



4-H Geocoin Adventure

Reflection in Learning Land Use and Land Cover

A Digital version of this document is available at: <http://www.cnr.vt.edu/gep/tools.html>

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The following questions can be answered in a log book or incorporated into your online log. You will need to provide your responses to your club leader as part of your project record keeping process. Turn in your log book or share your online log with your leader. You can create a presentation individually or with your club of what was learned about the sites you visited and share it with your community at fairs, community gatherings, government meetings, libraries, museums, etc. You could also prepare a learning station using the information to teach younger children about what you learned.

4-H Geocoin Adventure: Land Use

Complete the exploration and reflection activities on land use below using a cache site of your coin that is of particular interest to you. You will answer questions about the site and compare that site to where you live.

All reflection Questions will address the Essential Question: How do subtle or incremental changes in landscapes over time impact your community and communities downstream?

1. Using a way point or geocache from your online adventure, interpret the aerial photography. Describe any of the following features that you can identify in your map area. For example, "I seen a big parking lot that is black and is probably asphalt.:"
 - A. asphalt and concrete
 - B. forests or trees
 - C. agricultural areas such as crops or pastureland
 - D. manicured lawns
 - E. structures or roof tops
 - F. roads
 - G. parking lots
 - H. swimming pools
 - I. sidewalks
 - J. natural water features (lakes, ponds, streams, rivers, marsh)
 - K. alternative transportation (bike trails/pedestrian paths/rail lines)
 - L. parks and recreation areas
 - M. Other
2. Hypothesize and describe how any of the features identified above contribute to the following issues hint: you might need to research some of these):
 - A. Urban heat island effect

- B. water quality (surface or ground water)
- C. transportation/ congestion
- D. personal safety
- E. presence or absence of wildlife
- F. carbon footprint

3. List similarities and differences between your way point area and your neighborhood/ community that might influence the following:

- A. air quality
- B. heat
- C. water quality and run off
- D. how people get from place to place
- E. personal safety
- F. presence or absence of wildlife/biodiversity
- G. carbon footprint

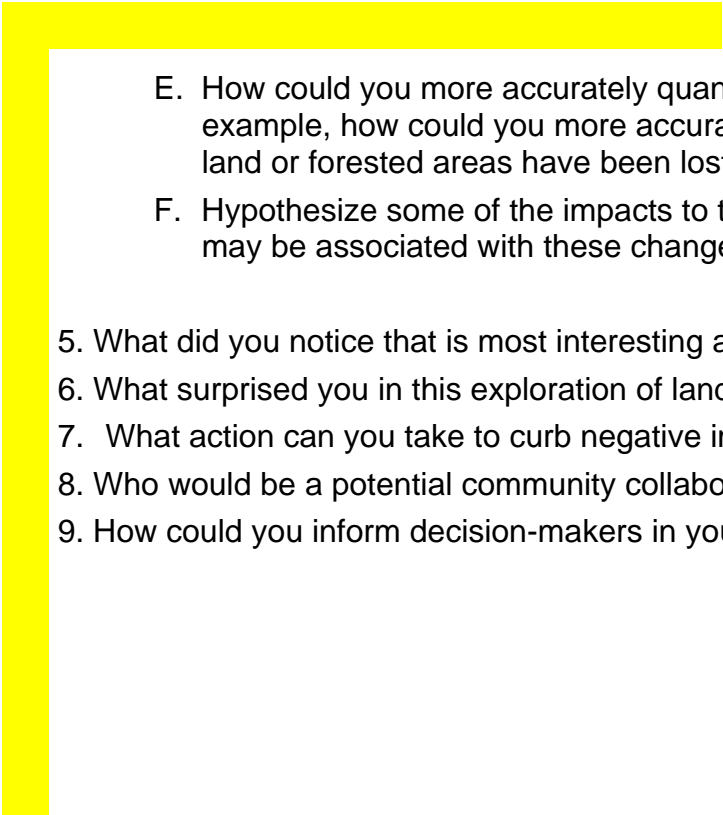
4. Compare differences in the LULC in the map area of interest over two time periods (hint: in Google Earth use the time slider function)

- A. What are the two dates of photographs you are examining?
- B. Identify and describe differences in the landscape within your area of interest

Between the two photographs for each of the following:

- Asphalt or concrete
- Abundance or lack of vegetation, especially trees
- Agricultural areas (crops or pasture land)
- Roof tops
- Parking lots
- Swimming pools
- Sidewalks
- Natural water features (ponds streams, rivers, marsh)
- Alternative transportation (bike trails and rail lines)
- Other:

- C. Estimate (b percent) the changes in land use or land cover for a give landscape feature between the two dates; for example “In 1998 there was approximately 80% forest cover for the area of interest. In 2007 there was approximately 50% forest cover for the area of interest.
- D. Hypothesize what might have caused this change (development of large buildings

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- E. How could you more accurately quantify land use change in your photographs? For example, how could you more accurately estimate how many acres of agricultural land or forested areas have been lost over the period?
 - F. Hypothesize some of the impacts to the environment and to the community that may be associated with these changes in land cover over time.

- 5. What did you notice that is most interesting about land use across time?
- 6. What surprised you in this exploration of land use at your chosen site?
- 7. What action can you take to curb negative impacts associated with land use change?
- 8. Who would be a potential community collaborator to help you in your efforts?
- 9. How could you inform decision-makers in your community about your findings?

