



## 2012 Oral Presentation Problem

### Team Role

For this exercise your team will role play a group of environmental experts who have volunteered to assist a non-profit conservation group plan an eco-friendly green learning center and summer camp for young people.

Use your knowledge of the NC Envirothon resource materials to solve this problem.

You will be allowed a maximum of 10 minutes to present your recommendations. Please note that points will be deducted for presentations that are less than 9 minutes in length.

### Problem

A non-profit conservation group has purchased a tract of land along the Broad River to construct a new environmental learning center and summer camp called Camp Green Hill. They wish to build the camp in a manner that is eco-friendly and minimizes impacts on the environment. They have contacted local conservation experts (your team) who are knowledgeable about soils/land use, forestry, wildlife, and aquatics and asked them to provide advice.

Your team should review the information about the site and the camp's plans and make specific recommendations that allow Camp Green Hill to be constructed in a way that minimizes impact on the local ecosystem and the adjacent Broad River. You should identify potential environmental impacts and make specific recommendations to address them. The impacts assessed should be for both the construction phase as well as the long term environmental impacts for the operation of the camp. The camp directors are especially interested in learning about low impact development and how it might be utilized at the camp. Be sure to include the environmental benefits of implementing each recommendation. While the camp's board of directors is willing to spend extra money to insure that the camp is a model for being eco-friendly, all recommendations you make need to be practical.

### Site Information for Camp Green Hill (see map)

The tract of land purchased for Camp Green Hill lies just to the south and west of the Broad River. There are 3 distinct landform areas on the site.

**Landform Area 1:** The land adjacent to the river is nearly level (Area E on map). The dominant over story vegetation is a mixed hardwood forest consisting of yellow poplar, American sycamore, sweetgum, elm, and river birch. Most of this area is in an undisturbed natural state with the exception of the small beach area (Area B on map) that has been cleared. This area lies within the 100-year floodplain. Historically,



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flooding occurs annually on the lowest areas and only about once every 50 years on the higher areas. (The upper limit of flooding is indicated by a dashed yellow line on the map.)

**Landform Area 2:** Just beyond the 100-year floodplain the land rises steeply. This area (Area F inside the pink lines on the map) is very steep with the dominant slopes exceeding 30 percent. Most of this area was logged 12 years ago. The land is now vegetated by an emerging mixed pine and hardwood forest with grasses and annuals in the understory. Common tree species are loblolly pine, yellow poplar, and shortleaf pine. This area contains several old dirt roads that have been poorly maintained. Gullies have formed in several areas and erosion is an ongoing problem. A small area in the north (Area G inside the pink lines) is relatively undisturbed with a mature mixed hardwood canopy. Common tree species are sweetgum, white oak, yellow poplar, and hickory. Another area to the northwest (Area H inside the pink lines) is dominated by a maturing stand of mixed loblolly and shortleaf pines. This area was not affected by the logging and is relatively undisturbed.

**Landform Area 3:** At the top of the hill lies the largest area of the site. Slopes in this area range from 2 to 15 percent. Most of this area (Area D on map) was logged 12 years ago. The land is now vegetated by an emerging mixed pine and hardwood forest with grasses and annuals in the understory. Common tree species are loblolly pine, yellow poplar, and shortleaf pine. Numerous dirt and gravel roads give access to parts of this area. Erosion is a problem on the roads that lie in more strongly sloping areas. A small area in the center (Area C on map) is dominated by a mature stand of mixed loblolly and shortleaf pines. This area was not affected by the logging and is relatively undisturbed. The area west of the intermittent stream (Area I on map) also has not been affected by the logging and is composed of mixed hardwoods approximately 60 years in age. Common tree species are sweetgum, white oak, yellow poplar, and hickory.

### Camp Green Hill Plans

The camp plans to construct the following facilities:

1. Learning center – classrooms and learning laboratory.
2. Kitchen and Dining Hall – 110 seat capacity
3. Camp Office
4. 2 boys dormitories, 2 girls dormitories – 80 beds total
5. 2 camp counselor cabins – 8 beds each
6. 1 grounds keeper cabin
7. 1 camp superintendent cabin

