

Elijah Blumenkranz

Sasha Gilmore

May 5, 2022

The Co-Managing of Wildfire with Indigenous Peoples on Public Land¹

Abstract

This project began with the idea of co-management of public lands with the indigenous peoples of the area, and quickly focused on programs for wildfire management that are demonstrating the success of this approach.

Our main goal is to outline why states should work with tribes on a broader scale to co-manage fire prevention efforts. Putting modern technology together with traditional ecological knowledge (TEK) holds promise for progress. Wildfire is everyone's problem, especially in California, and it has been demonstrated that co-management can aid in achieving a safe environment for all citizens. By working together with tribal groups to empower the use of TEK on a broader geographical scale, our government agencies will be able to fight fire more effectively and mitigate a significant amount of the harm caused to forests, human health, and property. Fire solutions themselves are place-based and there is an advantage to using local knowledge of indigenous fire systems in combination with vast government resources and modern technology.

However, for this to work successfully, it requires strong relationships between tribal and non-tribal parties, based on collaborative training, iterative communication, and consistency that includes clear initial agreements (MOUs). Respect is critical in this process and the building of

¹ The authors were students in the Boston University College of Arts and Sciences class "Research for Environmental Agencies and Organizations" taught by the Earth and Environment Department's Richard Reibstein. It is posted under Spring Semester 2022 at www.bu.edu/rccp.

trust is often slow and gradual. Through co-management of the land with indigenous people, our government can work towards righting the historical wrongs and injustices committed against Native Americans, advancing a reparative relationship with both the people and the land.

We are grateful to the seven individuals currently conducting work on wildfire co-management who gave us valuable insights:

Brian Riley, Jemez District Ranger, US Forest Service

Christopher Roos, Southern Methodist University, Professor of Anthropology

Mary Huffman, Indigenous Peoples Burning Network (The Nature Conservancy)

Carolyn Drouin, US Department of Interior Land Buy-Back Program for Tribal Nations

Sam Scranton & Robyn Broyles - U.S. Dept of the Interior - Bureau of Indian Affairs

Jeff Kirwan, Virginia Tech, Emeritus Professor

Background

Indigenous tribal peoples have been continuously living in what is now the modern-day State of California for nearly 20,000 years (9). Over this period of time, the native people have learned how to utilize fire to manipulate their landscapes and control the natural cycle of wildfires to protect their settlements at the wildland-urban interface (WUI). Ancient traditional ecological knowledge (TEK) practices surrounding fire management, such as intensive wood collecting and thinning, which were passed down from generation to generation in order to uphold the stability of the WUI. The relationships that indigenous people made with fire allowed them to make their settlements resistant to extreme fire behavior during centuries of habitation (10). The use of fire by tribes like the Karuk and Yurok people of Northern California has been essential for food supply and cultural practices like basket-weaving, as burning the land causes

useful plant species to grow in abundance. The indigenous fire management methods of implementing controlled, strategic, planned burns made for a more predictable landscape that burned frequently in small areas, but seldom experienced widespread or uncontrollable fires.

During the Gold Rush of the mid-19th century, the native people of California were hunted down, killed, and thrown off of their ancestral land in large numbers by White prospectors and settlers during the California Genocide. In the 1850s, nearly twenty treaties were signed between tribes and the United States government, giving 7.5 million acres of land to the tribes. However, these treaties were secretly thrown out by the Senate at the request of the State of California (4). By the turn of the century, the U.S. government had required the vast majority of the tribal people left in California to reside on small reservations, where many continue to live to this day. Today, the total land area of the Yurok tribe's reservation, the largest tribe in California, is about 50,000 acres. To put that number into perspective, the State of California has a total land area of 100.2 million acres, of which nearly half is owned by the federal and state government (5). The enormous loss of land to the U.S. government has greatly affected the ability of native people in California to conduct their traditional ecological and ceremonial practices in the same ways that they did in the past. This has in turn affected all of us as the fire prevention actions they took were abandoned. The current common intensity and spread of wildfires, endangering communities throughout the state, is not just due to global warming, but also in some part due to the abandonment of the controlled burning practices of the indigenous peoples.

