

FILENAME: RANGE527\METRICS\CRAIGMTN.DOC
CREATED: March 5, 2000
REVISED: March 10, 2002, January 10, 2004, January 4, 2006, January 7, 2008

For/Range 527: Landscape Analysis Project

In order to apply the concepts of landscape ecology and metrics discussed in the course you will analyze data from the Craig Mountains, Idaho as a portion of the class requirements. The landscape analysis project will be done in teams of 2-3 people. Collaboration between teams is encouraged. The project has four parts:

- I. **Interpreting landscape metrics:** Compare and contrast the current conditions in 3 watersheds (Upper Deer Creek, Lower Deer Creek and China Garden Creek). Characterize and discuss both the probable causes and the ecological significance of differences between the watersheds. Utilize the vegetation and structure layers resulting from the GAP Analysis Project that utilized 1995 remotely sensed data.
- II. **Implications of landscape change:** Predict the changes in vegetation and landscape composition as a result of 2007 wildfire occurrence and severity. Explain which data layers and methods you used in your prediction and summarize the results in tables or figures. Discuss the ecological implications of those changes.
- III. **Landscape Analysis of Team-Originated Question:** Identify and analyze an additional ecological question relevant to the Craig Mountain area. The availability of existing data and supporting literature must be considered when developing this question. This analysis question could include for instance:

How does the quality of habitat vary for a particular species or group of species within the Craig Mountains?

Based on current conditions, what is the susceptibility of different watersheds to biological invasions? How will this potentially be affected by disturbances such as wildfires?

Will the habitat suitability for some species or species group significantly change over the next 100 years?

Given the current climate, how would you expect the vegetation pattern to change in the next 100 years in the absence of fire or other major disturbances?

A **1-day field trip** to the analysis area is required. This trip, along with supplemental readings, will allow team members to gain sufficient familiarity with the watersheds to allow for realistic and relevant analysis. Much of the class time following the field trip will focus on development of the analysis.

An in-class **progress report is required** to enable the class to interact with each other and the course instructors. This will be an informal 15-minute presentation on the current findings and status of each team.

- IV. **Presentation and Reporting of Results:** Present your results of your analysis for Part III and your interpretation of those results to the entire class in a **30-minute oral**

presentation. Before you begin your presentation, Penny Morgan and Steve Bunting will give a brief general description of Craig Mountain for the benefit of the class members not doing the landscape analysis project. You must also produce a **written project report** (one per team). In both the presentation and the report, draw upon both qualitative and quantitative analysis (as appropriate), make interpretations and relate your findings to the published literature. The written report should not exceed 10 pages in length, not including tables, figures and literature citations. Both the presentation and report must be clear, concise and well-organized. Use tables, graphics and quantitative data analysis to support your interpretation of ecological and management significance. Discuss the limitations of your analysis.

Your grade for the four parts of the project will be based on thoroughness of analysis, interpretation of ecological and management implications, thoughtful choice and discussion of the additional question, clarity and organization of oral presentation and written report, and the incorporation of support literature into both the presentation and the report.

References

Note: This list is not the result of an exhaustive search of relevant literature for the analysis area. Rather it is meant to indicate some of the more important references specific to Craig Mountain, and those references that are older (pre-1985) or in the gray literature and thus not easily identified via normal library electronic search. Except where noted, all are available in the University library.

Campbell, J.D. 1962. Grasslands of the Snake River drainage in northern Idaho and adjacent Washington. M.S. thesis, University Idaho, Moscow, 86p.

Cooper, S.V., K.E. Neiman, R. Steele and D.W. Roberts. 1987. Forest habitat types of northern Idaho: A second approximation. USDA For. Ser. Gen. Tech. Rep. INT-236. 135p.

Gucker, C. 2004. Canyon grassland vegetation changes following the Maloney Creek Fire. M.S. thesis, University of Idaho, Moscow.

