real trip.
Practice map and compass skills
How will we get there!?

Also called Hammond Pond.
Does Webster Cons have two names?
Yes. This is the case

Glacial formations,
So much succession in swing
What about the trees!

A Question for you:
The Hammond Pond appears brown
What's the real reason?

~

Boston.com predicts:

Wednesday,
July 6, 2006

p. sunny
H79 / L63

Mostly sunny with a high around 80. Not really a detailed forecast, but I guess it will have to do.

My conclusion: again, bring your raingear and lots of water.

This program must comply with the regulations of the Massachusetts Dept. of Public Health and must be licensed by the City of Newton Health Dept.

The even more exquisite 2nd day of ESP... better known as the first day of trips to:

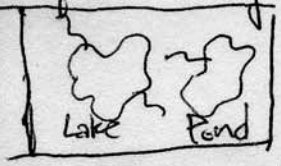
Leaders:
Chris Leo Palermino

THE WEBSTER CONSERVATION AREA

July 6th '06

(better known as Hammond Pond)

So here we go yet again... Day II of that crazy camp called ESP. Today we begin the oft repeated act of hiking around Newton and this time we are going to go to - well, we already established that previously. The joy of learning continues in this very tripslip you are holding. The first lesson, in which I just learned 5 minutes ago is the difference between a lake and a pond. Amazingly enough, a lake does not have to be larger than a pond. But a lake has an inlet and an outlet, whereas a pond only has an inlet.



At the Conservation area we will see glacier erratics, or big boulders deposited by a passing glacier, and Roxbury Conglomerate.

Important Stuff Needed:
Field Kit: Notebook, First Aid, Raingear, Sunscreen
Hiking Boots
Water (H_2O)
Lunch

In an emergency your child will be brought to Newton Wellesley Hospital (6172436000)

The program must comply with the regulations of the Massachusetts Department of Health and be licensed by the City of Newton Health Department

Have a great first trip...

[as for lack of something more insightful to say.]

The WEBSTER CONSERVATION

Tripslip #2
July 5th, 2005
Leaders: the one (two) the only
Lynda "the ——" Kovalchuk
(617)-584-2624
Ari "the cool kid" Miller
(617)-894-8160
When: 9 AM - 4 PM
Where: Brown Middle School

AY-REE-AH
(phonetic spelling is cool)

WOWEE! This is your first real trip with Envi-Sci. In the big book of life, this is one big page turn. Now it's time for... smaller writing. We're going to talk about evolution because there's going to be a cool Jeopardy-style gameshow bananza. The winners will get super coolness prizes. The Webster Conservation Area, also known as HAMMOND POND, is big and has lots of cool things to talk about. There are signs of glaciers long past. We'll see glacial erratics, which are big boulders deposited by a passing glacier. There will be lots of Roxbury Conglomerate (which we talked about on the First Day) and cool wildlife. Be ready to kick some glacial booty!

What to bring: hiking boots, daypack, H_2O, raingear, lunch, sunscreen, pen(cil) + notebook

Super secret stuff

Leaders: Jesse Sayles (965-2719) **TRIPSLIP # 3**

July 6th, 2000

Times: 9am – 2pm

Location: Brown middle school

Hammond Pond

Equipment: backpack, Hiking boots, lunch, WATER (two quarts), Field kit (notebook, pencils, first aid kit, extra boot laces, rain gear, sunscreen, bug stuff, pocket knife)

We are off to Hammond Pond to day, and hear is the deal. Next to Hammond pond is Bloomingdals (spelling?). Bloomie's, as my grandmother call's it has a flat roof. Flat roofs don't let rain run off like the triangulated roofs on your house. So all the water that accumulates on the roof gets drained through a pipe in to Hammond pond. Now, lots of birds perch on the roof of Bloomie's and theses birds, like all birds go poop, and all this poop gets washed in to Hammond pond, changing levels of nutrients and what not in the pond. So Martha Horn, a woman in the city who you will meat on Friday wants us to test the water to see if the bird poop is effecting the water quality. We will perform E coli test, nitrogen tests, phosphate tests, and ammonia tests, to determine this. If the bird poop proves to be effecting the pond Martha wants to make Bloomie's do something about it.

Now hear is my big question. The bird poop, along with the birds are part of nature, so why dose it matter that the bird poop is getting deposited in to the pond? Wouldn't this happen any way in nature? Is it wrong for humans, Bloomingdals, to move these birds which are part of nature? What do you think?

Webster Conservation

tripstip #2
7/2/04

Meet at: Brown Middle School
What to bring: daypack, lunch, water, raingear, first aid kit, bugspray

key: - leader
- student
- bug

Leaders:
Jeff Huenemoerder
(617-332-9506)
Mike McLellan
(617-244-0995)

Time: 9am - 4pm

Everyone make sure to bring bugspray, because you will need it once we get there. As you may be able to tell from the name, the Webster Conservation Area is a conservation area. It is a woody area, and a T-line that runs along the side of it.

The Webster Conservation area, aka Hammond Pond is full of a variety of life. For our first real trip of the year we will be wandering around looking at the different animals and plants.

Has anyone ever heard of a food web? Well, good thing I'm here to explain it then. A food web shows what eats what. It is actually the flow of energy, which is why the arrow points in the direction of what it is eaten by.

- The program must comply with the regulations of the MA department of health and be licensed by the city of Newton health department
- In case of emergency the nearest hospital is Newton-Wellesley Hospital 617-

Leaders: Mike McLellan (617-244-0998) Jeff Huenemoerder (617-332-9506)
Time: 9am - 4pm Meet @ Brown
What to Bring: Field kit, lunch, water, hiking boots, sunscreen is a good idea.

Congrats. You made it through the first day, alive I hope. To celebrate, we'll be going to Webster Conservation. Webster Conservation is a wonderful place and a hard two words to fit going across the center of a page. Also known as Hammond woods, Webster

Webster Conse...

sprawls across 113 acres of Newton. Somewhere in the woods is Hammond Pond and this is where we are going to go using the map and compass skills you learned. Along the way you'll learn the the difference between a pond and a lake. Or you can learn it now.

A lake has an outlet and an inlet

A pond has an outlet only.

Hurray for learning

In case of an emergency, your child will be brought to: Newton Wellesley Hospital 617-243-6000

This program must comply with the regulations of the Massachusetts Department of Public Health and must be licensed by the City of Newton Health Departmer

Leaders
Jeff Wong 332-3617
Peter Montague 969-4196
Date: July 2, 1996
Times: 9am - 2pm
Tripslip #2
Meeting Place: Newton South
Equipment: Field kit, lunch, water, hiking boots, sunscreen is a good idea

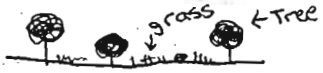
HAMMOND POND

Well, it's your first real trip today. That means you can show us the map and compass skills you have learned. Yay! So today we're hiking to Hammond Pond, remember to drink lots of water. Water is good, mmm...

Hammond Pond and Woods is part of a 113 acre conservation area in Newton. Do you know how the pond was formed? 14,000 years ago, the pond was carved by passing glaciers and then filled by receding glaciers. This type of pond is known as a kettle pond.

Like all other forests, Hammond Woods is going through something called forest succession. There are four stages of forest succession.

