Transcript of California Burning Episode 2

Native Intelligence

Matt: This is California Burning, a co-production of North State Public Radio. I'm Matt Fidler. The purpose of this series is to strengthen our understanding of the wildfires that we've been experiencing here in California. Not just so we know why these fires are happening, but so we can do something about it, because these fires are getting worse, causing more damage, more smoke and affecting the way that we all live in the great state of California. This is the second episode in a five-part series. All episodes can be found in podcast form wherever you get your podcasts, or at californiaburning.net. In the first episode of this series, we talked about the history of the U.S. Forest Service and how we were taught, and well directly told, that fire in our forest is bad. Fire is always bad. It destroys trees. It pollutes our water, it puts smoke into the clean air and it's dangerous, it burns our homes, so we need to completely eliminate it from the landscape. We were told this over and over again as the United States expanded into the West. Soon that became, "Only you can prevent forest fires," which we learned in the last episode just isn't true because you can't stop all forest fires. But we can prevent catastrophic out of control wildfires like the ones we've been seeing in California lately. And one way of doing this is by setting low-intensity controlled or prescribed burns, the way the Native Americans did it. This is why I'm camping at the Yurok Indian Reservation.

Margo Robbins: There is something amazing about fire. When we put fire on the land, there's something about it that just, it speaks to your spirit. It's like you connect with it and you connect on a deeper level with the land. And it is so gratifying to be able to take care of the land in a way that our ancestors did and to provide a service for the community.

Matt: That's Margo Robbins of the Yurok Tribe in far Northern California. She's the president of the Cultural Management Council and a cultural practitioner of fire. We met in the tiny village of Weitchpec, at the edge of the Yurok reservation. I hop in her car and we start to drive deep into the forest.

Matt : All right, so we're recording now.

Matt: The history of the treatment of the Native Americans is of course a tragic one, but this episode is about learning from the past, not lamenting it.

Matt : How far are we, how far are you taking me up this hill here?

Margo Robbins: Going to take you deep into the forest and leave you, eh. (Laughter) You might want to start dropping bread crumbs. (Laughter)

Matt: Cutting the ice, Margo drives me to a place where I can see some of the benefits of a prescribed burn.

Margo Robbins: We're going to go up here a couple of miles. We did a controlled burn up here about a year and a half ago. And the purpose of this burn up here was to propagate basket weaving materials. Hazel. So hazel is a serotinous plant. It needs fire to reproduce new shoots and we use those new shoots that come straight up out of there, out of the ground, for basket weaving.

Matt: Baskets were used for everything, from collecting food and other materials. They cooked with them, they ate with them, they even fashioned baskets to carry their babies. A Native American family in California could have easily gone through a hundred baskets each year, but for the last 100 years or so, it's been illegal to burn the landscape, which meant they couldn't get the sprouts that they needed for basketry.

Margo Robbins: The only basket materials that we would be able to get is if there was a, we have a lot of, I call them renegade burners; Cal Fire calls them arsonists. But people tend to like starting fires from down there on Highway 169, and sometimes they'll be in a place where there's hazel, and so we would go out and pick. And then there was a period of time in the '60s when the powers that be came to realize that the landscape benefits from fire. And so Cal Fire and other places were more fire friendly and actually doing some prescribed burning. And so there was a period of time when people could burn and I'm not sure when exactly that changed, and then they started throwing people in prison.

Matt: That period of time was when ecologists and people like ranchers and hunters, who had experience working with and on the land, started understanding the fire-adapted nature of these forests. But the federal and state agencies didn't like the idea of setting fire to the land. Partially because of liability, partly due to the complaints about smoke and partly, and this was mentioned in the last episode, but I'll say it again, as a firefighter, your job is to put out fires, not let them burn. So in order to climb the ranks at the fire department, fires need to be fought, whether that was good for the long term health of the forest or not. So as Margo said, the powers that be shut the conversation down by throwing the people they labeled arsonists in jail. And before that, Margo says the

punishment for Native Americans who were caught burning was much worse.

