CSS 496 Research Project

Developing a Monitoring Protocol for an Indicator of Human Impacts in Wilderness & Protected Areas

I. Purpose & Scope:

This research project is designed to allow you to more thoroughly investigate (than is possible in class lectures) the use of indicators to monitor human impacts in a wildland setting. Your assignment is to develop a detailed monitoring protocol for an indicator of human impacts in wilderness. In your report you must give a brief explanation of what the indicator is and what condition or impact it purports to monitor (1 or 2 pages). Next, you must develop the actual detailed instructions on how you would measure the indicator in the field and how you would analyze the data. You must create the actual data collection form that people would use in the field to collect data. Everyone in class will make copies and share their work with everyone else. Finally, you will make a brief in-class presentation in which you present a concise summary of how you would use your inventory form and instructions to monitor a particular indicator and share what you learned with your classmates.

II. Topic:

We have learned that selecting appropriate indicators is the key to the success of a monitoring program that seeks to document human-caused change in wilderness conditions. Thus your research project should focus on measuring an indicator that can detect change in environmental or experiential conditions caused by human use or impacts. In your evaluation you will need to identify the strengths and weaknesses of the indicator you investigate. Information on how the indicator has been used and the human activities the indicator responds to should also be included along with any relevant citations.

Following is a list of example term paper topics to give you some ideas. You are in no way limited to this list of topics—be creative:

1. Air Quality

The use of lichens to monitor the effects of air pollution
The use of plants to monitor the effects of air pollution
The use of animals to monitor the effects of air pollution
Indicators to monitor the effects of acid precipitation
Indicators to monitor loss of visibility

2. Water Quality

The use of macroinvertebrates to monitor the effects of human activities
The use of fish to monitor the effects of human activities
The use of phytoplankton/zooplankton to monitor the effects of human activities
The use of aquatic plants to monitor the effects of human activities
Indicators to monitor human fecal contamination
The use of physical or chemical indicators to monitor the effects of human activities

3. Soil

Indicators to monitor trail conditions
The use of soil indicators to monitor campsite condition
Using environmental factors to locate durable campsites and trails

4. Vegetation

Indicators to monitor the effects of fire suppression
Indicators to monitor the presence and spread of exotic plant species
Indicators to monitor the effects of campfires
The use of vegetation indicators to monitor campsite conditions
Indicators to monitor the effects of livestock and packstock grazing

5. Wildlife

Indicators of harassment on big game species
Indicators of habituation or attraction of wildlife to human activities
The use of bird communities to monitor the effects of human activities
The use of small mammal communities (e.g., rodents) to monitor the effects of human activities
Indicators of habitat quality
The effects of winter recreation on subnivian environments

6. The Recreation Experience

Monitoring the effects of managerial activities on the wilderness recreation experience
Monitoring encounters between groups
Monitoring the effects of noise on the recreation experience
Monitoring the effectiveness of minimum-impact education
Monitoring the effects of scientific inquiry (research projects) on visitors' wilderness experience
Monitoring the effects of inappropriate behavior on the wilderness recreation experience

III. Approval and Due Dates:

To insure that everyone selects a different indicator, you must select an indicator by Tuesday, April 2, 2013. Your instructor will approve your topic in class and provide suggestions to get you started. The paper will be due on Thursday, April 18th. The in-class presentations to share your findings will begin in April 25th – May 2nd.

IV. The research paper will be evaluated as follows:

Topic turned in and approved	5 points
Technical Quality:	
Grammar & Spelling	10 points
Organization	10 points
Introduction, logical sequence of discussion, conclusion, references	10 points
Content:	55 points
Clear explanations	(15)
Data form unambiguous	(20)
Adequate instructions (sampling, equipment, analyses)	(20)
In-class Presentation:*	10 points*
TOTAL	100 points

*Whether or not we do in-class presentations depends on time available.