Pioneer stage

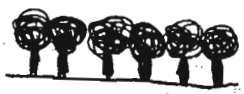


small trees, bushes

Midstage

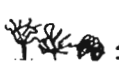
less grass, more plants + trees

Climax stage



little or no vegetation, almost all trees

Dying stage



Do you know what stage Hammond Woods is in?

So what's the difference between a pond and a lake? A lake has both an inlet and an outlet while a pond has only an inlet or nothing.

While we hike to and from Hammond Pond, you can impress Pete and I with your vast knowledge of the trees and flowers you learned about today.

HAMMOND WOODS

Agatha [illegible]
969-[illegible]
July 8, 199[illegible]
9:00 am - 2:00 p[illegible]

Equipment: boots, water, lunch, daypack, bug repellent, first aid kit.

Today we will be talking about geology [illegible] basically the study of what the earth is made of [illegible] other things the earth is made [illegible] of rocks. Igneous which is formed by [illegible] magma an [illegible] example of it would be brighton volcanic. Sedimentary which formed by many different kinds of rocks an example of this is roxbury conglomerate. Metamorphic [illegible] can be changed by heat and pressure and [illegible] example of this is [illegible] argentight. Does anybody [illegible] what [illegible] is? We also can see if we are [illegible] to [illegible] the [illegible] movement.

If you don't [illegible] is the difference between a lake and [illegible] pond? [illegible] we will review the stages of pond succession and forest succession. Bare [illegible], submerged vegetation, emerged vegetation, temporary [illegible], marsh and bog, pioneer stage, midstage and climax stage. [illegible] happens after climax stage. What happens [illegible] and why would this happen?

We will be walking around [illegible] inside the woods to see what we are able to identify and [illegible] to get lost because there are so many different paths. We [illegible] if we are able to find the flower garden. We might even be able to find some ripe blueberries.

Leaders:
Jeff Huenemoerder
(617-332-9506)
Amelia Runyan
(617-244-8836)

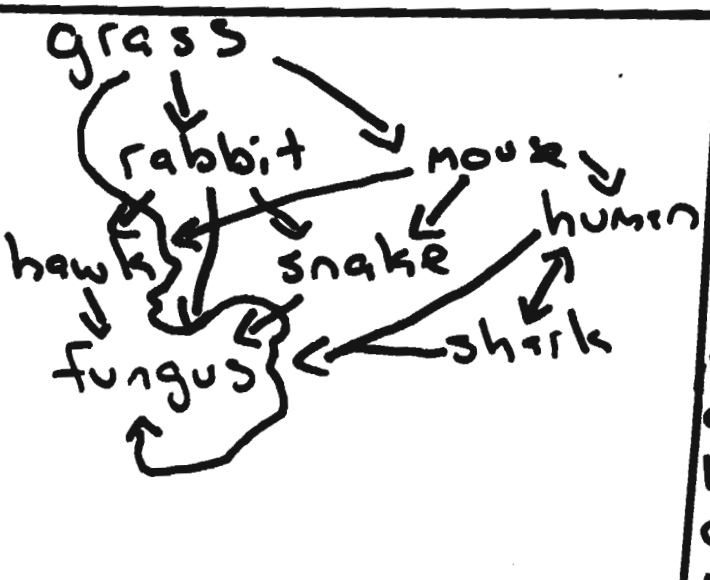
Webster Conservation Area

not conversation

Meet at Brown Middle School
July 2, 9am-4pm
Equipment: Boots, field kit, water, lunch, boots, sunscreen, bug spray, raingear, pocket knife

Quote:
"If you ever fall off the Sears Tower, just go real limp, because maybe you'll look like a dummy and people will try to catch you because, hey, free dummy."

Onto the first real trip. Today we will be going to the Webster Conservation Area (AKA Hammond Pond)(AKA Place Near Mikes House). It is a good place to go becau there is a lot of variety in the plants and trees.



←This is an example of a fo web. The arrows go in the direction of what each organis is eaten by (ex. grass eaten by mouse). Everything leads t the fungus, because when the die, Fungus will cover their body and eat them. If one organism was taken away, it

TRIPSLIP #2 7/2/03

WHERE? Brown.
WHEN? 9-4
WHY? 'Cause it's awesome.
WHO?
Amelia Rinyan
617-244-8836
Jeff Huenemoerder
617-332-9506

Webster Conservation ahead!!

WHAT? Boots, pack, field kit, raingear, H_2O -food for your tummy.

woohoo!!

Sup? Today we will travel to sunny Webster Conservation area, right next to the Fabulous Chestnut Hill Mall! It's a seemingly pristine park set in an urban-ish area, it even has (T) tracks running through it. So it can't be that pristine can it? We'll check out the effects this can have on the woods. Today we'll talk about chains, webs and ecosystems, too, and I might even teach you what an invasive species is. Webster conservation is a very large woods, so there is a lot to see, talk about and identify. We'll probably even play a game. So hold on to your hats because this is gonna be a rip-roarin' good time!!

Leader: Jesse, Jesse bo bessy, banana fana fo fessy, me my mo messy, Jesse. (965-2719) **TRIPSLIP # 3**

July 5th, 1999

Times: 9am – 2pm

Location: Brown middle school

HAMMOND WOODS

Equipment: backpack, Hiking boots, lunch, WATER (two quarts), Field kit (notebook, pencils, first aid kit, extra boot laces, rain gear, sunscreen, bug stuff, pocket knife)

Ms. Mide: Oh, hi everyone. Welcome to day number three of the Program. To day were headed to Hammond Woods with Jesse, the coolest leader in the world.

Jesse: True, true. It's hard being as cool as me, but if you wish to be, make shore you read all your tripslips, bring all your stuff to the Program every day, and take good notes. If this dose not give you the coolness factor that you desire, you can send away for my hypnotic suggestion tapes. They're only $49.99!! Any way, Ms. Mide, why don't you tell the students what's in store for them when we get to Hammond Woods.

Ms. Mide: Good deal! Well besides having whaky fun were going to review those Guidebook skills that you all hopefully learned on Friday. Were also going to learn about rock types. Anyone know what type of rock is predominantly found in Hammond woods? It's Roxbery Conglomerate! Hear to talk to you briefly about different rock types is "Men at Work." Hay guys, wake up!!

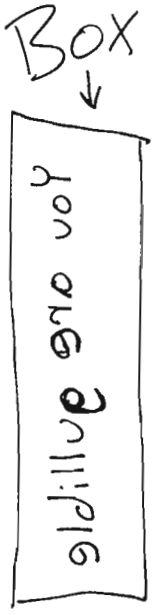
Men at Work: Oh, sorry Ms. Mide, were just tired because we just flew in from Astralia. Well, there are three mane types of rock. Igneous- which forms when magma, or lava cool. There are two types of Igneous rock. Intrusive which is when magma cools inside the earth's surface, and extrusive which is when lava cools out side the earth's surface. A second type of rock is Sedimentary- Which is formed when sediment is compressed together by lots of pressure (conglomerates are sedimentary). A third type is Metamorphic- which is formed when Igneous or Sedimentary rocks are changed do to temperature or pressure.

Jesse: Wow, thanks guys. Now let's rock. (Pun intended)

One extra credit point in life if someone can give an example of the three main types of rock!!

One extra credit point in life if someone can name a song by "Men at Work." Two if you sing it.

If you hold this tripslip up to a mirror and read what's in the Box, you will know the answer to life.