State and federal agencies, which manage much of the ancestral land of the native Californians, have historically maintained policies about wildfire management that widely conflicted with the traditional ecological fire management methods of the indigenous people.

The Euro-American fire management ideologies, which drove policy-making for U.S. government agencies, held total fire suppression as the standard. In 1850, at the height of the California Genocide, the first session of the California legislature passed legislation that mandated the suppression of fire (8). In 1911, the Weeks Act was enacted to better organize wildland firefighting efforts, essentially outlawing the use of culturally prescribed burns.

Modern-day Californians in major population centers such as Los Angeles, San Diego, and San Francisco suffer many of the negative effects of massive wildfires. Smoke-filled skies, terrible air quality, destruction of property, and even death are misfortunes that the people of California regularly face due to wildfire. These fires cost billions of dollars in damage to housing and infrastructure, in addition to an incalculable amount of damage to the local ecosystems. Tribal Californians who live on reservations far away from major population centers also suffer the effects of these disastrous wildfires. These fires often occur on large tracts of state and federally owned forest, outside of the tribal possession and influence.

Over a century of strict fire suppression policy adherence by the USFS and other government agencies has “created the conditions for the catastrophic, high-intensity wildfires we are seeing today” (6). The effects of climate change and global warming have also undoubtedly worsened the wildfire problems that California faces.

Thankfully, over the past few decades, the attitudes of government agencies are slowly changing and moving towards using more TEK and involving more native people in wildfire management, but the implementation is still in its nascent stages and is not widely applied. One great example that we found of collaborative wildlife co-management with indigenous people on public land carried out by a government agency was the U.S. Forest Service in Jemez, New

Mexico. We spoke to Brian Riley, the Jemez District Ranger, about his experience fighting fire alongside tribal folk and queried him about the extent of the agency's use of TEK.

Brian Riley - Jemez District Ranger – Santa Fe National Forest - Forest Service - U.S.

Department of Agriculture

Brian works closely with Native Americans of the Jemez Pueblo and laid out in detail how that has been helpful to his mission, and how important it has been to build a relationship of trust. The National Forest engages in both recreation and land and resource management which is a nexus that is important when discussing fire management. Brian's position as a ranger specifically entails responsibility for the Jemez District and in terms of firefighting he acts as a supervisor and fire line officer. The Jemez District shares its boundaries with four tribal land-holdings and the Forest Service members regularly interact with the tribes for a large array of land management purposes (11). The USFS firefighting crew is approximately 10% tribal according to Brian and many programs exist within the department to contract local native people as crew members. The agency invites Native American firefighters to share traditional knowledge and information during training. However, none of the tribal firefighters on the USFS Jemez crew are "crew bosses" because of the lack of necessary training and experience.

USFS firefighters need to possess a "red card" certificate for health requirements and take basic courses about wildland fire knowledge in order to work with the agency. The Jemez Pueblo itself also has its own designated tribal crew called the Jemez Eagles who are widely known as skilled firefighters. The crews regularly work together to fight fires and communicate at a high level to conduct practices like prescribing fire, thinning, and weeding.

When asked, Brian stated that the USFS is open to using TEK and currently runs fuel reduction programs based on indigenous methods on FS-owned land which lies to the south of the Jemez reservation. The fuel reduction methods include thinning the forest and piling the slashed plant material or “mastication” fuel treatment methods that produce mulch. Since the 1970s, the USFS has slowly turned away from the total fire suppression policy in favor of fire management policies involving prescribed burns. In the 21st century, the agency has also moved in the direction of working more closely with tribal groups, which according to Brian, was not the case 20 to 30 years ago. Aside from fire, one of the most important ways that the USFS in Jemez cooperates with the tribes is in the case of managing and protecting ancient Native American archaeological sites such as ruins, burial grounds, and other culturally sensitive physical areas.

