Wildfire in the Valley of the Wild Roses

Linda Moon Stumpff

Abstract—Santa Clara Indian Pueblo lands are adjacent to the Jemez National Forest, Bandelier National Monument and Valles Caldera National Preserve. This paper explores Pueblo vulnerability and resilience after repeated and devastating fires in this century as a result of drought and climate change. Santa Clara Pueblo holds a rich store of traditional knowledge about the fire-prone ecosystems that contributes to restoration efforts after this series of high-severity fires in the Jemez Mountains. Forested lands and wilderness shrines are lost, Santa Clara Creek and watershed suffers from erosion and much of the Pueblo's protected lands burned along with Pueblo archeological and cultural sites on public lands. Long ago, the Pueblo created a three zone management system that preserved the upper wild lands as a sacred source of water, protected the middle creek as an ancestral home, and created a homeland supported by sustainable agriculture in the Rio Grande Valley. Deep interviews and discussions with key tribal and western scientists provided sources for this paper that explores how Western Science and Pueblo Wisdom converge in emerging interactions around rewilding, restoration and protection of the Pueblo model.

The Pueblo of Santa Clara

Santa Clara Canyon, formed by Santa Clara Creek, is a deep ravine lined with spruce, pinon and aspen for over eight miles pouring at last into the Rio Grande. The Jemez Range surrounds it on the east and the snowpack at the higher elevations feeds into a vast system of tributaries, underground waters and springs. It is the source of water for Santa Clara Pueblo: the headwaters form a cultural shrine. The Pueblo of Santa Clara, called, Kha P'o Owinge, the Valley of the Wild Roses, in the Tewa language, is a place where culture and water in all of its forms are intertwined in time. Integral to the heritage and to spiritual connections, the use of clear water from the wild watershed source in the upper region remains vital to ceremony and to practice. The upper watershed is regarded as a shrine, the middle section holds the knowledge of ancestral dwellings and ways, and the lower component provides a homeland for sustainable agriculture.

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Fish and deer were plentiful along the clear waters of the creek, and a protected old growth forest thrived in the upper watershed. Spruce, aspen and ponderosa thrived along with plants important to ceremonial life. Medicinal plants grew there. Further down the Canyon lay the ancestral Puye Cliff Dwellings, inhabited until 1600. Santa Clara Pueblo itself sits at the bottom in the rich valley today, with Santa Clara Creek skirting the Pueblo's Plaza on its way to the nearby Rio Grande River. With the upper Canyon surrounded by federally protected land including wilderness, preserves, and other protected areas in federal hands, and the Pueblo in control of 47,000 acres of the Canyon, it would seem a serene and sustainable future was in place.

Snowball on Fire—Ice to Flames and Floods

This case study focuses on Santa Clara Pueblo, but the impacts from the loss of the natural fire regime in fire-prone forest ecosystem are a landscape level problem. Frequent fires were part of the previous regime in the Jemez Mountains that encircle the Pueblo lands to the East. Fire in wild areas can have beneficial effects extending to other areas: it can help to clear out fuel buildup and balance the natural regime. (Arno, et al 1999, Pyne 1995, Noss et al 2006, Miller, 2013) The benefits can vary depending on the terrain, size and severity of the fire. The Santa Clara case points to the need to take an interdisciplinary approach in all phases of fire planning and response. The forests of the Southwest United States are not comparable to the great boreal or temperate rainforests of the North. In the Southwest, ponderosa and spruce forests usually exist on the isolated peaks and mountain ranges—The String of Turquoise—that feeds the watersheds critical to all life. An adequate snowpack and gradual melt in the dry springtime provide the water for most life forms. In recent years drought and lack of frequent low-intensity fires combined with past p ractices like logging and grazing to bring about the result of unhealthy, disease-prone forests. These densely packed forests cut off sunlight from the forest floor, arresting the development of grasses, shrubs berries and insects that are foundations of the forest food chain. As temperatures warm up, fires of increasing size and intensity are the result. Historically, prescribed fire and unsuppressed natural ignition fires were frequent in the Jemez Mountains and Puebloan thinning practices for agriculture opened up areas. (Margolis, Swetnam, Allen 2013) As Pyne has noted "Much of the natural world that preservationists seek to protect co-evolved with anthropogenic fire. To remove that fire regime may be catastrophic…" (Pyne, 1995) In the case of the Jemez Mountains, very little land is allocated to wilderness. It is possible that if wilderness areas were expanded with specific legislation that dealt with restoring

the natural fire regime through carefully planned prescribed fire, that risk might be reduced.