TRIPSLIP #2 You Made It Past Day One!

I KNOW IT WAS TOUGH, BUT YOU ARE THE SELECT FEW CHOSEN TO EXPLORE THE GREAT + WILD UNKNOWN OF...

WEBSTER ONS.

Equipment: Hiking Boots, H_2O, Field kit (First Aid, Rain gear, boot Laces, notebook + Pencils) + BIG ole' Lunch.

Location: Brown @ 8:30
Leader: Angela 617-527-7493

So, Webster Conservation Area, also called Hammod Woods, is a big area w/ lots of great wildlife, including deer. It is located right next to a deer park so maybe we'll get lucky. On this trip we will talk about all sorts of stuff like forrest succession, a huge rock from Africa, and maybe even do a test kit or two. Last year ESP did a community service project @ Webster, Extra credit to whoever can spot the mother of all trail blazers! It's your first real trip and we are going to make it one to remember. and since this is my last year w/ the program it is going to be my last first trip ever! :) See y'all bright and early tomorrow!

Gordon Roble #12
244-9304
7/19/94
9:00-2:00

Equipment:
Field kit
H_2O
Boots

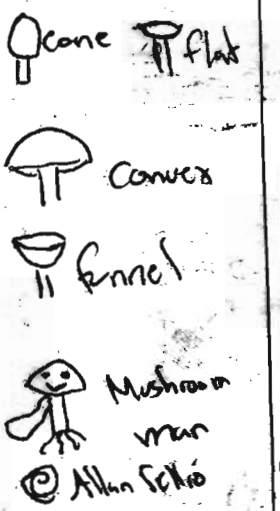
Webster Conservation area (also known as Hammond woods)

Interturned among the city of Newton is a 113 acre conservation area that includes Webster Conservation area, Houghton Garden, Hammond Woods, and the Webster Vale. The area we are going to be exploring is an old and stable forest, whereas if we stayed in Hammond woods, this is a very new forest. When we walk through I want you to see if you can find any evidence of this. Do you know what type of tree represents what type of forest. Some trees in a climax forest are beeches. But strangely enough in this area are also some plants that do not grow any where else in Newton. Therefore these plants such as witch hazel and the false hellebore, are therefore endemic to this area (actually not because they grow in other places.) When were on MA. Washington we will be near an area that has dwarf cingfoil, which is endemic to this area, it only grows there.

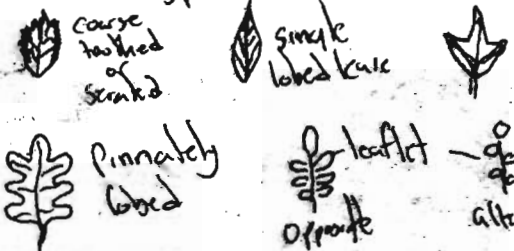
While were there we have a good chance to see many mushrooms since it is a marshy area.

Parts of a mushroom

Types of Mushroom



Well, we have learned to identify trees, but do you know the types of leaves we can find.



can you think of tree with these leaves?

Do you know it was 18,000 years ago when the glaciers left Mass. This is when Hammond pond was formed. It was dug out when the Glaciers advanced and filled with water from the receding Glaciers. Wacky huh!

Rachel 332-5932

2 July 1991 9 AM to 2PM

Hammond Woods area

EQUIPMENT:

- Hiking boots + extra laces
- Day pack
- Raingear
- First aid kit
- Pencils
- Notebook
- Knife
- Canteen/waterbottle
- Lunch
- Bug repellent

We will also bring a WATER TEST KIT and some FIELD GUIDES with us.

(1)

How do the different living things in the woods and the pond cooperate with each other and non-living forces to form a lasting community?

What are the roles of the various members of an ecosystem?

What cycles occur in nature to replenish nature's own supply of minerals and nutrients?

We will examine these questions as we explore the shade of Hammond Woods and the pond.

What do you think would happen if someone dumped fertilizer into Hammond pond?

(2)

evidence of GLACIERS.

How do glaciers move?

How is glacial pavement formed?

How did the glaciers affect our earth and its land forms?

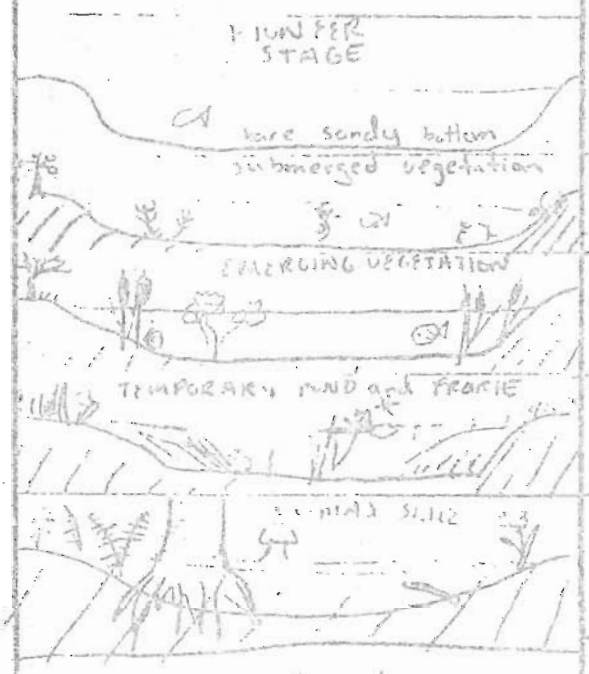
In which direction was the last glacier going?

How are rocks left from the glacier different from rocks formed by rivers or streams or lakes?

(3)

When is a pond a forest?

POND SUCCESSION



Does ecological succession end here?

(4)

The stages of pond development

PIONEER STAGE: bare sand/gravel bottom provides home for fish, insects, snails, mussels, and microscopic life

SUBMERGED VEGETATION: bottom supports algae, water plants, fish, mussels, insects, turtles, + small microorganisms

EMERGING VEGETATION: water plants, fish, amphibians, water-born air insects, turtles, catfish, cattails, bulrushes + spiders

TEMP. POND + PRAIRIE: [illegible] environments [illegible] bottom is above the water table. Birds, amphibians, insects, worms, snails

CLIMAX: Solid ground supports trees and forest life.

How long does this process take? Can it be speeded up or slowed down?

(5)

How do trees reproduce?

flowers

[illegible] scientific name for technically called "keys"

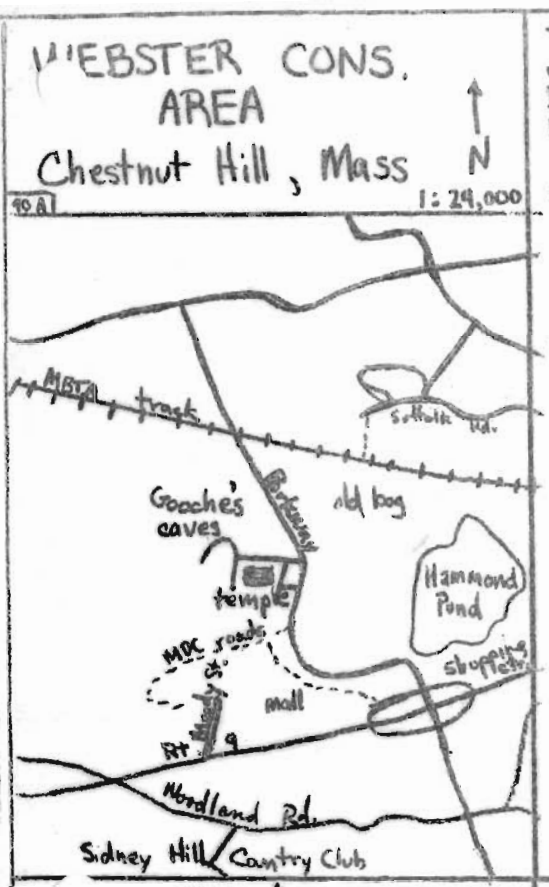
cones

fruit

nuts

berries

(6)



tripslip #2
July 9, 1974, 9AM-2PM
Dave, 969-6074
Webster conservation Area

GROUP:

Wear: standard hiking gear (Long pants are recommended since the underbrush is ocassionally very thick and patches of poison ivy line some of the trails we will use.)