Brian told us that the Jemez Ranger District is one of the densest archaeological zones in the United States. While on the job, whether firefighting or patrolling the backcountry, the Jemez USFS regularly comes across ancient sites, some of which are being “discovered” for the first time. Brian says that the first course of action is always to call the tribe immediately and ask them how to proceed. When conducting any type of environmental project in the district including fire management, Brian and his team must go through the National Environmental Policy Act or NEPA, which “requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions” (3). Under NEPA, the agency must attain certain permissions through federal certifications and assessments, such as considering the effects on endangered species and protecting vulnerable creatures. Brian says it involves lots of scrutiny and mandatory public meetings “that can get pretty rowdy” to include all viewpoints. The meetings are always attended by senior tribal members and the assessments take into

account many tribal concerns. Nearly every environmental plan that is implemented in the area must go through this rigorous process.

When working with representatives from the tribal governments that surround the Jemez Ranger District, Brian emphasized that showing a high level of respect was the number one most important factor in having successful cooperation and discourse. “Respect” and “transparency” were the words Brian mentioned most when talking about maintaining great relationships with the tribes and he provided us with valuable insight into how the forest service conveys these feelings. The USFS treats their interactions with the tribes as “government-to-government relationships” where the two parties are on the same level and where the agency “lets the tribes know up-front” that they recognize their deep ancestral ties to the land. Brian highlighted that during meetings, it is important to spend “lots of time listening and less time talking” and to “demonstrate that you are not *just* listening, but are also doing what you say you will do”. The frequency of interactions is of utmost importance, as communication should be iterative and constant contact should be maintained always, both in formal meetings and out in the field. Since the Jemez Ranger District is one of the densest archaeological zones in the U.S., the USFS also respects the tribes’ wishes of never sharing the location of archaeological sites they come across, as the tribe wants them to remain hidden and thus protected from the general public. Brian underscored the significance of this point by telling us a story about how the local tribal governor used to go address the USFS firefighters every morning at 6 AM to remind them not to disturb any ruins or take any “souvenirs”. The tribes are involved and cooperate with the USFS on nearly every level, especially surrounding the protection of cultural property.

In 2012, the State of New Mexico suffered the misfortune of having the largest fire in the history of the state, called the Whitewater-Baldy Fire Complex. Brian said that the enormous

destruction opened people's eyes to the need for fuel management. He said that some people do not like the smoke of prescribed burns, while other folks simply do not like any type of forest management at all. The USFS subsequently put out press releases and commercials about fire management and fire safety to the general public. Besides prescribed burns, the USFS will often not suppress fires started by natural ignitions, such as lightning or high heat, and instead will allow them to burn in order to reduce fuel loading in the forest. Brian said that the Ponderosa Pine ecosystem has burned for thousands of years and needs to burn as part of its natural life cycle.

We asked Brian if he had any insight about how to go about relaying information and designing a guide or outline about fire management. The first thing he stressed was the creation of clear agreements or “MOUs” (Memorandums of Understanding) before co-management begins, to prevent having to improvise conflict resolution strategies on the fly. Once those MOUs are laid out, regular meetings should be held and online communication established to maintain contacts and find agreement quickly when necessary. Prior to the start of every season, proper pre-season planning should be carried out by both parties together in an organized and comprehensive fashion. Brian said it is essential that both sides know what the other “brings to the table” in terms of knowledge, equipment, manpower, and expertise so that when a big fire does occur, the co-management will be smooth and effective.

Christopher Roos - SMU - Professor of Anthropology

We then interviewed Professor Christopher Roos from the Department of Anthropology at Southern Methodist University, whose 2021 “Native American fire management at an ancient wildland–urban interface in the Southwest United States”, provides academic perspective on the

TEK practices and co-management of Jemez, New Mexico. The paper shows how TEK practices on Jemez Pueblo such as “ecologically savvy intensive burning and wood collection” have created a community “resistant to climate variability and extreme fire behavior” (2). The people of Jemez Pueblo intensively collect wood, taking small diameter trees and lower limbs in close proximity to their settlements to burn in the home rather than on the landscape, allowing them to heat their homes and cook their food. They also prescribe many small and patchy fires every year with a high frequency, rather than prescribed large fires over extensive burn areas on a low frequency. These ancient practices result in critical fuel hazard reduction that modifies the forest to make its fire behavior much more predictable and controllable, resulting in a stable wildland-urban interface.