The recent fires originated outside Santa Clara Pueblo lands and they were all sparked by human activity. Conditions on public lands combined with climate change and increased human habitation and activity led to the incendiary conditions where fires ran up the steep canyon terrain and created high risks for firefighters. Not only are the fires larger and faster—Las Conchas moved at an acre per minute in its early stages—but the areas burned again just a few years before by the Cerro Grande fire. The after-fires meant the re-burning of a fire-burned area to create a massive scar with damaged and unstable soils.

The Cerro Grande Fire in 2000 burned 12,000 acres of forest on Santa Clara Pueblo lands. In 2011, the Las Conchas Fire was worse: it burned over the old fire scar and entered the Santa Clara watershed again. This time the Pueblo lost 16,600 acres of forested tribal lands and 80% of the watershed was impacted in this 150,000 acre fire. The Dome Wilderness on Forest Service lands burned twice. The Thompson Fire in 2013 burned in the Valle Caldera National Preserve, only 20 miles south of Santa Pueblo lands. The floods that followed the fire-ravaged lands in summer ripped away trees, destroyed cultural areas, and filled the riparian areas and fishponds with mud.

The Importance of Traditional Knowledge

The Canyon and all of its beings, including the Santa Clara People, hold a rich storehouse of phenological knowledge necessary to conduct sustainable agriculture and conserve wild areas as shrines. A ceremonial calendar connects people with the land, the wilderness sources of water and life and the harvest and planting cycles. Over the years the Pueblos drew from their treasure house of knowledge, for taking care of the forests, for dry land farming and later for indigenous irrigation systems. This existence was, and remains, based on access to clean water sources that emerge from federally protected lands and wilderness and tribally protected areas.

The knowledge they hold—traditional knowledge—is knowledge in motion across time, passed through the centuries by a community of people. Dr. David Warren, an intellectual leader from Santa Clara Pueblo, speaks of where it comes from and the intergenerational reach of the Santa Clara model:

> "I think it would be well for us to remember whatever was defined by the earliest people here in defining the universe. The area we live in is a little crucible. It is bounded and it is shaped, and it is defined by the physical mountain ranges. I think it is within that crucible that for 10,000 years, perhaps even longer, people had learned to live on the margin of many, many kinds of limitations…in the human and material resources that define a land that has got very little water." (Loeffler 2008 p.83-84)

He suggests that knowledge is found in the visible artifacts of the past that are understood through cultural transcription through hundreds of generations—through the story of the Cliff Dwellings, the pottery, the symbols, and the language. (Loeffler, 2008)

Joe Baca, Intergovernmental Coordinator for the Pueblo, eloquently described three components that support traditional knowledge forming the basis of Santa Clara identity that should not change. (Baca 2013)

1. The language—language carries the traditional ideas and concepts, the oral history, the vehicle for continuance of traditional ecological knowledge. Kha P'o Owinge means Valley of the Wild Roses implying the beauty of the existence of extensive riparian areas.
2. The arts of the Pueblo: famous for its pottery, the Santa Clarans use a variety of symbols like Avanyu (the water serpent and protector) that carry cultural meaning. The practice of pottery-making uses native clays, handwork and the firing process uses dried manure not fossil fuel.
3. The ceremonial life and ceremonial calendar along with wisdom of the elders. Dances mark events in the ceremonial calendar, renew the bonds with the land, the waters and the forest. The elders and the kiva leaders still control the decisions of elected tribal leaders.