Bring: complete kit (including rockhammer), Geology of Newton booklet, lunch. The following Golden Nature Guides may be signed out of the library: flowers, non-flowering

plants, birds

READING:
Basic Ecology: pp. 58-65, 83-87, 107-112, 103-4
Geology of Newton: pp. 3-6, 7-9, 11
Rocks and Minerals: pp. 121-123, 128
(Take notes if you have questions about the reading We will try to answer them as a group.)

OBJECTIVES
1) to see examples of several geologic features: glacial pavement, ripple marks, glacial erratic, contacts, joints, differential weathering, fissures

2) to learn the causes of the above

3) to do some plant iden-

tification and walk through an old cranberry bog (now drained)

4) to discuss the ecological history of the area in the 1900's (development, fires, succession, introduction of new species)

5) to learn to rely heavily on the topographic map

QUESTIONS
1) I have four maps of this area, made in 1894, 1956, 1970, and 1973. Between which two of these maps has the greatest change taken place? What do you think the area will look like in 1984, ten years from now? What about the shape of the pond? Size of the marshes? Out of the MDC maintenance roads?

2) What is the one word which sums up the changes which have been taking place here?

3) How do geologists know that glaciers once passed through this area and which direction they travelled? What do the following features contribute to this understanding: the Moody St. pavement? the scratches (striations) on it? the pond and bog? the large puddingstone boulders found away from their bedrock source?

4) How was the puddingstone (technical name: Roxbury Conglomerate) formed? How is it that the boulders are stuck into the rock? Are the boulders of uniform size?

5) What explanation can you give for the preserved ripple marks? How high above sea level is the glacial pavement they are a part of? Has it always had this elevation? Why or why not?

6) There are two explanations for the fissures you will see. One of them will be apparent when you examine what is growing in the fissures. The other is obvious in sub-freezing temperatures (so I hope not tomorrow!). Given these hints, what are the powerful rock-breakers at work here?

7) What stage of succession is Hammond Pond in? The cranberry bog? How have each of these processes

Webster (July 9) | Geology (July 10) DEK 7/5/74

page 7

been altered by man in the past? Are they still being altered?

8) How complete a picture of the forest biome are we getting in our nine-to-two jaunt through it? (HINT: reread pages 84-87 of Basic Eco.)

9) Can you fill some of the niches listed on pp. 62-64?

10) What is the dominant in this community?

11) What is the ecological significance of a rotting log? (i.e.: what niches does it provide for? what cycles is it part of?)

12) What is forest succes-

page 8

sion? Why is it that we can see adjoining parts of the woods in different stages (seres) of succession? Consider the effects of natural processes (fire, rainfall, sunlight, wind, elevation) and man-made processes (construction, road-building, pollution).

tripslip # 3
July 10, 9AM - 4 PM
Dave, 969-6074
Geology of Newton Bike Hike

GROUP:

NOTE: This is a bike hike! Make sure you have a decent bike in safe, working condition. A poor bike will curtail your enjoyment and if it means we have to take time to fix it the educational purpose of the trip will be undermined. If you have any trouble getting a bike, call me before the trip.

WEAR: standard hiking gear, shorts

BRING: full equipment kit

page 2

including all vials and rockhammer, Rocks & Minerals from the ESP library, windbreaker, lunch and extra beverage (not tonic)

PREVIOUS READING:
The Geology of Newton by Skehan & Barton (entire booklet)
Rocks & Minerals: pp. 5-7, 18, 20-21, 64, 75-79, 94-100, 108-128, 134-140

GENERAL DESCRIPTION
We will follow a basically clockwise route around Newton stopping at outcrops and glacial formations along the way. I have narrowed down the trip to 14 stops, with a total of 23 miles to be covered. This may prove to be too optimistic for our 9 - 4 day but if we

page 3

spend only 15 to 20 minutes at each site and if we have no bike problems everything should fit into the time allotted. We will take a one-hour break about halfway along the trip for a "class" in rock type, mineralogy, and glacial (surficial) features. During this break we will be eating lunch and resting for the second half of the trip.
Each member of the party will take a turn at leading the group from one site to the next. This will involve a considerable degree of map work. Be sure to have both your Newton topo and street maps!!

The following is a list of sites in the order we

page 4

will visit them. Before leaving NSHS we will spend a few minutes marking them onto our street maps and charting the shortest and safest route.

1) Oak Hill drumlin. (see stop #3 in Newton Geo.)

2) Nahanton St. outcrops. (see stop #4 in Newton Geo.)

3) Channel 56 tower. A metamorphic cliff exposed. CALCITE may be found in viens.

4) Hemlock Gorge area (see stop #5)

5) Williams Street outcrop. Metamorphic. CALCITE, EPIDOTE, ACTINOLITE, QUARTZ, ASBESTOS may be found.

page 5

#6) Burndale esker. A ridge of gravel deposited by stream channels between glacial ice. Partly leveled by Lasell University for campus space. A light forest now covers the remaining portion. One of five in the city.

#7) Holiday Inn outcrop. (approached by Grove St.) Metamorphic. SOAPSTONE, QUARTZ

#8) Loring Road outcrop. (Weston border) Only large grain granite we will see. It marks the edge of the "Boston Basin" which all of Newton is within. (see map opposite page 1 of Newton Geo.)

#9) Islands at intersection

page 6

of Forest Ave. and Highland Ave. (West Newton Hill) A contact can be seen between the Roxbury Conglomerate and the Mattapan Volcanics.

#10) Claflin School outcrop Behind the school is a sheer cliff face of metamorphic and igneous rocks. EPIDOTE and QUARTZ may be found. In front of the school, on the Lowell Ave. side are glacial striations. (see stop #7 of Newton Geo.)

#10a) Laundry Brook outcrop*

#11) Colby Street slate outcrop. (see stop #9 of Newton Geo.)

#12) Outcrops at 300 Tremont St. (Private property! Do not walk on the lawn.) A contact between two slate types.

page 7

#13) Bishopsgate Road. distorted folds in a sandstone outcrop. (see photograph, p.11 of Newton Geo.)

#14) Moody Street glacial pavement. This very exciting rock will climax our investigation. It features excellent examples of glacial striations, ripple marks, and a conglomerate erratic on the sandstone bedrock.