We began our interview with the question “Why is this important?” in regards to the idea of wildfire co-management with indigenous peoples. Professor Roos said there were two dimensions: (1) co-management supports tribal sovereignty and the righting of historical wrongs and (2) co-management helps the government look towards native people’s traditional knowledge and skill as a positive template for the many benefits that fire brings to society and ecosystems. Professor Roos provided us with a brief history and background about the historical wrongs and mistakes committed by the U.S. government concerning wildfire management. For a period of over 100 years, from approximately the 1860s to the 1960s, the U.S. government agencies managing wildfires, principally the USFS, adhered to a strict policy of total fire suppression. It was not until the government had a stark realization about the ecological necessity of fire in certain ecosystems that they began to change their ways and move away from their policy of total suppression. However, within that centuries-long time frame of total suppression, our government agencies created conditions for the catastrophic wildfires we

witness in the modern day. Now, it is up to these government agencies to work together with native people using TEK to not only mend the personal relationship between the two parties, but also to mend the government's relationship with the land.

We asked about how to achieve a healthy fusion of modern technology and TEK. Professor Roos explained that tribal folks have spent generations losing things of value to them from settlers and thus they are highly sensitive to handing over valuable traditional information. Tribal folks do not want their knowledge to be disrespected, scoffed at, or dismissed, especially since many traditions involve mythology and ritual ceremony which do not align with traditional Christian and Euro-American values. Similarly, they do not want their knowledge to be misappropriated or misused by non-tribal parties. With these concerns in mind, a true equal-power co-management relationship must have tribal voices at every level and every step of the process. Professor Roos believes that if proper representation, as well as respect, is given, that total synergy and a great fusion of management practices will arise naturally. He ended the interview with the suggestion that government agencies should create more training opportunities for the necessary certifications that will act as a pipeline for tribal folks into federal positions.

Mary Huffman - Indigenous Peoples Burning Network (The Nature Conservancy)

Through Professor Roos we learned about The Indigenous Peoples Burning Network (IPBN), of which the Jemez Pueblo are members. The IPBN is a support network initiative among tribal communities in the United States that are bringing back traditional fire management practices in the modern day. The network is led by The Nature Conservancy's North America Fire Initiative and facilitates partnerships with federal agencies such as the U.S. Forest Service.

We had the privilege of conducting an interview with Mary Huffman, the director of the IPBN, and learned about her work in Northern California with the Karuk and Yurok tribes. Just last year, she told us, the State of California passed Assembly Bill 642 which addresses wildfire management and creates space for indigenous cultural burning. The bill defines “cultural fire practitioner and cultural fire...for the first time in state law” and signifies a shift towards governmental support of traditional prescribed burning methods, which has been acclaimed by the Karuk tribal leaders themselves (12). Mary conveyed that the legislation is laying the foundation for future partnerships between agencies and tribes involving the implementation of cultural fire applications on a wide scale in California, confirming the vision that began this investigation.

Mary and the IPBN are working to “create a scaffolding on which they [the tribes] can create partnerships, collaborate, and build on each other's successes” within the context of fire management. As a non-indigenous white person, Mary explained to us how she approaches collaboration with tribal groups and offered guidance about discussing fire co-management from the non-tribal point of view. Due to the destructive history between indigenous people and the U.S. government and white settlers (especially in California), Mary highlighted that the building of trust between tribal and non-tribal people with respect to land management is often a slow and gradual process. The establishment of true trust takes lots of patience, where the non-tribal party must give the tribal party ample time and be sure not to rush or force certain aspects of the partnership. In Mary's case, she mentioned that after working with the director of a tribe in Northern California on major projects for over three years, the director told her “I do not tell anyone anything important until I have known them for at least five years”. Mary emphasized that the building of trust is accomplished in small steps and comes from “a series of honorable

acts”, in which the tribal party understands that the non-tribal party has their best interest in mind. The job of Mary and the IPBN, as well as any agency that wishes to foster strong relationships with tribal communities, is not to tell the tribes what to do, but rather to listen long and hard to their concerns and needs.