Margo Robbins: In the early 1900s, late 1800s, the native people were actually shot for doing controlled burns. They were afraid of fire and they did not understand it, and so that was a pretty effective method of shutting down fire on the landscape.

Matt: And this is where Margo's role comes in as president of the Cultural Management Council. She's bringing back the culture of fire partially to revitalize her people's tradition of basket weaving.

Margo Robbins: Since the fire suppression area came in, in the early 1900s, it was very, very difficult to get sticks and the art of basket weaving was dying out because we had no materials to weave with. And so as a community we decided that the number one most important issue facing our community was this lack of fire on the landscape. And so as a community we decided to bring fire back to our ancestral territories, not only for basket weavers, but to protect homes because the landscape is so fuel laden, it's just brush, brush, brush everywhere thick with brush, and so it creates a huge fire hazard. And so in order to protect our homes and to have basket weaving materials for basket weavers and to make the land healthy again, we brought fire back to the land. That was seven years ago we started burning. And since then we have continued to burn twice a year during our traditional burn windows, which is the spring and the fall. But we have to go by the laws that have been put in place, not only by the state, but federally, and so when we burn, we have to have people with NWCG qualifications. It's like the national qualification system for firefighters.

Matt: And while this can frustrate Margo and others trying to bring back the culture of fire, the population of California just topped 40 million people. And we developed a culture out here where we make everything out of wood because it was plentiful. We also live in a state with many different stakeholders, private land owners, the federal government, the state government and local municipalities. So getting all these stakeholders to agree to anything is difficult. Then of course there's the fact that we're a litigious society where lawyers make a lot of money. So we sue one another whenever we make a mistake. So the idea of setting fires, which if aren't done carefully and at the appropriate time and place, can turn deadly, and that scares those who might be considered liable. But that doesn't take away from the fact that fire is how these forests were maintained for thousands of years and the forests adapted with those fires.

Matt: That's why on this episode of California Burning, we're going to learn a lot about the Native American practice of managing the land with fire: how they did it, why they did it and what this can teach us about our forests today in the modern 21st century world, as we struggle with a wildfire problem that is seriously threatening our way of life. And I know we can't go back to the California that the natives knew. Basket making just isn't a huge priority for most Californians these days, but we'll never figure out how to properly manage these forests if we don't take what they did to cultivate this land seriously.

Matt: This concept of maintaining a forest through prescribed burns was first introduced to me by fire geographer, Don Hankins.

Matt : What a beautiful a ledge here. Yeah. Wow.

Matt: Yeah, we're really right up on the, on the top of the ridge.

Matt: He teaches pyrogeography at Chico State University and I met him in the town of Forest Ranch, just a few miles into the foothills from Chico and just a few miles north of where the Camp Fire destroyed the Town of Paradise and the surrounding communities. Up in Forest Ranch and the Big Chico Creek Ecological Preserve, he's been doing research on how bringing fire back to the landscape can improve forest health.

Don Hankins: How frequently should fire be put into any given area to maintain the full spectrum of the resources that you would need in that area, right.

Matt: Using fire to maintain resources, not just get rid of them. This is why I'm walking through the forest with Don, a Plains Miwok, showing me around Forest Ranch an area that used to be home to the ConCow people.

Don Hankins: So traditionally speaking the people who lived in this area were speakers of the ConCow language, Koyoomk'awi. Locally in Chico, the Mechoopda tribe in Chico, has ancestral ties to this area. They burned, they burned a lot, and that's what maintained that open forest.

Matt: This idea of an open forest is an important one. An open forest has large trees with a canopy that covers the ground and shade, but has branches that you can walk underneath to pass through. The forest floor isn't too covered in dense chaparral and brush, or small trees so close together that they don't have room to get big or let you walk by them. An open forest is also fire resilient because large trees don't burn easily. And if there isn't a bunch of dead branches, brush and pine needles on the forest floor, it won't burn real hot or spread fire real fast. But most of our

forests today are overgrown and dense with small trees, brush and forest litter. Sometimes we call that forest fuel. And those dense forests are more susceptible to drought-borne illnesses and pest infestations, which then kills more trees causing more forest litter, making an even bigger fire hazard. Our forests are overly packed with small trees and brush because they haven't been maintained with fire for around a hundred years.