OBJECTIVES

1) to learn basic rock identification

2) to become familiar with geologic terms and Newton's geologic history

3) to learn proper rock-hammer use

4) to learn the proceedure of mineral identification

5) to see how geologic maps are made

6) to improve map skills

7) to build up endurance for the mountain sequence by putting in a long day of hilly travel

VOCABULARY:
sedimentary, igneous, metamorphic, contact, intrusive, cleavage, hardness, glacier, striation, erosion, esker, gorge, law of superposition, uniformitarianism

page 9

RULES ON BIKES:

1) We will ride exclusively on the RIGHT side of the road and use handsignals when appropriate.

2) We will maintain a SPACED single file line.

3) No separation from group allowed.

4) We will begin and end AT Newton South. There will be no leaving to go home directly from the route.

NOTE: At no time will we ride on route 9 or route 128 although some outcrops are nearby. We may use rt. 16 (Washington St.) or route 30 (Comm. Ave.) but the major portion of our route will be on residential roads.

****

PERMISSION SLIP
(must be read and signed by parent or you may not participate)

I give my permission for

_____ to participate in the bike hike described above. I understand that Environmental Science assumes no responsibility for accidents which may be encountered. Patience and good judgment will be exercised at all crossings.

_____(sig.)

****

* Laundry Brook outcrop: slate with good dip & strike examples (stop #10a — Newtonville, MA)

ENVIRONMENTAL SCIENCE PROGRAM

1 9 9 6

Tripslip #3
July 3, 1996
9am to 2pm
Meet at:
Newton South

Your Leaders

Dan Polivy
964-1313
Alex Kraus
964-7768

Equipment List

- Field Kit
- Lots of water
- Large lunch
- Bugspray and **sunblock**
- A sense of humor (and things to talk about)

Remember...

READ YOUR TRIPSLIPS!
*They contain **important** information about your trips! If you cannot make your trip, please be sure to call either Molly or your leader(s). Lastly, **HAVE FUN!***

Webster Conservation Area

What do we do there?

Webster Conservation Area is a great place to learn about pond and forest succession, take water tests, observe unique rock formations, and get bitten by bugs. We'll do a little bit of each, and then some. If you're lucky, Alex might show you some fungi.

Rocks, rocks, and more rocks...

Yep, you guessed it, this is about rocks! There are three main types of rocks: igneous, sedimentary, and metamorphic. They are catagorized by the ways in which they were formed.

Igneous: These rocks are formed from cooling and hardening magma. They are often uniformly shaped, formed of similar material. In our area, a good example of an igneous rock is **Brighton Volcanic**.

Sedimentary: These rocks have been changed by weathering (wind, galciers, water, erosion). They are identifiable by their mixture of textures and colors; they appear to be (and are) mixtures of sediments of other rocks and minerals. In our area, a good example is **Roxbury Conglomerate**.

Metamorphic: These rocks have been changed by heat and pressure (under the Earth's surface). In our area, a good example is **Cambridge Argilite**, which looks kind of like slate.

Things to think about...

Some of the rock in Hammod woods is from **Africa**! How did these rocks end up in Newton?
What do water tests indicate? What do the results mean?
What are striations? What do they tell us?
What are the stages of pond and forest succession?
What stage of succession is Hammond Pond in?

LEADER:
JENNY (964-2776)

HAMMOND WOODS AND POND

Tripslip #3
JULY 3rd, 1998

TIMES
9AM - 2PM

MEETING LOCATION
BROWN MIDDLE SCHOOL

EQUIPMENT:
HIKING BOOTS, LUNCH, WATER, RAIN GEAR, FIRST AID KIT, NOTEBOOK, PENCILS, COMPASS, EXTRA BOOT LACES, BUGSPRAY, SUNBLOCK

HAMMOND POND IS A KETTLE POND. A KETTLE POND IS A POND THAT WAS FORMED THOUSANDS OF YEARS AGO AS THE GLACIERS WERE MOVING EAST ACROSS THE U.S. HAMMOND POND WAS FORMED WHEN THE FIRST OF TWO SLOW MOVING GLACIERS CARVED IT OUT AND THEN THE SECOND RECEEDING GLACIER FILLED IT WITH WATER!

FOREST SUCCESSION

1. PIONEER STAGE - small trees + bushes
2. MIDSTAGE - less grass, more plants and trees
3. CLIMAX STAGE - little or no vegetation, almost all trees
4. DYING STAGE - everything dries out and dies this is when fires start

WELL, I HOPE YOU'VE ALL ENJOYED YOUR FIRST FEW DAYS OF THE PROGRAM! THIS AREA IS OFF OF HAMMOND POND PARKWAY AND NEXT TO THE CHESTNUT HILL MALL. NOT ONLY IS IT A FOREST AND A POND, BUT A GREAT PLACE TO STUDY GEOLOGY. BELIEVE IT OR NOT, SOME OF THE ROCKS FOUND IN HERE ARE THE SAME KINDS THAT ARE FOUND ON THE WEST COAST OF AFRICA! HOW IS THAT POSSIBLE? YOU WILL SEE, HAVE NO FEAR! WE WILL ALSO PRACTICE OUR SKILLS USING FIELD GUIDES HOPEFULLY!

Q: WHAT'S THE DIFFERENCE BETWEEN A LAKE AND A POND?

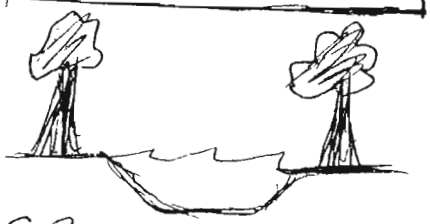
A: A LAKE HAS BOTH AN INLET AND AN OUTLET WHILE A POND JUST HAS AN INLET.

Q. WHAT ARE HAMMOND POND INLETS??

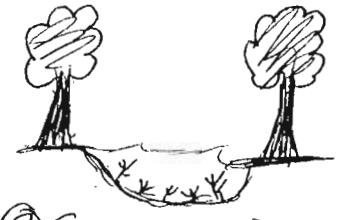
A: YOU'LL FIND OUT WHEN WE GET THERE!

POND SUCCESSION

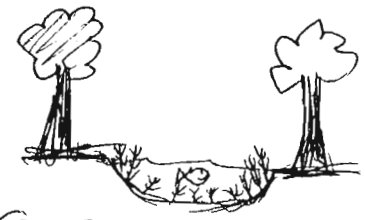
POND SUCCESSION HAS 4 STAGES!
WHAT STAGE IS HAMMOND POND IN?



1. BARE BOTTOM



2. SUBMERGED VEGETATION



3. EMERGING VEGETATION

4. TEMPORARY POND AN PRAIRIE

WEBSTER CONSERVATION AREA

TRIPSLIP: #4 PG 1
JULY 10, 1989 of 2

LEADER: Cole Stanton (964-5857)

Equipment: Field Kit

9-2 am pm including your MAP & COMPASS and BOOTS

NSHS Insect Repellent

PLUS Field Guides & Test Kits which I will give you in the morning.

Hi, this Monday you and I are headed for one of the classic ESP trips. The Webster Conservation Area is a large preserved tract of woodlands containing varied forest environments, an arboretum, MBTA tracks (Yay!), a deer park, fissure caves, glacial pavement and several other natural wonders. From the forests of Hammond Woods to the edges of Hammond Pond to the asphalt of the Chestnut Hill Mall this trip is a great survey of many environments ESP visits.

