

Can Science Help Us Be Creative and Innovative in Managing Our Watersheds?

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Susan Rich is the Forest and Watershed Health Coordinator for New Mexico State Forestry. Her career spans three decades working in natural resource management for local governments and conservation districts, as well as for the state. In her current position, Susan works closely with the other Forestry Division offices and with partner agencies and organizations to implement New Mexico's Forest and Watershed Health Plan and State Forest Action Plan. Those plans identify key issues facing landowners and natural resource managers in New Mexico, lay out actions for restoring ecosystems across jurisdictional boundaries, and provide science-based models for designing and prioritizing work. Susan is involved in activities ranging from public outreach and policy issues to coordinating landscape-scale projects at the executive level through the state Watershed Management Coordinating Group.



Figure 1. Introduction.

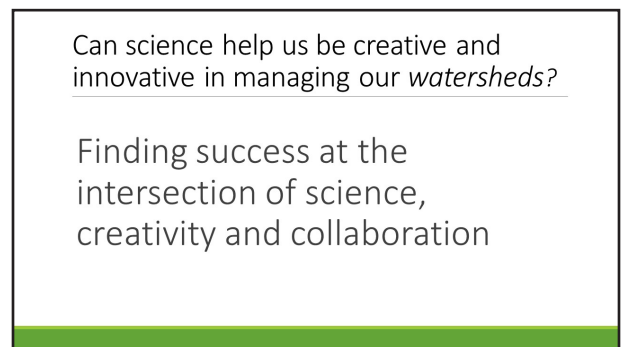


Figure 2. Working and finding success by using a combination of science, creativity, and collaboration.

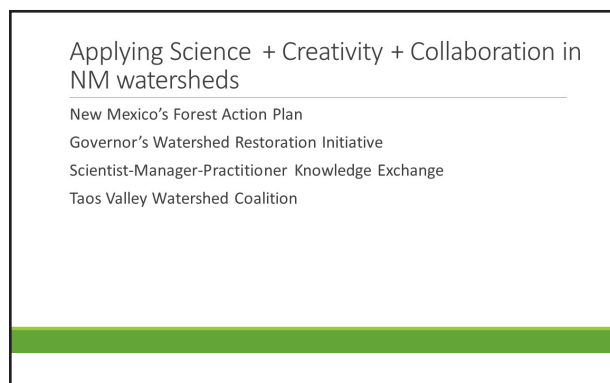


Figure 3. Applying science, creativity, and collaboration in NM watersheds.

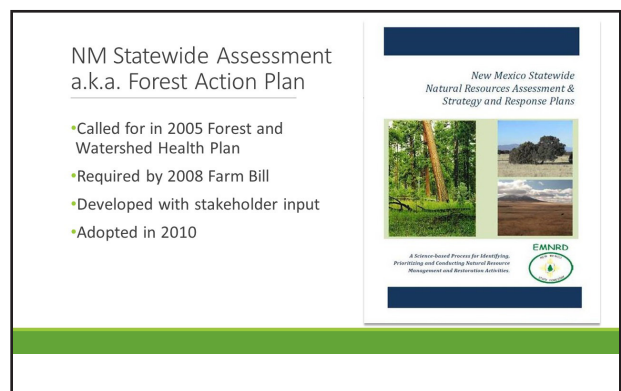


Figure 4. NM Statewide Assessment. The Forestry Division's Statewide Natural Resource Assessment was a true collaborative effort. It was developed in close partnership with The Nature Conservancy and Forest Guild. We also relied heavily on input from nearly 100 stakeholders.



Figure 5. NM Statewide Assessment. Three-legged stool represents the three factors for decision-making and priority-setting: Opportunity, Urgency, and the Science that informs us about natural resource conditions and needs. The state's Forest Action Plan (FAP) provides the science for choosing what work we do.