All three of these components connect the people with the wilderness headwaters of Santa Clara Canyon and the waters of the Rio Grande in a model for living with wild places. The waters that issue from the shrine high in the Canyon support sustainable agriculture and the life ways of the Pueblo. Of particular importance is the ceremonial calendar "in which, each event is associated with traditional seasonal tasks, also reflects the Tewas' view of time" and the importance of seasonal transitions. (Sweet, 2004, p.30)

Resilience and Traditional Knowledge in the Post-Fire Situation

The commitment to retaining cultural identity and an ancient relationship to the waters, lands and life systems while preparing for an uncertain future is the essence of resilience. Repeatedly, voices from the Pueblo spoke out that they would remain, that they would continue to be the stewards and that their way of life is inextricably linked to protecting the watershed.

Floods follow severe fires in the summer monsoon season. Another impact of the changing climate emerges with more intense monsoon rains that are further apart leading to flooding and erosion. Faced with the triple threat of damage to cultural sites, wilderness shrines, and their way of life from a nine-foot wall of water rushing down the Canyon during monsoons and unstable soils, Governor Dasheno concisely stated the problem:

"We are devastated by the vast damage to our once beautiful Santa Clara Canyon and P'o pii Khanu, states Walter Dasheno. "This is our only homeland, the place we have been entrusted with since time immemorial. Never again in our lifetime will we see our Santa Clara Canyon, as we have known it. It will take generations for our community and lands to recover from this fire." (NMCF 2011)

The Pueblo works closely in partnership with the New Mexico Community Foundation to meet the immediate needs of families and begin the restoration work on their wilderness

shrine. They involve children and youth in replanting trees so that they will remember. But response to the Pueblo's needs has been slow and trust needs to be built with surrounding agencies. There is a great need to incorporate traditional knowledge and cultural concerns at all levels of planning, fire response, and post-fire restoration.

They face many barriers to re-wilding. Although FEMA monies are available, they can only be used to restore past infrastructure. (Baca, 2013) This means that needs for infrastructure change that would better protect the watershed cannot be improved with traditional knowledge. Since the Reagan administration, significant sources of emergency funding for Tribes come through the State. The Governor must work with the Regional Forester and then release the funds. (Baca, 2013) In any state, these are two of the busiest people and bringing them together and up to speed on what the funds were for creates long delays. Santa Clara Pueblo still waited for several years for the funds for projects that were delayed before the fires. Better coordination between state, federal, tribal and local governments is needed if wildlands and watersheds are to be protected: the state legislature in New Mexico passed a resolution calling for just that.

BAER (Burned Area Emergency Response) implementation teams can pose additional problems. Run by the Bureau of Indian Affairs (BIA) for reservation lands, there exists a tendency toward uniform prescriptions for one-size fits all practices that exclude traditional knowledge and that often present environmentally and culturally inappropriate solutions. The desire to adhere to practices in line with traditional principles, even in new situations, creates conflict with fire restoration efforts. After a fire in the Southwest, part of the restoration effort includes activities to prevent flooding after the loss of trees and vegetation to hold the soil. At Santa Clara, in keeping with traditional practices and principles of using materials within the watershed, they requested the use of wood mulch to help accomplish this task. Instead, the restoration that was done through the BIA used straw. Unfortunately, straw can contain invasive seeds that can change the watershed carrying the potential to bring plants that compete with native species. Also, straw is a lighter material than wood, and is less likely to hold in major rain events.

A second example comes out of the BAER implementation team insistence on tributary treatments utilizing sandbags and cable-rails, since rock check-dams failed after the 2011 fire. However, these new technologies may not work well in this environment and may have negative aesthetic, cultural and ecosystem impacts. In fact, extensive use of sandbags may not only be ineffective, but may have deleterious effects on pristine conditions and water features by releasing large amounts of sand into the watershed when the bags eventually deteriorate. This represents s a failure to understand the waters of the Canyon within the traditional category of "fast water" (Loeffler, 2012 p.44) that must be treated differently than slow waters such as the Rio Grande.