FIG. 1

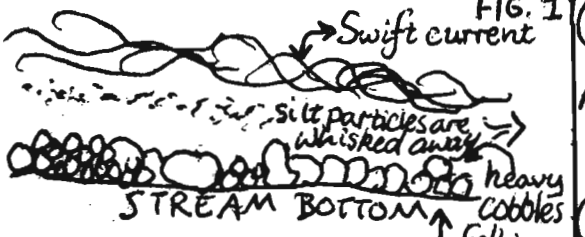


FIG 2.

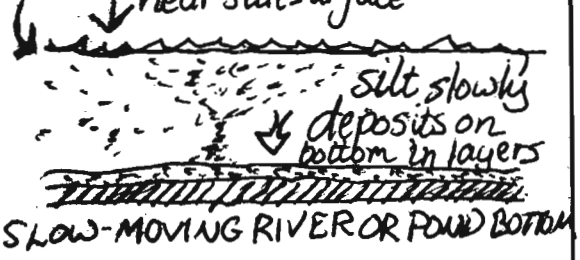
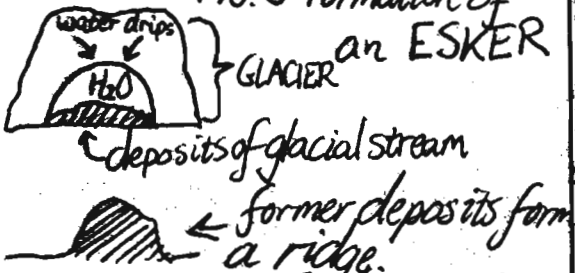


FIG. 3 Formation of an ESKER



Can you find an esker at Webster Conservation Area?

Some great things to think about:

① ROCKS FOR HIKING JOCKS (like us!)
aka - GLACIAL GEOLOGY & ROCK FORMATION

The geological foundation of Webster Con. is very similar to that of the Newton South area. The majority of the rocks are Roxbury Conglomerate or Puddingstone. In addition we will see a outcrop of a sandstone called Cambridge Argilite. Puddingstone as you have seen has formed from heavy cobbles cemented together. Cambridge Argilite is sand and silt compacted into a stone. Out of which environment, fig. 1 or figure 2 would each of these stones be deposited? Naturally these are (choose one) (a) SEDIMENTARY (b) IGNEOUS (c) METAMORPHIC stones in origin. Right?

Several small stones, neither Puddingstone nor Argilite can be found littered everywhere. How did these get everywhere? This is TILL. Glacial TILL is the gravel spread all across New England that the glacier had brought with it without a proper invitation and proceeded to leave it here.

② GLACIAL GEOLOGY

③ PLANT LIFE to see and experience

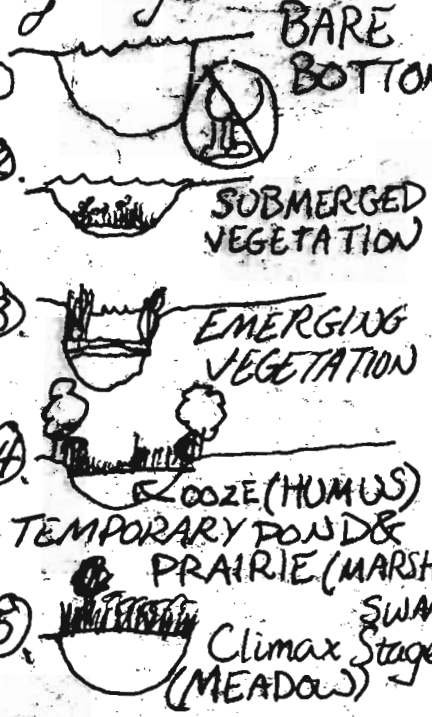
Trees: (my favorite)
White Oak, Red Oak, Sugar Maple, Red Maple, American Basswood, Black Locust, Hemlock, Norway Pine, Cedars, White Pine, Norwegian Spruce.

Smaller Plants: False Canada Mayflower, False Solomon's Seal, Lily of the Valley, Blueberry, Wood Sorrell, Pond Lily, Lady's Slipper, Cranberry Viburnum.

Lichens & Mosses & Ferns: Bracken Fern, Star Moss, Leafy Lichen, Rock Tripe, Broadleaf Fern, Sweet Fern, Sphagnum Moss

We will also take some time to examine Hammond Pond. All ponds are slowly filling in with decaying vegetation and eventually will become meadows which continue to evolve into forests. These natural processes are called SUCCESSION.

POND SUCCESSION has the following stages:



QUESTIONS

How do you get a bare bottom?

When do fish cease to survive?

What is the difference between a marsh and a swamp?

Leaders-
Alex Kraus
(964-7768)
Dan Polivy
(964-1313)

Webster Conservation Area

Tripslip # 3
7/3/96

Yeah! Another great trip! The Webster Conservation Area has a lot of good things to see and do. We will probably be talking about succesion, mushrooms and their anatomy, glacial geology, rock formations and why the world is round. We will also probably be testing the water. And you can bet there will be plenty of things to identify. Hoorah!

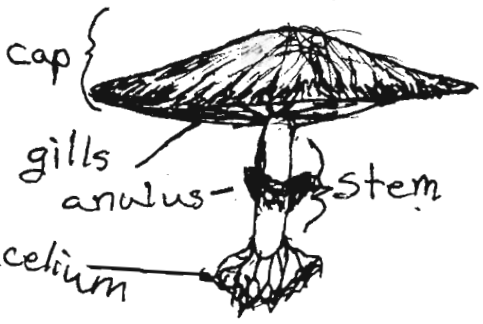
Equipment

- Daypack
- Notebook
- Raingear
- Hiking boots
- H_2O
- Lunch
- First Aid Kit
- Pencils
- Map & Compass

Bug spray maybe

mr. mushroom

Mushroom Anatomy



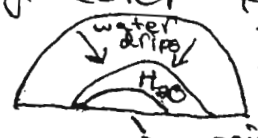
Did you know that a mushroom is only the reproductive structure. The mushrooms usually only come up after rain etc... whereas underground there is a mycelium mat all the time?

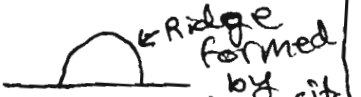
Geology (a subject which seems to be beyond everyone but Dan Thomases)-

In Webster Conservation Area there are many geological wonders including; esker, [redacted] pavement, glacial erratics, cracks caves, glacial till, and fissures.

A glacial eradic is a random boulder, usually large and alone that's dropped and left by a glacier. Fig. 1

An esker is when deposits from a glacier form a ridge.

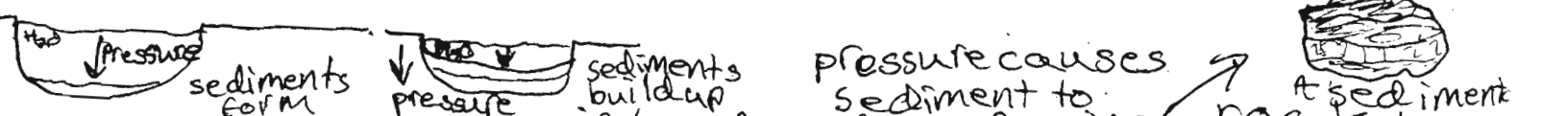




Glacial till is when a glacier deposits a large amount of small rocks

Two local rock types to be found in the Webster Conservation Area are Roxbury Conglomerate (aka Pudding stone) and Cambridge Argilite. These are both sedimentary rocks.

