SPRING 2010 PROJECT WRITE-UP

Data are located at http://paws.wcu.edu/rdavis in the syllabus course schedule.

Assignment: Write an abstract interpreting the data we collected for the picnic area and Cullowhee creek . The abstract should contain the same basics as a scientific paper (Introduction, Study Area, Methods, Results, Discussion) but focus mostly on results, discussion and management recommendations.

- MUST BE TYPED
- MUST BE YOUR OWN WORK---I encourage you to work together on interpreting results but the actual abstract must be your OWN work. Plagiarism = 0 period.
- Words: 500-750 words –or 1-2 double spaced typed pages (12 pt font).
- Due: Final Exam Day—hardcopy ONLY.

Sample abstract from a separate 140 project…

Cullowhee Creek is a small stream located on the campus of Western Carolina University in Appalachian Mountains of western North Carolina. Land use within the Cullowhee creek watershed is a mix of forest, agriculture and urban/suburban development. Physical alterations to the stream channels by humans cause changes in water by removing channel structures thus increased water speed, increased bank erosion and loss or decline of wildlife habitat within the stream and the adjacent riparian area[1]. In 2005 restoration efforts sought to return a more natural structure and flow to the channel, restore aquatic wildlife and reduce bank erosion. To examine the effectiveness of these restoration efforts we applied a categorical survey to evaluate the current conditions in the stream and the adjacent bank/riparian area. We adapted an existing evaluation[2] following categories: land use, physical (stream channel) attributes, and biologic (wildlife and vegetation) attributes. Individual criteria were scored on a 0-1 scale with 1 representing optimal or natural conditions and zero representing the highest level of human impact. Of the 3 major categories evaluated, land-use scored consistently between 0.50-0.60. Of the physical factors, both the stream channel and bank stability had average scores at or below 0.5 while the stream bottom and surface were at or above 0.7. Among biologic criteria, both aquatic vegetation and animal species scored approximately 0.40 while terrestrial vegetation and wildlife were much higher with an average score of 0.60 and 0.80 respectively. The prevalence of human land use adjacent to the creek likely explains why land use scores were low across all sample sites. Most sites sampled were either directly affected by human activity or adjacent to human activity and land use such as residential and recreational facilities. Physical scores for the creek bottom indicate potential for aquatic species but the scores indicate that few were seen. It is unclear why this is the case but water quality should likely be investigated. Management options are limited given the intense land use adjacent to the stream although some modest efforts would improve conditions for aquatic and terrestrial species. Particulary the further planting and restoration of native vegetation (forest trees/mast trees). This would increase canopy cover over aquatic habitats and mitigate impacts of sunlight on temperature. Replanting would also improve habitat quality and help to buffer the stream from intensive land use.

1. Bond, N. R. and P. S. Lake 2003. Local habitat restoration in streams: Constraints on the effectiveness of restoration for stream biota. Ecological Management and Restoration 4: 193-198.

2. Allmendinger, N. 2005 The Cullowhee Creek Stream Enhancement Project. From Western Carolina University Department of Geology: http://www.wcu.edu/as/GeosciencesNRM/Geology/allmendinger/restoration.html

3. Lake, P. S. 2001. Restoring streams: re-building and reconnecting. *In* Third Australian Stream Management Conference 369-371.

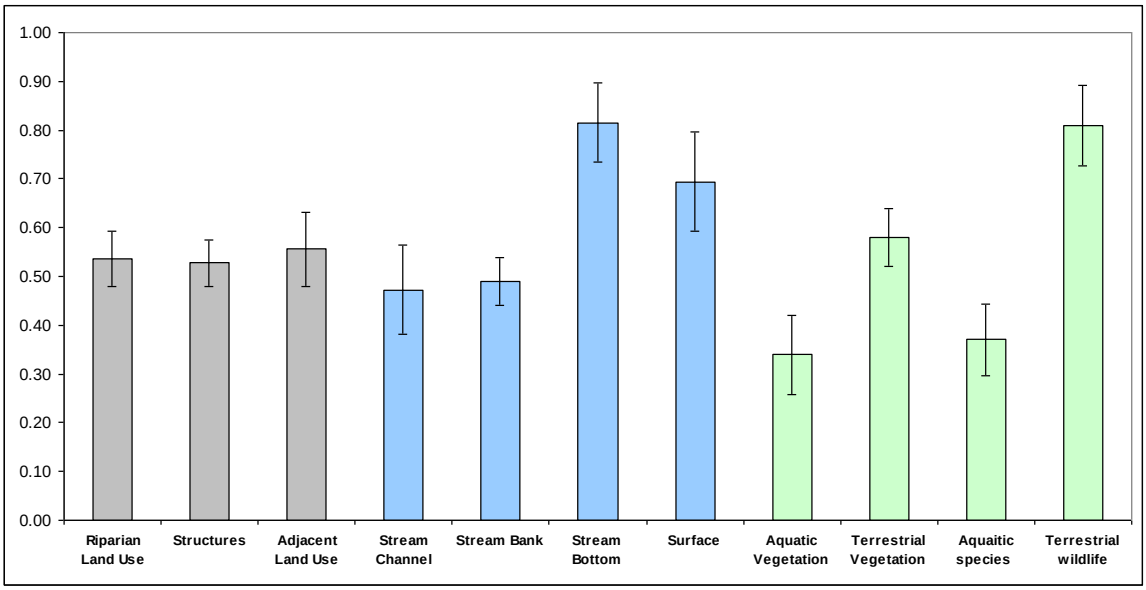

Figure 1. Average scores for criteria measured within the three major categories Land Use (Gray), Physical Attributes (Blue) and Biologic Attributes (Green).