Michael Aune describes another alternative: the installation of hundreds, perhaps thousands of smaller rainwater (flooding) retention basins toward the top of the mountains to slow the speed of the flow before it picks up steam and becomes a destructive flash flood. The benefits of more hand-built earth and rock retention basins toward the top include holding water, including snowmelt, for longer periods of time to allow it to soak into the ground at the higher elevations. This minimizes the stress on trees, though it doesn't eliminate it, due to prolonged drought. (Greenfire Sept 2013 p. 33). The benefits are many: water seeping slowly through the basins feeds the underground aquifers and provides water for wildlife. It could be accomplished mimicking pre-historic systems using native materials in low-profile structures that meld with the landscape. Once before Pueblo peoples employed handmade rock and earthen dams, utilizing traditional knowledge, technology and materials found within the watershed.

The fourth element is partnership. A recent debate in the state legislature focused on the need to include watersheds and fire dangers on National Forests in state planning, passing two resolutions requesting the Forest Service, the Bureau of Land Management and the Core of Engineers and Bureau of Reclamation to participate in integrated watershed planning and to identify and implement hazardous fuel reduction on Forest Service properties. (Aune, July 2013) Prescribed burning comes with risks in this dry, drought plagued era, but traditional knowledge about prescribed fire can assist in implementing low-intensity burns in specific areas. Santa Clara Pueblo has reached out to universities to partner with them in creating a restoration plan for their severely damaged forest shrine, but so far none have responded. There is a need for more opportunities for tribal employees to obtain forestry restoration training and forestry degrees locally so they can remain at home and begin the work with the "two-eyed vision of their traditional knowledge and western science.

All of these blockages can be removed through partnerships and the resilience of traditional wisdom held in the three components that should not change for Santa Clara Pueblo.

Kokopelli, Research and the Question of Intervention

Kokopelli is the great symbol of the creative spirit that connects with dynamic energy, productivity and fertility in the Southwest. (Cajete, 2013) He carries seeds on his back and a flute in his hands. He symbolically represents traditional knowledge and the spirit of innovation. He offers us guideposts for limited and respectful intervention when conditions become extreme and out-of-whack in the fire-prone ecosystems of the Southwest.

More will be needed to establish effective partnerships with state, federal and local agencies in order to bring traditional knowledge into the planning processes for fire and post-fire actions. It has been noted that the "difference between agencies, ecosystems, wilderness size and political factors make it difficult to generate consistent policy for the greater wilderness preservation system. This leads to inconsistency in how policy is translated into action." (Lawhon 2011 p. 177) Beyond these concerns, there is great need to extend this coordination and enhance understanding of special tribal areas that carry wilderness values as culturally defined by Tribes. The full implementation of the Forest Service's Sacred Sites Policy will be an important support. The United Nations Declaration on the Right of Indigenous Peoples calls for more work like this to be done. Further, the Council on Environmental Quality could set standards

for incorporating traditional knowledge into the planning process. Secretarial Order 3206 defines the responsibility of agencies to solicit traditional knowledge in important actions like Recovery Plans for endangered species. (Secretarial Order, 1997) Fire planning under the extreme threats now facing the Southwestern forests should do no less. Protocols for working together need to be in place and regular round-table meetings for joint planning established not only for officials, but for the environmental, emergency and fire management personnel from all the parties. Voices from the Pueblo remind us all that we are responsible for protecting and healing wild places: "While we are devoting all the resources we can to the protection and healing of our land, we can't do it alone," says Pueblo Governor Dasheno." (NMCF 2012)

Even in catastrophe, the spirit of Kokopelli may lead us. Through research and traditional knowledge, combined with continued cultural remembrance of seasonal cultural activities and tasks, we may find pathways to protect larger areas in the Jemez that help restore the natural fire regime and the regenerative power of its wild areas.

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Appendix

Santa Clara Pueblo Partners With New Mexico Commmunity Foundation to Establish Santa Clara Pueblo Fund

Fund to Provide Assistance in Fire Rehabilitation and Flooding Mitigation Efforts for People and Places of Santa Clara Pueblo

Santa Fe, N.M.-Santa Clara Pueblo, in partnership with the New Mexico Community Foundation (NMCF), announces the creation of the Santa Clara Pueblo Fund to support the current and long-term costs of fire rehabilitation and flooding mitigation efforts in Santa Clara Canyon after the devastating loss of thousands of acres during the Las Conchas fire in northern New Mexico.