Don Hankins: You know, as we kind of look at the early seller records and early forestry records, densities of trees in the neighborhood of 40 to 100 trees per acre, right?

Matt : It's not that dense.

Don Hankins: No, it's not very dense. And you know, and so when we look at this, this is probably at that upper end, right? We're, you know, if we kind of look at the small trees and the big mature trees, there's probably close to 100 trees per acre in this little area.

Matt: And this area has been maintained with fire recently. And that's why we're here. But much of our forests are packed with 500 or even 1,000 trees per acre. But the natives did these burns for a lot of different reasons.

Don Hankins: So I like to think about it like this, that if we're thinking about things in, in a native cultural perspective, in the landscape, you've got to, you've got to think about well what are you getting out of the landscape, right? As we're standing here and as we walk through the section of forest, I can look at things that are culturally important that you want to have fire on those plants.

Matt : Can we take a walk and you point some of those things out?

Don Hankins: Let's walk and talk. I mean, the first thing that pops out to me, are these native grasses. You know, you've got blue wildrye growing here. The blue wildrye popped in soon as the canopy cover opened up.

Matt: Is that this?

Don Hankins: That's long tubed iris, which is also another cultural plant. But the, but the rye, as soon as you get the sunlight in here, you know, you reduce the canopy closure, the rye starts coming in.

Don Hankins: But this grass needs to have, from what I've seen on other research areas, if we're not burning it to maintain it, it slowly goes away.

Matt: So is that how it seeds?

Don Hankins: It's not seeding through fire, but the fire helps to maintain that place for it within the landscape. So that's why fire is really important. So burning for this grass is really important, right?

Matt: And animals eat this grass?

Don Hankins: Animals eat the grass, the seeds are edible. The stocks of the grass would be used for baskets. It's useful.

Matt: By burning for different things at different times and different places, we're helping with wildfire prevention that goes well beyond just cleaning up the forest fuel load. By setting prescribed burns at appropriate times, we're encouraging more biodiversity in the forest ecosystem by not just letting a few of the species dominate. Disturbance of a system encourages, and often speeds up, biological evolution, which creates greater biodiversity, and more biodiversity equals more resilience, resilience to those kinds of disturbances. Resiliency to fires, to floods, to droughts, but without any disturbances, biodiversity decreases with the most dominant species taking over the landscape because nothing is stopping them and in this age that's going to be the invasive species that have no natural competitors to keep them in check: starthistle, Scotch and French broom and the Spanish wheat varieties that have taken over all the native grasses. And those native grasses were drought and fire resistant. This is why Don is so passionate about bringing back fire to the landscape. He lives in Forest Ranch; forest is in the name of his town and he wants that forest to be healthy, beautiful and a safe place to live.

Matt: We walk on Doe Mill Ridge looking into Butte Creek Canyon until we come to two different prescribed fire sites, which were burned at the previous year. One in the middle of February and the other in April. In this particular instance, they learned that this little gap in time of the year makes a big difference on how the burn affects the forest.

Don Hankins: On this south side of the trail, which we're walking along the firebreak right now, on the south side they burned this in April, right? So this burned in February, this burned in April. And if you look at the difference between the two, you see a lot more scorching of the crowns of these, these ponderosa pines, mostly ponderosa pine. The reason why, is that in February these pines were not actively growing to the extent that they were at this time. So we've got really no evapotranspiration, no moisture being taken up through the root systems. Over here, we've got

photosynthesis in process. These plants are growing, they've got a lot of moisture in the stem flow, and fire is coming up and it's heating and getting trapped up underneath these canopies, and the plants are opening up their cells and that water is being lost so rapidly that they can't replace it. Hence, you see all these brown trees.

Matt: Are they dead? Will any of these come back?

Don Hankins: Those are all dead. They're dead, dead.