How sedimentary rocks form-



Leaders: Jesse Sayles (965-2719)
Sarina Yospin (969-9366)

TRIPSLIP # 2

July 5th, 2000

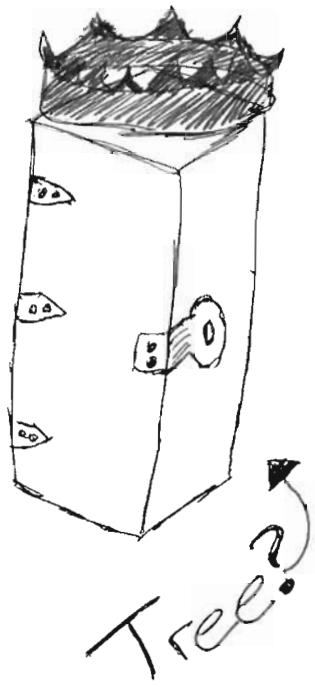
Times: 9am – 2pm

Location: Brown middle school

Webster Conservation Aria

Equipment: backpack, Hiking boots, lunch, WATER (two quarts), Field kit (notebook, pencils, first aid kit, extra boot laces, rain gear, sunscreen, bug stuff, pocket knife)

Today we're going for a walk
To Webster conservation aria for a talk.
Going to chat about trees
Talk them up good.
Going to get down on our knees
And talk about wood.
How dose a tree, make its food?
Why can't a tree shake its groove?
All of theses questions we'll answer in time,
Like what's the difference between an oak and a pine?
And why in this area are there all these trees to which we rhyme?
The answer to this involves a lot of time.
See back in the day
The land was quite barren
But in came some pioneer organisms that started sharin'
The soil that they maid.
See in the beginning there was nothing but rock,
And these pioneer org's were of the lichen stock.
Well over the years bigger things started to grow,
Broke down more of the rock,
Died as well
Produced rich soil,
Things could grow quite swell.
Now maybe you can answer some of the questions asked above?
If you can't that's legit,
We'll talk about them a bit.
If you can, put them to hand, to the right.
Put them to rhyme if you got the time.
So bring your mind, your lunch, your water too,
Strut them forth in that hiking shoe.



TRIPSLIP #2
7-2-02
9AM-4PM

Leader:
Sarina Yospin
(969-3966)

Meet at:
BMS
Brown Middle School

Webster Conservation Area

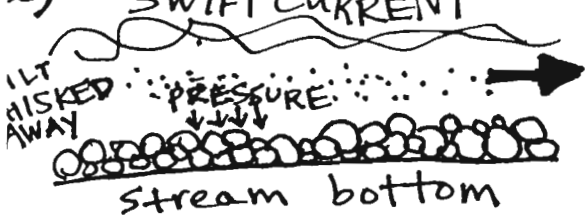
Equipment:
Field kit, lunch, WATER, boots, sunscreen if you're smart

YOWZA! This is your first real trip, and though that may not sound like a huge deal, it's like they say: one small trip for an Envi-Sci student, one giant leap of a trip for Envi-Sci kind. Or something. The Webster Conservation Area is really cool because it shows all sorts of cool geology and science-type stuff. Rock (HA HA)

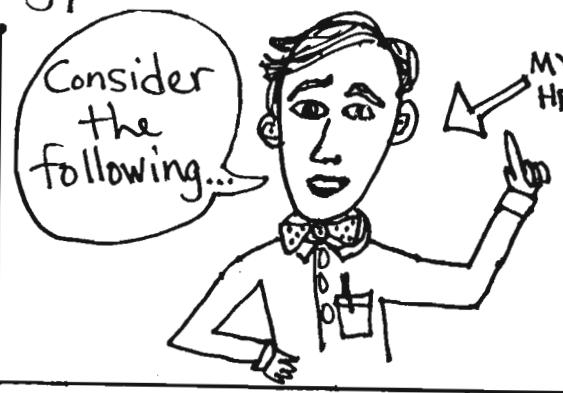
Roxbury Conglomerate
(a.k.a. "Puddingstone")

Well, you guys know all about this from yesterday, and we'll be seeing it all over the place today. So which of these situations do you think shows the formation of this ever-popular sedimentary rock?

a)



b)



iBOX!

I bet you're wondering what this box is for. Yep. So...

Glacial ERRATICS

Sometimes, as a glacier's cruisin' along, it drops rocks and debris it has picked up in its travels. Big boulders in the middle of nowhere that were thusly deposited are called glacial erratics (see title). True story: my first year as a student, I thought my leader called them glacial erotics.

Tripslip #2

Leaders: Sarina Yospin (969-3966)
Jesse Sayles (965-2719)
Date: July 5, 3045

Time: 9:00-2:00
Meeting spot: Brown Middle School (BMS)
Equipment: Hiking Boots, big lunch, lotsa water, FIELD KIT in your daypack (extra boot laces, pocketknife, first aid kit, raingear, pencils, notebook, compass, map, this tripslip), one extra large barrel of laughs

Hope you had/have a good 4th of July!

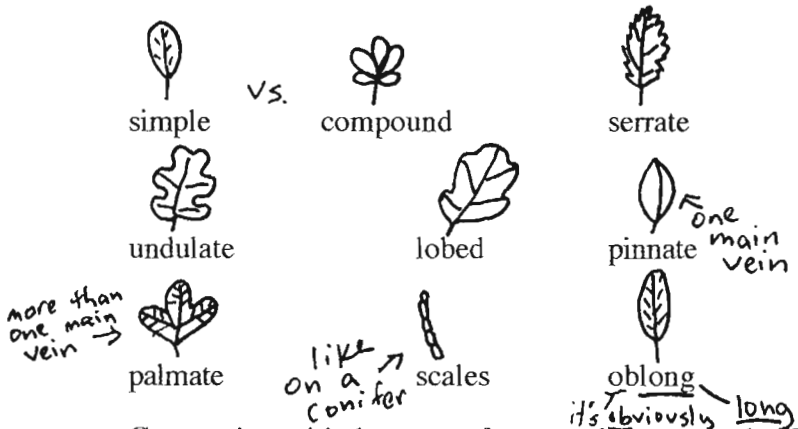
So, today is your first real trip with Envi-Sci! I hope you are all extremely psyched, because we're headed to...