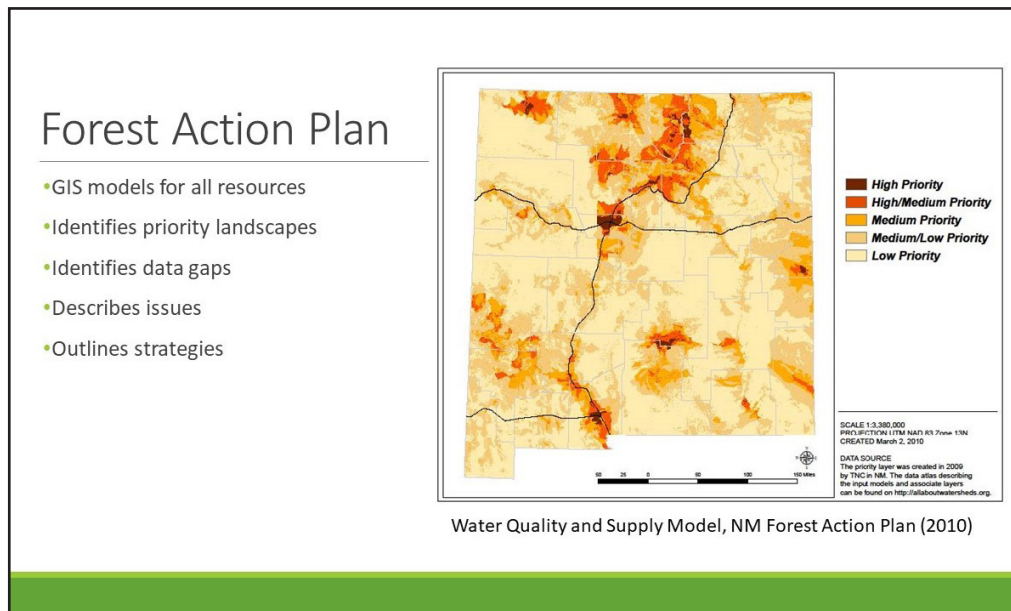


Figure 6. Forest Action Plan. GIS models are the heart of the forest action plan. They're used for priority-setting: internal, external, multi-jurisdictional projects. The FAP also identified data gaps. Since 2010, some of the data gaps have been filled (FIA), others are in the process of being filled. That leads to updated and improved models, and better decision-making. Another important result is that having the science elicits better understanding and more public support for actions. It also helps to bring in money because science-backed priorities and strategies are a plus in grant writing.

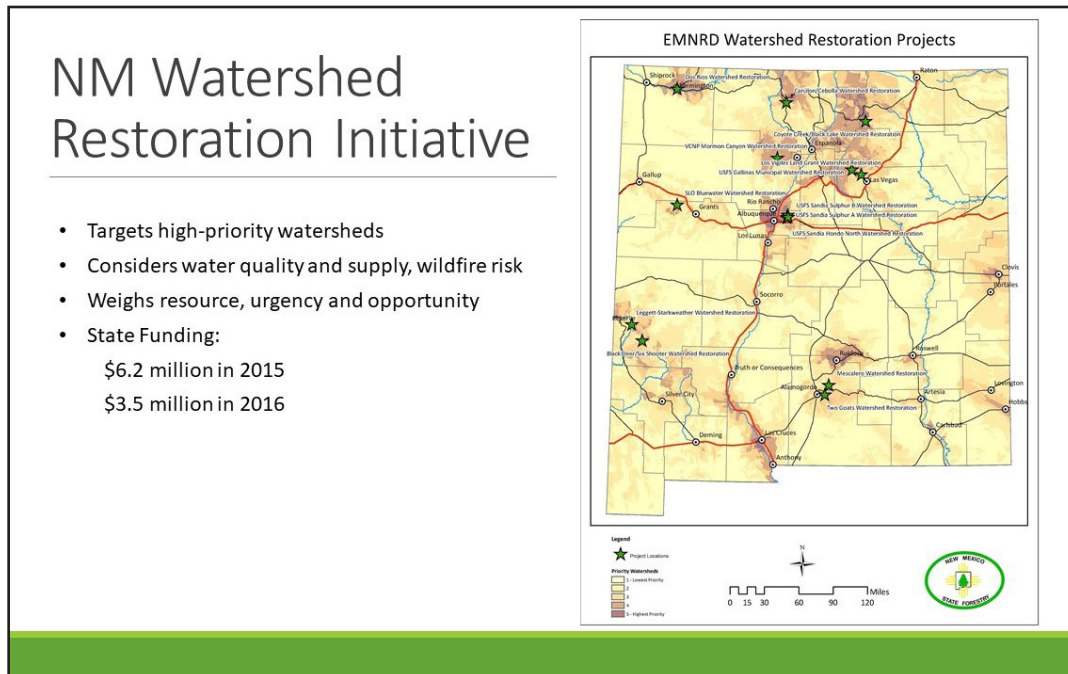


Figure 7. NM Watershed Restoration Initiative. One success that grew out of FAP is Governor Martinez’ Watershed Restoration Program. It pays for projects on public lands with a watershed benefit downstream. Fifteen projects were funded in 2015 are now underway. Having that funding available really kicked into gear our year planning for cross-jurisdictional projects. It also inspired agencies to create innovative partnership agreements. New Mexico’s creativity and success is attracting national attention.