Because of the awful betrayal and deception that has been historically carried out by the U.S. government against indigenous peoples, the approach of “we are here to help you” is a frightening one, and the correct approach to co-management should run more along the lines of “how can we work together to help the environment?”. In the context of our project vision, we asked Mary whether she thinks fire co-management of public lands is something that the indigenous people of California would actually be interested in doing on a much broader scale. She said yes, but only if tribes are allowed to exercise their cultural burning practices in the traditional way within a space where the protection of their intellectual rights from appropriation is guaranteed. To be culturally sensitive toward tribal issues and traditional knowledge surrounding fire management practices, the proper incorporation of TEK into widespread fire management should steer far away from any effort to dig into sacred knowledge.

Overall, Mary emphasized that the process of building a sturdy and long-lasting co-management relationship must be taken step-by-step. It is common that Euro-American time frames and highly structured, strategic objectives do not align with those of tribal peoples. While the government may want to implement a certain land management project immediately, tribal groups may think it would be better to implement the project at a later time due to traditional evaluations of environmental conditions at that time. Thus, finding common ground in terms of fire management goals is of utmost importance. It is up to the historical oppressor and dominant society (i.e. the U.S. government) to make internal changes, not the oppressed (i.e. tribal groups).

The party that is familiar with the dominant culture and legal policies should be the one to crack it open and work towards implementing greater involvement of indigenous people within land management.

Carolyn Drouin - Land Buy-Back Program for Tribal Nations - U.S. Department of the Interior

One of the major avenues to giving indigenous peoples economic and political control is through the Land Buy-Back program offered by the U.S. Department of the Interior (DOI). This program was born as a result of the *Cobell v Salazar Settlement Agreement* that provided a \$1.9 billion Trust Land Consolidation Fund. This fund has been used to purchase fractional interests in trust or restricted land from sellers, essentially land consolidation. These consolidated interests are then restored to Tribal trust ownership for the reservation community and tribal members. As of now, around \$37 million remains in that fund, a looming number as the 10-year program is set to end in November 2022 (7). The main point of contact for both the tribes and landowners is Carolyn Drouin, who we spoke to regarding her position and the fate of the program itself. She provided insight into the relationship between the tribes and the landowners when conducting these exchanges how the past ten years have been successful, but also where it could use improvement.

As the communications director, she has worked with both the tribes and landowners and has witnessed the relationship between the two and how this program has provided an avenue for tribal nations to, in some fashion, get back the land that had been taken from them through the processes of colonization. Up until this point, it has been very successful, with BIA acting as the arbitrator for the two sides to come to an agreement on certain lands and how they should be

transferred. The parties have been able to come to peaceful and reasonable agreements that they both feel are fair, proving that this type of initiative can be beneficial if continued nationally or even in certain regions throughout the country. As mentioned, the program itself will be coming to an end this November as it was only a result of the settlement agreement, and therefore they are bound by the time period outlined in the arrangement. Seeing that there are still funds left to spend in the remaining six months, Carolyn stated they are trying to fully expend the remaining money towards these planned purchases, as any spare reserves will then go back to the treasury. Looking towards the future, although this program itself will come to a close, the initiative will stay alive in some form.

The Indian Land Consolidation Act, initiated in 2000 as a pilot program, is now a permanent program following the 2004 amendment. DOI plans to continue to utilize innovations that this program introduced. In addition, DOI's 2022 Green Budget includes funds for land consolidation. This raises the hope that once this specific program ends other groups and agencies will continue with this mission and ensure that the tribes reclaim something of what is rightfully theirs.

Sam Scranton & Robyn Broyles - U.S. Dept of the Interior - Bureau of Indian Affairs (BIA)

We also interviewed two staff of the Branch of Wildland Fire Management for the Bureau of Indian Affairs (BIA), which works to “protect lives, property, and resources while restoring and maintaining healthy ecosystems through cost-effective and creative fire-management programs, collaboration, and promoting Indian self-determination” (2). Self-determination in this context refers to the process by which a person or group controls their own life, a power that was taken from the indigenous during the colonization of the States. There are

different types of self-determination that fall into this category: political participation, free and fair elections, democratic government, good governance, public accountability, and political participation (7,1). BIA acknowledges that Indian Country lands are not public property but rather that this land acts as the course of a tribe's emotional, cultural, economical, and spiritual sustenance that future generations will depend upon. The Indian Country's Wildland Fire Management Program was implemented through direct self-determined or self-governance services. Self-governance, apart from self-determination, refers to the broader aspect of having control or rule over oneself, specifically, being autonomous. The tribal members work and are directly involved with the protection and management of their cultural and natural resources.