The Webster Conservation Area

"Two Thumbs up!" - S(arina) iskel and (Jess)Ebert

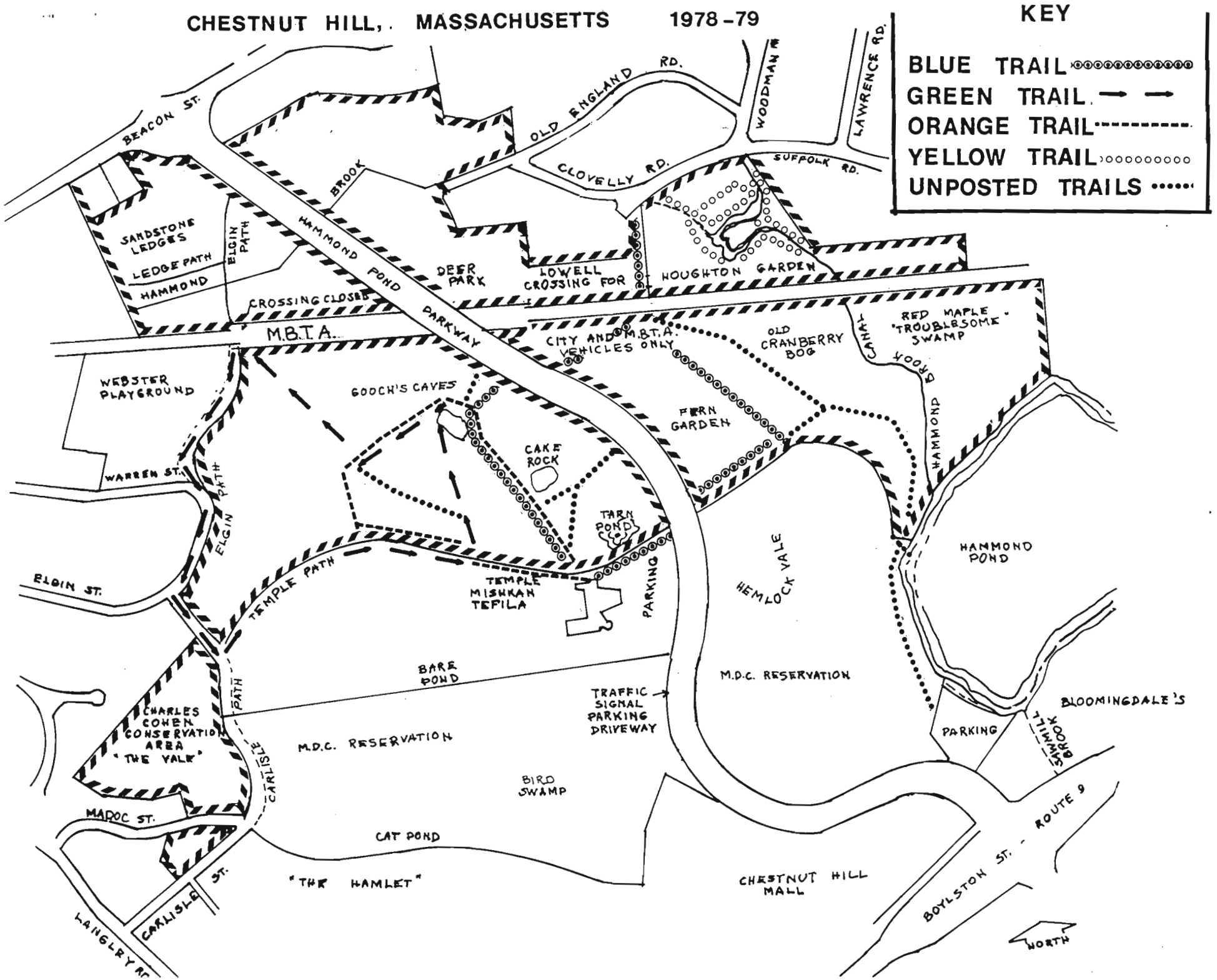
This place is cool. There's birds, there's squirrels, there's trees. There could even be fungi and flowers, too. So here is your mission, should you choose to accept it (please don't be fooled; you really have little say in the matter): As official student ambassadors from Planet Envi-Sci, you must identify all the wildlife that you may encounter, no matter what its creed or color, and record your findings in your notebooks! Today's will be a big job, because the Webster Conservation Area is one big area. So, we'll try to look for some more specific things today.

Leaf Types- There sure are a bunch! Keep your eyes peeled for trees and other plants with these types of leaves. But no picking! Contrary to popular belief, we're just here to observe, not demolish.



Lichens- These totally awesome organisms love to hang out on rocks, trees, and logs, and you can usually find them in the woods. A lichen is really two organisms living together, each one doing different jobs--kind of like a marriage. Now, you're wondering, why would plants want to get married? Well, it's more complicated than that, so think about and read about lichen. Make use of our Envi-Sci library before the program starts. If you come in already knowing this then you'll get a hearty handshake.

Contrasting with the warm, forest undertones in the Webster Conservation Area is a very hip, very old, very rusty "T" track running smack through the woods! We'll check out what effects this little slice of the urban life has had on the wildlife there. How do you think a forest could be affected by something like that?


CHESTNUT HILL, MASSACHUSETTS 1978-79
KEY
BLUE TRAIL
GREEN TRAIL
ORANGE TRAIL
YELLOW TRAIL
UNPOSTED TRAILS
BEACON ST.
OLD ENGLAND RD.
WOODMAN RD.
LAWRENCE RD.
CLOVELLY RD.
SUFFOLK RD.
BROOK
SANDSTONE LEDGES
LEDGE PATH
HAMMOND
ELGIN PATH
HAMMOND POND PARKWAY
DEER PARK
LOWELL CROSSING FOR
HOUGHTON GARDEN
CROSSING CLOSED
M.B.T.A.
CITY AND M.B.T.A. VEHICLES ONLY
OLD CRANBERRY BOG
RED MAPLE "TROUBLESOME" SWAMP
CANAL
BROOK
HAMMOND
WEBSTER PLAYGROUND
GOOCH'S CAVES
FERN GARDEN
CAKE ROCK
WARREN ST.
ELGIN PATH
TARN POND
HEMLOCK VALE
HAMMOND POND
ELGIN ST.
TEMPLE PATH
TEMPLE MISHKAN TEFILA
PARKING
BARE POND
M.D.C. RESERVATION
TRAFFIC SIGNAL PARKING DRIVEWAY
BLOOMINGDALE'S
CHARLES COHEN CONSERVATION AREA "THE YALE"
PATH
CARLISLE
M.D.C. RESERVATION
PARKING
SWAMP
BROOK
BIRD SWAMP
MAPOC ST.
CAT POND
"THE HAMLET"
CHESTNUT HILL MALL
BOYLSTON ST. - ROUTE 9
CARLISLE ST.
LAINGLRY RD.
NORTH

Leaders
Jeff Wong 332-3617
Peter Montague 969-4196
Date: July 2, 1996
Times: 9am - 2pm
Tripslip #2
Meeting Place: Newton South
Equipment: Field Kit, lunch, water, hiking boots, sunscreen is a good idea

HAMMOND POND

Well, it's your first real trip today. That means you can show us the map and compass skills you have learned. Yay! So today we're hiking to Hammond Pond, remember to drink lots of water. Water is good, mmm...

Hammond Pond and Woods is part of a 113 acre conservation area in Newton. Do you know how the pond was formed? 14,000 years ago, the pond was carved by passing glaciers and then filled by receding glaciers. This type of pond is known as a kettle pond.

Like all other forests, Hammond Woods is going through something called forest succession. There are four stages of forest succession.

Pioneer stage

small trees, bushes

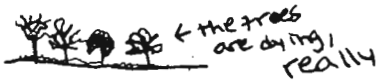
Midstage

less grass, more plants + trees

Climax stage

little or no vegetation, almost all trees

Dying stage



Do you know what stage Hammond Woods is in?

So what's the difference between a pond and a lake? A lake has both an inlet and an outlet while a pond has only an inlet or nothing.

While we hike to and from Hammond Pond, you can impress Pete and I with your vast knowledge of the trees and flowers you learned about today.