Matt: If you didn't quite catch all of that, Don said the burn in the winter, when the trees are almost dormant, a low-intensity fire won't do much damage. But in April, the snow is melting or melted. The sun is getting hot in the day and the tree is pushing water and nutrients from the soil into its system. But when the heat of a fire comes along, it dehydrates that tree system, which is more vulnerable now, leaving it to be burned. So in this burn area we're looking at from April, while the fire did clear out a bunch of the underbrush, it also killed many of the pine trees that they wanted to survive. Those trees will now eventually fall, exposing the ground to sunlight, which will bring in fire-prone weeds and brush in its place. But the good news is that at this elevation there's still oak trees, and the oak trees that die in a fire, often stump sprout baby oak trees. Unlike the pine trees.

Don Hankins: Yeah, they don't stump sprout. Oaks will stump sprout and you see some stumps sprouting of the oaks around here. Like these ones over here, which are also culturally important, right? Like you may not realize, but those sticks from the oaks are important for like rims of big gathering baskets and things like that. Cause it's, it's a hardwood and even some of the baby cradles, you know. It's like you want to burn like this so that you can get that sprout and then up in this area, the cradles for the babies have forks in them. So like they'll go for an oak that's regenerating from a fire and it's got the perfect fork to it.

Matt: That's cool. And so that was the basis of their baby cradles?

Don Hankins: Yeah. Yeah. And it requires fire. Fire from birth.

Matt: The ConCow people used oak sprouts for baskets. The Yurok used hazel. And other native Californians burned for a variety of different reasons depending on their culture and traditions. We're going to take a quick break and during this break I'd like you to contemplate how this burning of land by over 100 different native cultures in California made for a unique landscape. One that was full of diverse plant and animal life,

which increased the land's resistance to fire. Similar to the famed Galápagos Islands, and the distinctiveness of plants and animals there, most of California is a biodiversity hotspot due to geographical isolation. In the past, California was secluded because of the Pacific Ocean to the west, the unformidable mountains and volcanoes to the north and east, and vast deserts to the south and southeast. In fact, the early Spanish explorers of the New World first thought the state was an island. That's why they named it California. After the mythical island in the romantic 16th century Spanish novel, "Exploits of Esplandian." The island in the story is full of riches and great beasts made of gold. It's populated by strong black women, guarded by griffins who will eat any man to set foot there, and is ruled by the great queen Calafia.

Matt: You're listening to California Burning. I'm Matt Fidler. Stay with us.

Matt: Welcome back to California Burning. I'm Matt Fidler. This episode is all about learning how California's forested lands were managed before European settlement, and what we might learn about preventing catastrophic wildfires by understanding prescribed or cultural burns as practiced by the native Californians.

Matt: Native Americans at one point or another, learned how to shape this land and use it quite productively for over 10,000 years. And that's a pretty good track record. It became ingrained into their culture and it stuck because these practices worked, and using fire was just one of those cultural practices. But today's society, in the 21st century, is obviously very different. And if we're going to bring back fire to the landscape, like what Margo Robbins and the Yurok are doing, it's going to have to involve more than just the native peoples of the area. Margo describes to me the first time they brought fire back to the landscape. It was just seven years ago.

Margo Robbins: It was so awesome. It was inspiring and motivating. So we had planned for it, and finally the day came, and Cal Fire showed up and the guys came from the elder camp, and they're all lined up there in their orange suits. But as they was walking down the road to line up there in orange suits so we could talk about why we wanted them to burn, to explain the cultural significance of it. I counted how many there were, because the motivation was find out how many they are and that's how many local people we're going to train, so that someday we can do this on our own.

Matt: With Cal Fire and qualified burn bosses overseeing the operation, the Yurok themselves held the propane torches that physically set the ground on fire.

Margo Robbins: And so the Yurok tribe was the only ones that had the propane canisters and torches. So they're the ones that put the fire down on the ground. And so I walked up into the middle of the unit, and I was just hoping somebody would not say I couldn't be there and they never, and so I stood there as they put the fire down on the ground for the first time and it was so amazing. And as the fire started to take off, you could just hear it like walking through the forest. It was awesome.