Scientist-Manager-Practitioner Knowledge Exchange

Examples:
 Institutes for knowledge synthesis and transfer (WRRI, FWRI)
 Southwest Fire Science Consortium

- Managers and practitioners identify science needs
- Scientists conduct needed research
- Science provided in clear terms and practical formats

Figure 8. Knowledge exchange between scientist, manager, and practitioner. Institutions like WRRI and the Forest and Watershed Restoration Institute (FWRI) find creative ways to bridge the knowledge gaps by working with everyone: scientists, the public, managers, even politicians. Another example is the Southwest Fire Science Consortium (SWFSC). It’s one of 13 consortia in the national Joint Fire Science Program (JFSP). The whole purpose is to bring science to the people doing the work on the ground, and to find out what managers’ science needs are, so that researchers can answer our real-life questions.



Figure 9. Fires of Change. SWFSC is involved with one great example of a current event combining science, creativity and collaboration called “Fires of Change.” We teamed with the Landscape Conservation Initiative and the Flagstaff Arts Council, brought artists from NM and AZ to a Fire Science Boot Camp. The artists have works showing now in an exhibit in Flagstaff, reaching a whole different audience. One of the artists is from right here in Taos.

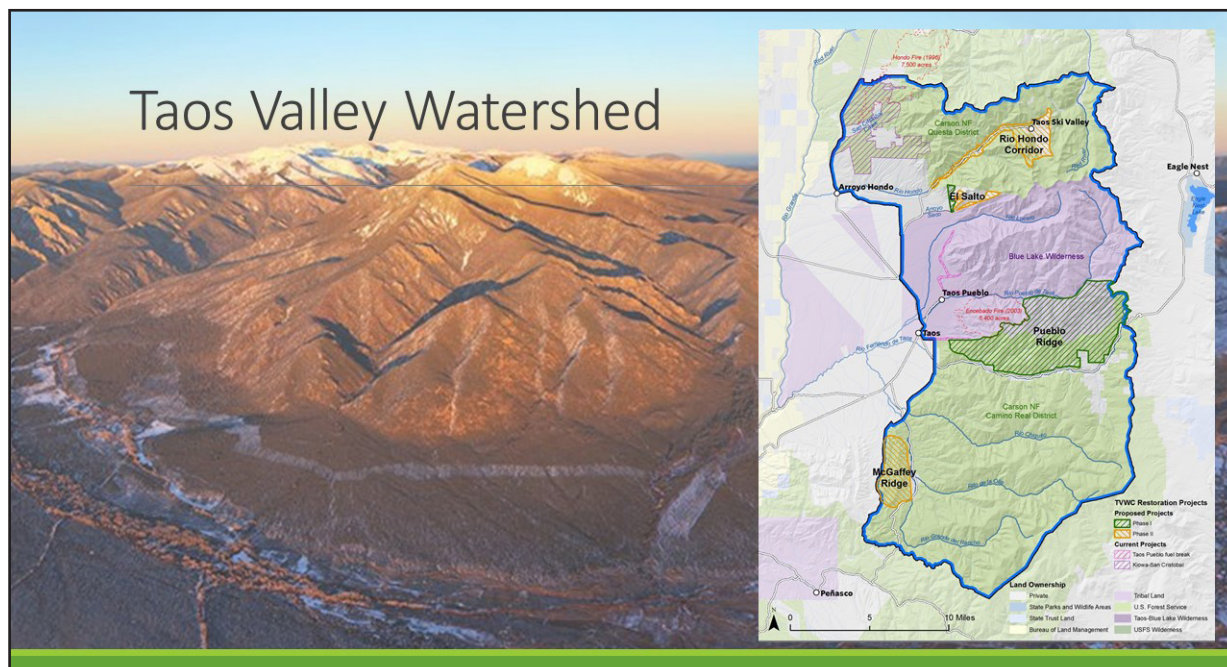


Figure 10. Taos Valley Watershed. The Taos Valley Watershed is a specific example where science + creativity + collaboration is leading to success. Collaboration was there, the shared vision was there, but the steps to get started on the ground were not all that clear. The Rio Grande Water Fund (RGWF) brought in scientists who brought the Coalition the information that they needed. Having the science framework made tough decisions like where to work first and what to do next easier to make. The Taos Valley Watershed Coalition (TVWC) produced a sound, science-backed plan.