Sam Scranton, wildfire prevention program manager, has worked on the ground and now at a high level, and was involved with the fuels management program that was started in 1987. Although he now works at the interagency level establishing policies, guidelines, standards, and training, he still has a constant connection to the tribal groups and works with them consistently on programs surrounding fire prevention that the tribes utilize. This relationship that they have formed, in his eyes, is a give and take relationship. It is important that the tribes are not being taken advantage of, nor is their knowledge being used without their consent. Their traditional knowledge is just as important as current technological advancements and must be respected. In the wake of the pandemic, he did mention that they had to go through a transition period to adapt programming and communication virtually, and although we are two years after the fact, things are still in the transition phase to reaching the old "normal". This was a considerable challenge for his specific role, as communicating with these groups is one of the main facets of achieving this balanced relationship. One last topic we discussed was the dissemination of his programs to different audiences, especially the youth. He agreed that they are one of the main targets to focus

on, as they will be the future leaders and firefighters to take on this work, and therefore, they should be involved in these processes from the start, to gain the necessary knowledge and contribute their own valuable opinions into the work they produce today.

Robyn Broyles, one of two fire communication and education specialists at the Bureau, works to inform a broader audience about the fire-related programs. She has been in fire for 22 years, taking on numerous roles including law enforcement, wildland fire, and emergency management. In her current role, she mainly works with other agencies and regional personnel that collaborate more closely with the tribes than she, in her high position, is able to do. In this sphere, there is a combination of tribal and agency employees working together. However, she made it clear that the tribes do most of the work when it comes to implementing the forest and vegetation projects and in writing the forest management plans. BIA and the following agencies are there for support and funding but want to ensure that they are not taking the power and decision-making from the tribes, as it is their land that they are working on and know best. In terms of fire management itself, firefighters are highly respected and valued in this line of work and in their society as a whole. Again, reaching out to youth, especially high school students on reservations involving this kind of work was one of her main focuses and targets when circulating and communicating this fire-related information and curriculum. This project did not entail a systematic review of DOI's performance over the country, with all tribes. But we found signs that the Bureau of Indian Affairs has been able to form and maintain healthy relationships with some of the tribes that they work with around the issue of fire management. This is of benefit to everyone.

Jeff Kirwan - Virginia Tech Emeritus Professor

Our final interview provided us with the invaluable perspective of an indigenous person concerning fire co-management. Jeff Kirwan is a former Professor of Forestry at Virginia Tech and member of the Nause-Waiwash Band of Indians, referred to by Mary Huffman at the IPBN. Jeff told us about the tribal marshland that he owns in Eastern Maryland. A tribal elder told Jeff that the marshland should be burned every year, but the problem of adjacent houses and a church, as well as the lack of necessary manpower for the job, presented enormous obstacles for Jeff. It was impossible for a single person to scorch and he needed to find people to partner with in order to properly set fire to the marshland. Jeff began working with The Nature Conservancy, which made all the initial contacts and convinced people from the national wildlife refuge next door to his property to join them in igniting the marsh. The collaboration was a great success as the governmental folks at the national wildlife refuge provided the resources needed to complete the job of burning. Jeff emphasized that this would not have been possible without co-management between tribal people and the government, and he highlighted the benefits of having each party bring their own strengths to the table.

To conclude our short interview, Jeff provided us with advice and guidelines about relaying information and concerning how to foster trusting relationships between tribes and the government. Jeff said that actions matter much more than words in a co-management relationship and that high levels of mutual respect can be achieved only if both parties consistently do what they say. Finally, Jeff cautioned us about overly criticizing government agencies and advised that we should first compliment agencies about the things they are doing right, before discussing what should be done differently or further implemented.

Conclusion

One major goal of this project was to end with an outline of the reasons why California should consider implementing wildfire co-management with the indigenous peoples of the State on a broader scale. Through our direct discussions with experts in this field and those in direct contact with the tribes in California, this goal has come to fruition. We believe that scaled-up TEK practices can work, if implemented with proper respect.