Matt: Wow, that's cool.

Margo Robbins: Yeah, I could just hear it walking through the forest.

Matt: And now seven years later with burns happening every year to just a bit more of the land. I can take a tour and see these burn sites to get a better understanding of the benefits that fire brings. Margo drives me up a steep mountain side, to the side of a prescribed burn from a little over a year ago.

Margo Robbins: And this is the bottom of the unit that we burned. Now when you look at it, you can still see that it's pretty brushy. But it has propagated the hazel. We can see some hazel right here, I believe. And we'll go in there and I want to put clippers in your hand and put you to work, but ... (Laughter) That's hazel right there, poking up right there.

Matt: The top ones?

Margo Robbins: Yeah, right here, these short ones right here.

Matt: Are those just one year old?

Margo Robbins: Yeah, there are about a year and a half because we burned here in the fall, not this last fall, but the fall before that. But our burn boss that we had for this particular area, was from out of the area, and they're used to fire suppression. And so they was a little nervous to burn it as hot as we wanted. Thus, there's still quite a bit of brush here. Now the burn that we just did, that we'll look at here in a little bit, we had a local burn boss and he's used to the lay of the land, the steep slopes and has been doing prescribed burning for several years. And so we got a really nice clean burn down there and I'll take you down to see that. And so you can see the difference.

Matt: The hazel tree sprouts new shoots after the land burns. Much like the oak trees in Forest Ranch, and a variety of other species that live in the fire-adapted forests in California. We drive up to some private property

whose owners had let the tribe burn it to produce the hazel that they needed for baskets.

Margo Robbins: And we choose the places we're going to burn based on the cultural species that are on it. And so hazel is always one of the priorities. Another priority is prairie land because our territory used to be about 50 percent prairie, and now it's less than 3 percent of what it once was. We used to have elk all around up here, but because there is no habitat for them, they no longer live here. So we want the elk to be able to come home. And so we are burning prairie's trying to reduce and get rid of the fir encroachment, and turn those prairies back into prairies again.

Matt: She talked about encroachment of fir trees. That's the process of prairies being overgrown by aggressive trees like the Douglas fir. There used to be prairies in meadows sprinkled all throughout California's forests, giving places for game animals to thrive and multiply. But without being maintained, they have largely disappeared, along with the game animals that once lived in them. But today we aren't hunting large game. We're in the middle of a narrow window of time after a prescribed burn where the hazel stick collecting is good.

Margo Robbins: So yeah, it's about a three or four week window, and we're in it right now. So you wanna wait until the hazel is, it's the leaves are out starting to open, the buds on the leaves are starting to open, and that indicates that they will peel because we peel the bark off them and use them that way. But the fire actually changes the DNA of the plant, and so it's stronger and more flexible and it also gets rid of the bugs that will sometimes eat into the plant. So you can make the hazel send up new shoots by cutting it, but it's not as good as if it's burned.

Matt: So we get out and start collecting shoots that Margo can weave into a baby basket for her granddaughter who is expected to be born in a few months.

Matt: Can I help you pick some hazel?

Margo Robbins: Yeah.

Matt: I don't want to be a bum and not do anything. (Laughter)

Margo Robbins: I should have brought my knife.

Matt: I have a little, I have a little pocket knife. It's not very big.

Margo Robbins: Oh, well try it.

Matt: We're standing on the edge of a burn line here. One side was burnt last year, and the other isn't. While we don't see any burn marks on either side, Margo can easily see which side was burnt based on how the hazel looks.

Margo Robbins: So this bush right here is outside of the fire line, so it hasn't been burnt. So you can see all the limbs coming up off of it and it may have hazel nuts this next year or so. I don't know. They don't produce as well as they used to. So that's what they look like when they're not burned.

Matt: We're not going to make, you wouldn't want to make baskets out of this cause it's ...