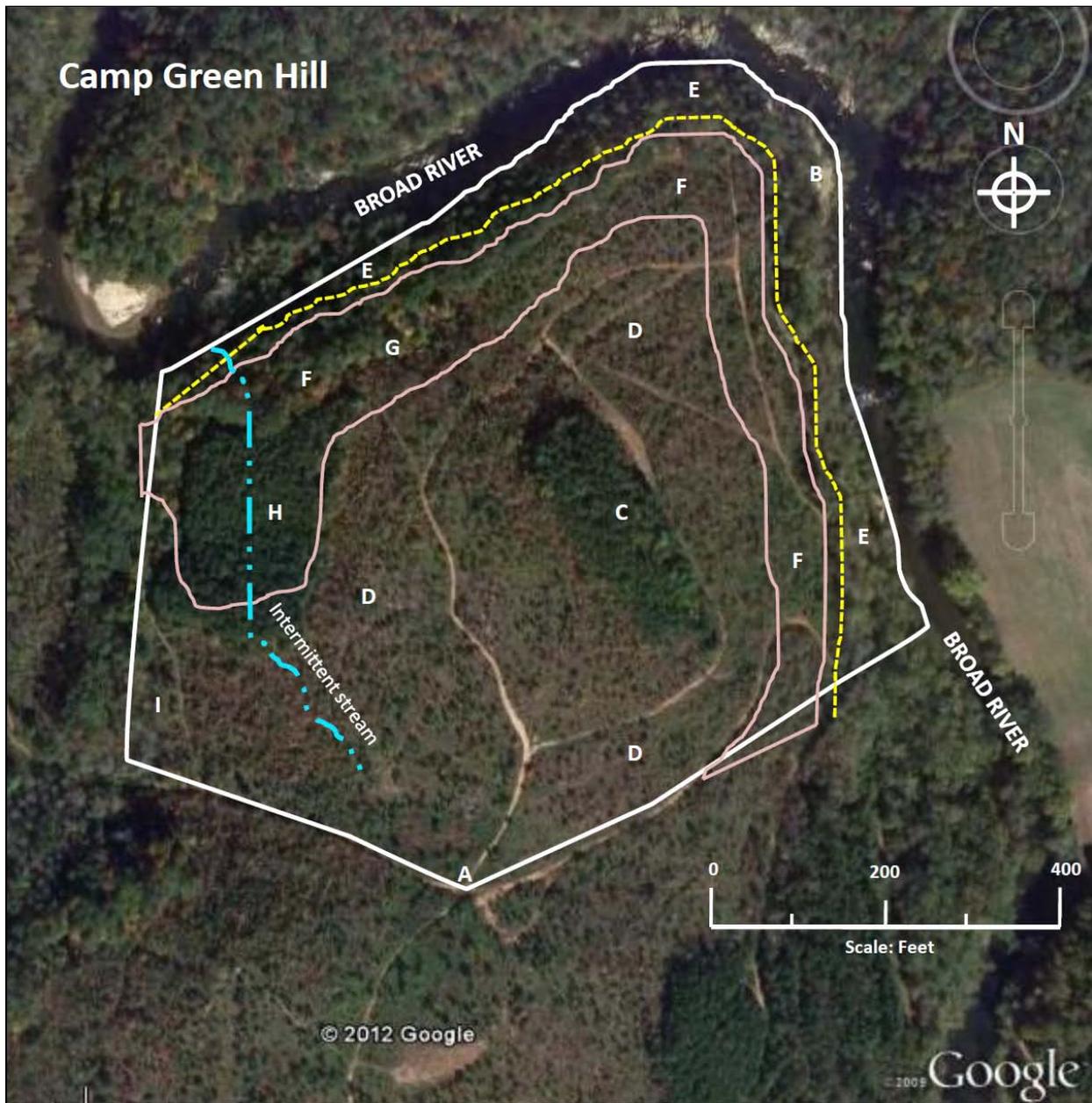


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8. 1 large bathhouse (bathrooms & showers for dorms)
9. 1 equipment storage building

### Team Assignment

1. Identify the major potential environmental impacts of developing an environmental learning center and summer camp on this tract of land. This should include the impacts from the construction phase as well as long-term impacts of the day to day running of the camp.
2. Make specific recommendations for minimizing or eliminating each of these potential impacts. These recommendations should include the use of low impact development techniques where they are practical.
3. Identify the environmental benefit of each recommended environmental practice.
4. Make sure that all recommendations are practical.



**Map Key**

- A – Camp Entrance
- B – Beach & Canoe Access
- C – Mature Loblolly-Shortleaf Pine Forest
- D – Pine-Hardwood Regrowth
- E – Mature Mixed Hardwood Forest on Floodplain
- F – Steeply Sloping Area (>30% slopes inside pink lines)
- G – Mature Mixed Hardwood Forest on Steep Slope
- H – Maturing Loblolly-Shortleaf Pine Forest
- I – Mixed Hardwood Forest

- White Line – Property Boundary
- Yellow Line – Upper Extent of 100-year floodplain
- Blue Dotted Line – Intermittent Stream