

1997 Cedar Bog, Site #1

Points

- 3 1. Using the field guide, identify the dominant tree species from points 1. (top of ridge) to point 3 (Cedar Bog). **1. Aspen, 2. Birch/white spruce, 3. Cedar**
- 3 2. Identify three factors/conditions that have created the sequential change in dominant tree species.
Slope, drainage, soil type (more clay further down, through leaching effect),
- 3 3. a. Identify the ailment on the spruce tree. **dwarf mistletoe**
b. If neighbouring trees were threatened by the same ailment, what remedial action would you take. **sanitation removal**
c. Explain what else indicates that this tree is under stress? **Insects appear to have invaded the base as evidenced by the pileated woodpecker excavation**
- 6 4. Which of the listed items are considered wildlife by the *Wildlife Policy for Canada* definition? (circle all correct answers)
- a. eastern cougar d. spruce budworm**
b. prairie crocus e. sphagnum moss
c. grey tree frog f. Dutch elm disease
(All wild life: animal, plant and otherwise)
- 2 5. Explain the basic differences of the A, B & C horizons (soil profiles) in pits at site 1 & 2. **1 is sandy loam and has some drainage, 2 has higher clay content, therefore more water holding capacity and is currently saturated. 2 is greyer and has less A horizon.**
- 2 6. Would the Cedar bog provide a suitable habitat for thatching ants? Why or why not? **No. The bog has saturated soil, therefore no suitable underground habitat**
- 2 7. Give two reasons why this area is called the "Cedar Bog" and not the "Cedar Marsh". **1. Marshes do not have trees**
2. Marshes are dominated by cattails, bulrushes and grasses. 3. A bog is a wetland formed in a former glacial depression by the accumulation of organic matter, known as peat.

Action/Props

-Field guides to native trees
-stakes to mark points

-mark tree

Soil identification guide - Steve

- a. marten
- b. bobcat**
- c. black bear
- d. chickadee

3 9. List three important characteristics that organic matter adds to a soil.

improved cation exchange capacity, increased water holding capacity, aeration, tilth, structure

mark tree with stake and orange tape

2 10. Identify this tree using the field guide. **green ash** Would *Ceratocystis ulmi* or the beetle that carries the fungus from tree to tree be a threat to this tree? If so how? If not, why not? **No. Dutch elm disease is specific to elms as is the native elm bark beetle**

1 11. Which of the following has the largest particles? (circle)

- a. silt
- b. clay
- c. sand**

Griffith's Hill, Site #2

2 1. What animal produced this mound? **northern pocket gopher** Would this animal be most accurately described as a subnivean dweller? Yes ___ **No X** **subnivean refers to animals that are active beneath the snow in winter. NPG is subterranean.**

Mark mound with stake and orange tape

2 2. Identify the dominant tree species at the top of the ridge and at the bottom of the ridge. **Bur oak on ridge, trembling aspen at bottom**

Soil identification guide - Steve

2 3. Using the hand texturing guide, determine the texture of the following samples. **Steve to determine?**

ic material and why? **Bottom. washing of fine organic material to lower level.**

Flags for A and B

1 5. What evidence is there to suggest this was once a beach on Lake Agassiz? **Smooth, worn rocks on the beach ridge**

3 6. Identify three human activities that have helped white-tailed deer populations to increase in this area since the turn of the century. **Seeding agriculture crops, winter feeding of cattle, competitor reduction, predator reduction, no hunting in municipality, creation of edge habitat.**

2 7. What characteristics suggest that this site was established after a fire or other disturbance? Circle the correct answer(s).

- a. There are few conifers
- b. Most tree species are the same height**
- c. Most trees appear to be the same age**
- d. Dominant tree species are shade tolerant

1 8. The junction between two habitat types is referred to as a(n):

- a. corridor
- b. niche
- c. interspersion
- d. edge**

1 9. What is the major difference between the pest control products Roundup^R and *Bacillus thuringiensis*. **Bt is a biological insecticide, Roundup is a chemical herbicide**

2 10. Use of herbicides can result in "species replacement". What does this mean?
Species replacement occurs when one weed species is killed off and another proliferates, often from entirely different family, often posing an equal or greater problem.

five basic steps for reducing pesticide risks.