Margo Robbins: You can't. You can't. So this is what we make baskets with. See this one coming straight up? This is what we make baskets with. And so it's always important to be respectful of what you gather, which reminds me, I have picked two sticks and didn't even thank the sticks for giving themselves. So I'm just going to, I'm going to do that, but not out loud. (Silence)

Matt: Basket making materials are one of the most common products that cultural burning produces. But there are many beneficial species of plants that come from burning, depending on where you live. Here in the midst of a somewhat recent burn, I asked Margo if she can point out some of the plants that have benefited from this fire.

Margo Robbins: As I stand here and look, I see pepperwood right here. Pepperwood is a tree. Some people call it California laurel or bay. It's good for arthritis and rheumatism, and stomach problems, and just lots of things. It has nuts on it too. And like the nuts, you can eat them, and they're really healthy, but also if you pound them up and make them into a paste they'll heal wounds that are infected and wouldn't normally heal, even MRSA.

Matt: Is it fragrant, the leaves?

Margo Robbins: Oh yeah.

Matt: Very strong, yeah, yeah.

Margo Robbins: And here's a bigger one right here. And then this here, down here is soapwort. And so soapwort we'll get rid of the root, it will get rid of poison oak. And then also you can use it to make a little brush to clean baskets or mushrooms.

Matt: Is this fire propagated as well?

Margo Robbins: I do believe it benefits from fire. So there's lots of plants that benefit from fire, and some are actually fire dependent like the hazel.

Matt: This is why learning the local ecosystem is important when using fire. Done right, fire encourages native species and can help get rid of invasive species. If done wrong, you might kill the native species, while invasives like Scotch broom and Spanish wheat thrive. The Spanish wheat is why California's hills are so poetically golden. But they aren't native. And that's why they turn golden brown in the summer. They're dying and they grow over the entire landscape with no space between the plants, which means they spread fire easily. And it's a big part of what carried the Camp Fire between where it started, across the huge Feather River Canyon, and into the Town of Paradise and did this in about an hour. The grasses native to this area, which only about 1 percent remain in California's grasslands, are evergreen, with deep root systems that make them drought resistant. They also grow in bunches. So if one plant catches, it doesn't necessarily spread to the next.

Margo Robbins: Nonnative grass species have taken over, as well as even more than that is starthistle. So starthistle is another one that apparently there's a certain time period in its growth cycle that if you burn it then it'll get rid of them. And I can't remember exactly when that is, but I am going to look it up and put it down someplace where I don't have to remember, I can just look.

Matt: Even when you do burn at the right time, it can take several growing seasons to replace the starthistle with native grasses. Another benefit to fire that helps with the wildfire problem has to do with helping sustain the groundwater supply.

Margo Robbins: There's a direct connection between fire and water. The place that we burned two years ago, so, so, so thick with brush. And I was showing the place too. It was actually the guy from National Geographic came to talk to us about fire. And so we were standing there at the edge of the road, looking up at the unit. It was late summer, end of summer, dry, dry time of season. And I looked down and there was water in the ditch, never see water in the ditch at that time of year. But uphill from us was about 80 acres of where we had burned, and being that all that brush wasn't there sucking up the water, it increased the water table. Also when you burn and it leaves charcoal on the ground and you stop and think of what the water purifiers use: charcoal. Yeah. And so we are creating a landscape of water purifying habitat.

Matt: It's like you burn and you're creating a Brita filter.

Margo Robbins: Yeah yeah, exactly! A giant Brita filter. (Laughter)

Matt: Keeping that charcoal in the ground is basically sequestering carbon, keeping it out of the atmosphere and contributing to the overall health of the soil, creating a healthier forest. But you might say by lighting fires, we're creating smoke, right? Yes. But much less than the larger fires that we're preventing with these low-intensity burns. Plus, wildfires often burn homes and cars, spewing toxic chemicals into the air and water.

Matt: You're listening to California Burning a co-production of North State Public Radio. I'm Matt Fidler. We're going to take another quick break and when we return, we're going to hear from Valentin Lopez, the Chairman of the Amah Mutsun people of Santa Cruz, about the mandate his people have to be the caretakers of the land and everything that resides on it.