The pueblo is actively engaged in flash flooding mitigation. The Santa Clara Creek is being lined with sand bags, concrete barriers, and other measures to protect homes, tribal buildings, irrigation systems, wastewater lagoons and farmland. The Santa Clara Pueblo Fund will also provide assistance with food, water, shovels, and other urgent necessities for pueblo residents and volunteers.

Santa Clara Pueblo lost more than 16,600 acres-or 80 percent-of tribal forested lands in the Las Conchas fire, and 95 percent of the pueblo watershed has been impacted. Thousands of acres of ancestral lands outside the reservation have also burned. With the start of the summer monsoon season, pueblo officials fear further destruction due to possible flooding and additional damage to pueblo water sources and their impact on local homes, buildings, irrigation systems, farms and wildlife.

An advised fund of NMCF, the Santa Clara Pueblo Fund will provide a central source for public contributions that will be used for short-term fire and flood suppression efforts and long-term rehabilitation, stabilization and repair efforts in Santa Clara Canyon. The fund is intended to help the pueblo address both the known and unforeseeable impacts from the Las Conchas fire now and in the future. One hundred percent of all donations to the fund will go directly to the pueblo relief effort.

"The New Mexico Community Foundation is proud to partner with Santa Clara Pueblo to provide immediate and long range financial assistance to pueblo residents and landscapes during this tragic time," says Jenny Parks, NMCF President and CEO, noting that NMCF has already directed $10,000 in fire relief funding to Santa Clara Pueblo since the start of the Las Conchas fire. "The impact of the Las Conchas fire to the quality of life and cultural traditions at the pueblo is heartbreaking. We encourage all New Mexicans and those who love New Mexico to contribute to this fund and help our pueblo neighbors."

"We are devastated by the vast damage to our once beautiful Santa Clara Canyon and P'o pii Khanu, the headwaters of our Santa Clara Creek," adds Santa Clara Pueblo Governor Walter Dasheno. "This is our only homeland, the place we have been entrusted with since time immemorial. Never again in our lifetime will we see our Santa Clara Canyon as we have known it. It will take generations for our community and lands to recover from this fire. We thank the New Mexico Community Foundation for its efforts on our behalf as well as all those who have already sent their prayers and financial assistance."

The economic, emotional and cultural impact of the Las Conchas fire is crippling for the people and places of Santa Clara, a Tewa-speaking pueblo located in the fertile Rio Grande Valley of northern New Mexico. The pueblo's sacred Santa Clara Canyon has long been its major cultural attraction, a deep tree-lined retreat with several mountain ranges, fishing lakes, and hunting and cultural areas that are held dear to the Santa Clara people.

Now, however, smoke and safety concerns from the fire have led to the closure of the popular Puye Cliff Dwellings and a loss of tourist dollars due to a decline in pueblo arts and crafts sales and in visits to the tribe's nearby hotel and casino. The threat to the health and safety of pueblo residents is of ongoing concern amid the destabilization of pueblo lands, including falling boulders, downed trees and displaced debris.

According to the pueblo, although community residents are resilient, there is a presence of anxiety, stress, depression and sadness about the loss of forested areas and the threat of flooding. Tribal behavioral health personnel and partners are addressing this and other human considerations that can lead to loss in productivity and livelihood for pueblo residents.

Currently, Santa Clara fire crews have been working alongside local, state and federal emergency teams to fight the fire, while pueblo residents and volunteers are helping to fill sand bags and install barriers to protect the community from possible flooding.

"While we are devoting all the resources we can to the protection and healing of our land, we can't do it alone," says Pueblo Governor Dasheno.

For more information on the Santa Clara Pueblo Fund, please contact Libby Madden, NMCF Director of Development, at 505-270-9624 or emadden@nmcf.org.

To make a gift to the Santa Clara Pueblo Fund, please visit http://www.nmcf.org/ or contact the New Mexico Community Foundation Albuquerque office at 505-820-6860.

For other inquires to the Pueblo of Santa Clara, please contact Joe Baca, Intergovernmental Liaison and Public Relations Director, at 505-929-7061 or jpbaca@santaclarapueblo.org.