

EADM Efficiencies: Rangeland Management Analyses

Using Ecological Site Descriptions to Improve Efficiency of Effects Analyses

Overview

Ecological site descriptions are an interdisciplinary tool useful to rangeland management specialists, wildlife biologists, soil scientists, reclamation specialists, and botanists. They provide a consistent framework for classifying and describing rangeland and forestland soils and vegetation. This lets us delineate land units that will respond similarly to management activities or disturbance. Ecological site descriptions help us evaluate the suitability of land for various uses, predict its capability to respond to different management activities or disturbance processes, and assess its ability to sustain long-term productivity. The following is a synopsis for two different projects, one taking advantage of ecological site descriptions, the other not.

Ingredients for Success

The first project had a long history of starts and stops, but it had an abundance of range data, as well as some ecological site descriptions. The ecological site descriptions became the foundation for the effects analysis. Species composition data were used to identify plant community phases as described in the ecological site descriptions. State and transition diagrams were then used to predict how each plant community would likely respond to the proposed management.

After that initial project, local specialists have continued to use the same analysis framework for other successful projects, completing analysis in a fraction of the time had they not been using ecological site descriptions.

Lessons Learned

The second project was in an area that did not have ecological site descriptions. The project was in different part of the country, but the actions and alternatives being proposed were similar. There was a lot of data available, consistently collected from the 1950s up to the current year. The task was the same—determine and effectively display the effects to the native plant communities from the proposed action and its alternatives—and the results were the same.

However, without ecological site descriptions, the rangeland management specialist needed to dive deeply into the data. That included identifying areas where the species composition had changed, and then correlating those changes to changes in grazing management.

Perhaps even more importantly for the analysis was identifying areas where the species composition hadn't changed and where the plant community was in a state that wasn't going to respond to changes in grazing management.

The end result was the same; however the analysis was more time consuming—months for the project without ecological site descriptions versus days for the project with ecological site descriptions.



Left: American pronghorn. Right: Echinacea (purple coneflower).

For More Information

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