Johnson, C.G., and S.A. Simon. 1985. Plant associations of Hells Canyon National Recreation Area. USDA For. Ser. Interm. Rep. Wallowa-Whitman National Forest. 258p.

Johnson, C.G. 1994. Forest health in the Blue Mountains: A plant ecologist's perspective on ecosystem processes and biological diversity. USDA Forest Service Gen. Tech. Rep. PNW-GTR-339. 24p.

Kaiser, V.G. 1961. Historical land use and erosion in the Palouse- a reappraisal. Northwest Sci. 35:139-149.

McLean, A. 1970. Plant communities of the Similkameen Valley, British Columbia, and their relationship to soils. Ecol. Monogr. 40:403-424.

Mueggler, W.F., and C.A. Harris. 1969. Some vegetational and soil characteristics of mountain grasslands in central Idaho. Ecology 50:671-678.

Rybarczyk, B. 1996. Craig Mountain Wildlife Management Area Management Plan. Internal document. Idaho Dept. Fish and Game, Boise, ID. 54. [Note: This internal use document is not published and is not really literature. It contains useful information and will be made available to class in the For/Range 527 reading box. CNR Rm. 205.]

Robbins, S. 2001. Effects of perennial plant competition on the invasibility of canyon grassland communities by *Centaurea solstitialis*. M.S. thesis, University of Idaho, Moscow.

- Roche, C.T. and G.R. White. 2000. Managing yellow starthistle in southwestern Oregon. Oregon State University Extension Service, Corvallis, OR. 8p.
- Roche, B.F., Jr., C.T. Roche and R.C. Chapman. 1994. Impacts of grassland habitat on yellow starthistle (*Centaurea solstitialis* L.) invasion. *Northwest Sci* 68:86-91.
- Roche, B.F., Jr., and C.T. Roche. 1991. Identification, introduction, distribution, ecology, and economics of *Centaurea* species. In: L. F. James, ed. *Noxious range weeds*. Westview Press, Boulder, CO. Pp. 274-291.
- Steele, R., R.D. Pfister and J.A. Kittams. 1981. Forest habitat types of central Idaho. USDA For. Ser. Gen. Tech. Rep. INT-114. 138p.
- Smith, J.K., and W.C. Fischer. 1997. Fire ecology of the forest habitat types of northern Idaho. USDA For. Ser. Gen. Rep. INT-GTR-363. 142p.
- Tisdale, E.W. 1985. Canyon grasslands and associated shrublands of west-central Idaho and adjacent areas. University of Idaho. Forest, Wildlife and Range Experiment Station. Bulletin No. 40. Moscow, ID. 42p.
- Tisdale, E.W., M. Bramble-Brodahl. 1983. Relationships of site characteristics to vegetation in canyon grasslands of west central Idaho and adjacent areas [*Carex* spp., *Festuca idahoensis*, *Agropyron spicatum*]. *J. Range Manage.* 36:775-778.
- Tisdale, E.W. 1979. A preliminary classification of Snake River Canyon Grasslands in Idaho. University of Idaho. Forest, Wildlife and Range Experiment Station. Bulletin No. 36. Moscow, ID. 8p.
- Tisdale, E.W. 1961. Ecologic changes in the Palouse. *Northwest Science* 35:134-138.
- Wright, N. 1997. Wildlife-habitat relationship models for terrestrial vertebrate species on Craig Mountain, Idaho. Idaho Cooperative Fish and Wildlife Research Unit, University Idaho, Moscow, ID. Unpaged. [Note: This internal use document is not published and is not really literature. However, It contains information that may be useful and will be made available to class in the For/Range 527 reading box. CNR Rm 205.]
- Yeo, J.J., J.M. Peek, W.T. Wittenger and C.T. Kvale. 1993. Influence of rest-rotation cattle grazing on mule deer and elk habitat use in east-central Idaho. *J. Range Manage.* 46:245-250.