Pesticides manual page 13, 1. choose the right pesticide product, 2. read the product label, 3. determine the right amount to purchase and use, 4. use the product safely and correctly, 5. store and dispose pesticides properly

3 12. What role does alfalfa play in the nitrogen cycle?

alfalfa has a symbiotic relationship with bacteria that convert nitrogen gas in soil to nitrates, a form usable of nitrogen to plants.

Nimowin Trail, Site #3

Flag on stake at mound

3 1. a. What created this mound (be specific)? **Thatching ants**
b. Does the size of this mound indicate the number of inhabitants? Yes ___ **No X** Explain. **Only indicates amount of above ground activity. And (possibly) age of hill?**

Bonus Ques. 2. a. Identify plant by common name.

2 **Horsetail/scouring rush**
b. Identify the genus. **Equisetum**

1 3. This body of water is a (chose one): **Note: Only if students ask, they can be told that this appears to be standing water, i.e there is no apparent flow in or out.**

- a. pond
- b. marsh**
- c. bog
- d. fen
- e. lake
- f. other**

2 Explain your answer

This would best be described as a Marsh as it has emergent vegetation, which are primarily cat-tails, and has no trees within. Pond would be acceptable if they referenced the open water, however, it would only be partial marks as the dominant vegetation is not submergent or floating (e.g. lily pads). Other is a

possible "best answer" if they describe the combined features this waterbody has with a pond and a marsh.

- 2 4. What signs can you describe that suggest there are beaver here? **cut poplar trees, travel runs to water, beaver lodge on far side of water body.** Do you think this is a good site or a poor site to support beavers? 2 Explain **Good Site: Abundant poplar trees (food source), few, if any predators. Poor Site: Standing water may not be deep enough throughout the year, with no flow in or out, beavers cannot regulate flow. Source: Hinterland's Who's Who**
- 3 5. Which of the following that might be found in this standing water? (circle all correct answers). Explain, in general terms, how a. or b. has adapted to its preferred waterbody.
- a. stonefly nymph
 - b. sludgeworm**
- Stonefly live in fast streams therefore are flat and streamlined, with muscular legs and hooks on their feet. Sludgeworms have no adaptations for fast water. To capture oxygen in the muddy bottomed ponds and lakes, they rotate their tails through the water.**
- 2 6. Identify an area of this standing water body that is in the pioneer stage of succession. **open water is the pioneer stage.** Identify the emergent vegetation stage area. **area with cattails,**
- 1 7. If you saw a clam-like animal with a brown and white shell, what exotic species might it be? **Zebra mussels**
- 5 Name five precautions to take with your boat to ensure that you do not spread this animal from one water body to another.
- 1. drain all water 2. inspect all equipment 3. scrape of "grainy" surfaces (they could be young mussels) 4. wash all equipment with hot, soapy water 5. dry equipment in the sun for 4 - 5 days, then scrape off remaining zebra mussels.**
- 2 8. What has happened to this tree? **Bark eaten by rabbits** mark tree with orange tape
When? **Height of chewing activity suggests this happened in winter when snow brought them up to height of branches.**

hoppers, carbofuran and one of Manitoba's endangered species (name the species). **carbofuran is an insecticide used to protect wheat from grasshoppers. Burrowing owls eat poisoned grasshoppers and live in burrows, often on sprayed lands**

3 10. List 3 ways in which pesticide persistence is extended. **Persistence can be extended by 1. acidity (pH) of soil, 2. temperature and 3. soil moisture. Also: Fungicides, especially soil fumigants, have been found to increase the persistence other pesticides, apparently because they reduce the number of decomposer organisms.**

1 11. Which of these is ovoviviparous ?

