Colorado Roadless Rule Arc GIS Story Map

Capstone Report, University of Colorado Denver

Master of Urban and Regional Planning Program

Victoria Sanderson
Master of Urban and Regional Planning Candidate
University of Colorado Denver
May 13, 2021

Prepared for: U.S. Forest Service Rocky Mountain Regional Office
Client Contact: Ruth Esperance, Region 2 Regional Planner, ruth.esperance@usda.gov

Executive Summary

Roadless areas are a lesser-known land area in the National Forest System, as compared to Congressionally designated Wilderness Areas. Colorado Roadless Areas are important to us because they are sources of drinking water; fish and wildlife habitat for species dependent on large, undisturbed areas of land; semi-primitive or primitive recreation areas that offer motorized and non-motorized recreation opportunities; and high-quality naturally appearing landscapes. While the Forest Service 2012 Colorado Roadless Rule provides management direction for the protection and conservation of Colorado Roadless Areas, there are misconceptions among agency staff that forest management is not allowed or needed in roadless areas and that the Colorado Roadless Rule itself can be a barrier to sustainable multiple use management. This is a problem because staff may be avoiding necessary forest management in roadless areas all together. This may leave the lands unmanaged, risking increased forest fuel loads and impacting drinking water sources, infrastructure, and ecosystem services that roadless areas provide. It is essential that Forest Service land managers and practitioners better understand the management direction of the Colorado Roadless Rule so they can plan and implement management activities in roadless areas consistent with the Rule, thereby protecting roadless area characteristics and values for the long-term.

This Capstone explored a different approach to communicating the Colorado Roadless Rule that may not yet be widely used by agencies – visual storytelling with ArcGIS Story Maps. ArcGIS Story Maps can be adapted to communicate several storylines about a broad range of information to many audiences. *The Rundown on Roadless* Story Map is designed as an internal agency planning support tool and written with a rhetorical audience of National Forest land managers and practitioners. To show staff that management is feasible in roadless areas, the Story Map frames the problem early on with familiar forest management scenarios. Then representative photos of roadless characteristics help show the *why* of the problem before detailing the *what* and *how*. To contextualize roadless areas within the state, web mapping applications paired with concise narratives let the audience explore the spatial relationships between roadless areas and other types of land uses and features. These visual tools distill a large amount of information in an accessible and clear fashion. To provide a high-level overview of what the Colorado Roadless Rule means to management activities, anecdotal stories about on-the-ground forest stewardship help clarify common misunderstandings about when and where the exception of the Rule can be applied. The approach to creating this Story Map demonstrates how management direction from the Colorado Roadless Rule can be communicated in a more accessible framework so that an audience may more likely retain the information and apply it in their day-to-day work.

The Rundown on Roadless Story Map may contribute to both an individual professional's and the agency's overall comprehension of the Colorado Roadless Rule. This may help facilitate more roadless stewardship work by Ranger Districts and National Forests. This Story Map and similar interactive visual storytelling platforms could be applied in employee training situations to improve comprehension and retention of material for better employee outcomes. However, the effectiveness of this approach should be further explored through empirical, controlled studies as it was not tested in this Capstone. Agencies may consider exploring the use of ArcGIS Story Maps to communicate information to their staff and minimize misunderstandings of large-scale complex issues, as *The Rundown on Roadless* Story Map demonstrates.