We particularly think it can work well to aid large cities like San Diego and Los Angeles that are facing severe wildfire threats. Strong relationships with tribal groups must be maintained to see this conclusion come to light. Effective collaboration, constant communication, and consistency in action are the keys to ensuring that these practices are initiated and sustained efficiently to benefit all parties.

It was important that we had multiple scales of analysis, at the federal and state level as well as those working on the, different perspectives. One way students can take our project to the next level could be by focusing specifically on one piece of public land which borders tribal land, where both parties can benefit, and the students can attempt to contact both parties to arrange a partnership. Additionally, the students could focus on a different issue within co-management, such as water or wildlife. Whatever project is undertaken, it is crucial to remain culturally sensitive and aware of topics surrounding traditional knowledge, as this country's past and present have resulted in tension, pain, and loss for indigenous groups.

We were grateful, that after setting out to find if co-management with tribal nations was a feasible vision, that we found that it is. We are especially grateful to all those who made time to speak with us on this topic and provided valuable insight and information. They broadened the scope of this project farther than we imagined it would go, when we set out.

Works Cited

1. Alfredsson, G. (1996, January 1). *Different forms of and claims to the right of self-determination*. SpringerLink. Retrieved May 1, 2022, from https://link.springer.com/chapter/10.1007/978-1-349-24918-3_4?noAccess=true
2. *Branch of wildland fire management*. Indian Affairs. (n.d.). Retrieved May 1, 2022, from <https://www.bia.gov/bia/ots/dfwfm/bwfm>
3. Environmental Protection Agency. (n.d.). *What is the National Environmental Policy Act?* EPA. Retrieved May 1, 2022, from [https://www.epa.gov/nepa/what-national-environmental-policy-act#:~:text=The%20National%20Environmental%20Policy%20Act%20\(NEPA\)%20was%20signed%20into%20law,actions%20prior%20to%20making%20decisions](https://www.epa.gov/nepa/what-national-environmental-policy-act#:~:text=The%20National%20Environmental%20Policy%20Act%20(NEPA)%20was%20signed%20into%20law,actions%20prior%20to%20making%20decisions)
4. *FAQs about California's Indian tribes and Tribal Communities*. (n.d.). Retrieved May 1, 2022, from <https://www.courts.ca.gov/documents/TribalFAQs.pdf>
5. *Federal land ownership: Overview and Data*. (n.d.). Retrieved May 1, 2022, from <https://sgp.fas.org/crs/misc/R42346.pdf>
6. *Fire works!* karuk climate change projects. (2019, December 3). Retrieved May 1, 2022, from <https://karuktribeclimatechangeprojects.com/fire-works/>
7. *Land buy-back program for Tribal Nations*. U.S. Department of the Interior. (2022, April 27). Retrieved May 1, 2022, from <https://www.doi.gov/buybackprogram>
8. Norgaard, K. M., & Norgaard, K. M. (2019, December 10). *Colonization, fire suppression, and indigenous resurgence in the face of climate change*. YES! Magazine. Retrieved May 1, 2022, from

<https://www.yesmagazine.org/environment/2019/10/22/fire-climate-change-indigenous-colonization>

9. O'Brien, C., & Kiffel-Alchek, J. (2021, October 5). *Native people of California*. History. Retrieved May 1, 2022, from <https://kids.nationalgeographic.com/history/article/native-people-of-california>
10. Roos, C. (2021, January 18). *Native American fire management at an ancient wildland–urban ...* - *PNAS*. Retrieved May 1, 2022, from <https://www.pnas.org/doi/10.1073/pnas.2018733118>
11. *USDA Forest Service*. Santa Fe - Home. (n.d.). Retrieved May 1, 2022, from <https://www.fs.usda.gov/main/santafe/home>
12. Vanderheiden, I. (2021, September 18). *2 California bills aim to use prescribed burns to enhance wildfire protection*. Times. Retrieved May 1, 2022, from <https://www.times-standard.com/2021/09/18/2-california-bills-aim-to-use-prescribed-burns-to-enhance-wildfire-protection/>