- a. leopard frog
- b. American woodcock
- c. monarch butterfly
- d. red-sided garter snake**
- e. none of above

(ovoviviparous - egg bearing, but live born)

2 12. Explain what has happened here and why. **Deer rubbing; buck was removing velvet from antlers at the beginning of the fall rut.**

orange tape on tree

2 13. What are these rocks called and how did they get here? **Foundlings, or erratics, are glacial remnants. These large boulders were left behind as the glacier retreated.**

orange tape on stake

Group Use Area, Site #4

4 1. a. How many conifer species are on this site? **4 -Scots pine and species in b.**

b. Identify (to species) three native conifer species and provide at least two identifying characteristics of each. **red pine, jack pine, white spruce**

Field guides to native trees

forest. **Plantation versus a naturally regenerated stand**

Describe some of the factors and processes (and indicate evidence of thereof) that make this site different. **site preparation - furrows evident, trees were planted in rows and evenly spaced. Trees are pruned and the predominant tree species is exotic (Scots pine)**

bring increment borer Dan!

2 3. Estimate the age (cored) and height of this tree.
To be determined on site. note: height is a bonus question

4 4. If this site was left to its own for the next two hundred years, which tree species do you think would most likely be found here? Which would be the least likely? Explain your answer.

The dominant natural influence with an unmanaged situation over time would likely be fire. Responses should reference fire's impact and trace through a logical successional sequence.

Possible scenarios include fire followed by aspen suckering from nearby stands, and jack pine, red pine and white spruce seeding (Scots pine less likely to survive). Pioneer species would dominant and white spruce would likely be the climax species in 200 years. However this would not be the case with repeated fires. Under that scenario aspen and/or jack pine would likely dominant (note: there is very little jack pine therefore they might be out-competed by the aspen)

Key terms for grading: fire, succession, pioneer species, climax species, native species, exotic species

3 5. How thick is the A horizon and at what depth do the B and C horizons begin? **Steve to determine**

orange flag on stake,
soils guide

1 6. What effect does the type of vegetation here have on the A horizon. **needles acidify the soil.**

2 7. Based on the C horizon, briefly describe how this soil was formed. **Fluvial deposit. Materials deposited by flowing water. Sand settled out at this site.**

2 8. List two factors that would limit this soil for annual crop production (e.g. Wheat, canola). **low water holding capacity, susceptible to wind and water erosion, limited**

1 9. Would you classify this skull as belonging to a carnivore, herbivore or omnivore? Why? **skull: beaver**

2 10. What does COSEWIC stand for? **The Committee on the Status of Endangered Wildlife in Canada.** What do they do? **Representatives for the federal and provincial government wildlife agencies, universities, scientific institutions, and non-governmental conservation organizations across Canada. The committee meets annually to consider candidate species for which status reports have been prepared by experts. Designations for affected species are rare, venerable, threatened or endangered.**

2 11. Recent studies have indicated significant and rapid declines in some forest songbirds over the past decade. What are the two primary causes for this decline? **Forest fragmentation and the loss of habitat along migration routes, due to urbanization and agricultural development. (State of Canada's Forests 1994 p. 23)**

3 12. Name three types or levels of diversity that are used to indicate biodiversity. **genetic, species and landscape (ecosystem, geographic) diversity.**

2 13. Define the term "annual allowable cut". **AAC is the amount of timber that can be harvested on a sustainable basis each year from an area. AAC is approximately equal to the volume (amount) of forest that grows each year.**

6 14. The *Living Soil* explains how five factors make soil. List and briefly describe three of these. **Parent material - weathering breaks down parent material into smaller pieces. Soft rocks such as sandstone break down much more quickly than hard rocks such as granite.**

Climate- affects soils that form by limiting plants and animals that can live there (this impacts the amount of organic matter present). The climate also has an impact on the speed at which organic matter breaks down and becomes part of the soil. The warmer and wetter the climate, the more quickly organic matter will break

other factors are the same. The more living organisms there are in soil, the higher the level of organic matter there is.

Landforms - landscape affects soil formation. In a valley rain water drains down slopes. The valley floor may receive more water and more plants may grow there than on the slopes. The more plants, the more organic matter, which means a more fertile soil.

Time - A soil that has just begun to form differs from one that has been developing for thousands of years. Soils usually take a long time to develop down.

Organic matter- Plants which grow in an area affect the type of soil that develops. The soil under a forest is different than the soil under a prairie grassland, even if