Valentin Lopez: This indigenous knowledge was passed on generation after generation for well over 15,000 years, and if you think of that in terms of generations, that's 800, 900 perhaps, 1,000 generations or more.

Matt: Stay with us.

Matt: You're listening to California Burning, looking deeply into California's catastrophic wildfire problem. I'm Matt Fidler. All episodes of California Burning can be found wherever you get your podcasts or at californiaburning.net. On this episode of California Burning, we're talking about how the native Californians managed the land for thousands of years, effecting how that land evolved. First contact with native Californians from Europeans came from the Spanish explorer, Juan Rodríguez Cabrillo in 1542. In his journals he describes in great detail, homes and villages populated by natives throughout every area of California that he explored from San Diego to the Russian River 100 miles north of San Francisco. It was unrecognizable by European farmers and ranchers, but the California natives cultivated the land to provide everything they needed. They did this over thousands of years with traditional and ceremonial practices, and while the practices varied in specifics between the multitudes of indigenous cultures, the big picture had a common theme and no one I've recorded in this program hits upon this theme as eloquently as Valentin Lopez. He's the Chairman of the Amah Mutsun people who are from the Santa Cruz mountains on the central coast of California. He spoke at a gathering I went to following the devastating fire season of late 2018.

Valentin Lopez: My name's Valentin Lopez and I'm the chairman of the Amah Mutsun Tribal Band, and our tribe is comprised of the descendants of the indigenous peoples that were taken to Mission San Juan Bautista, and Mission Santa Cruz. I was elected chair in 2001. At that time the elders said that our tribe, we need to start presenting our tribe to the public and letting them know who we are. I mean we are responsible for the waters, for the air, for the rocks, for the sand, for the gravel, for the oceans, for the birds, for the fish, for the fog, for the shadows. Those are all our responsibilities. Those are our relatives. They had the same father, Creator. They have the same mother, Mother Earth as we have. They are relatives, and we have to take care of our relatives the same way we take care of, you take care of your relatives with love, with kindness, with gentleness, with patience.

Valentin Lopez: That's the way we took care of Mother Earth. We developed clans, and we had a bird clan, and a fish clan, and a bear clan, and a elk clan. And their responsibility was to go out and name everything they could about that namesake. How to take care of it for the four seasons. Here, our climate is so mild that the bears, the grizzly bears, and there were many, many grizzly bears here, they did not hibernate. But it was our responsibility to make sure that they had enough food resources throughout the four seasons. And that was our responsibility. Our people learned, first and foremost, to take care of the land, that we had to take care of the spirituality of the land. We had to keep it spiritual. And so we had prayers in everything; we pray throughout the day that we can fulfill our obligation to take care of Mother Earth.

Valentin Lopez: We created ceremonies, such as a ceremony for balance in the four seasons, so that we wouldn't have too much summer and have drought, or too much winter and have incredible flooding. We wanted a good balance of seasons so that, you know, so that we had a predictable climate and we could take care of it that way. We also created a lot of ceremonies and how to take care of the, for, for the animals. We had ceremonies to call back the salmon. So that when it was time for them to migrate back up the streams up the rivers and stuff like that, you know, we'd first cleaned the rivers and stuff like that, and make sure that the channels were clear and the rocks were ready, you know, for the spawning. And then it was time to call home the salmon.

Valentin Lopez: And whenever we called home the salmon, we sent word that there was no fishing. No one was to fish. You know you see in the animal kingdom how the strong and the most determined are the ones that win and dominate, and they're the ones that breed, and pass on their genes to

the next generation. The salmon are the same. This first salmon to run up that stream, that first weeks' worth of salmon, they're running up the stream. They're the strongest and most determined. So we would not fish them. We'd let them get up so that they could pass on their genes to the next generation. That's one way that we used to take care of the salmon as an example.

Valentin Lopez: We also learned with the migrating geese. We had ceremonies for the migrating geese, and we knew they fly from thousands of miles away. And when they got here, they were tired and exhausted. So we had to make sure that those grasslands and the wetlands were ready for them. And so we also had the responsibility to take care of insects. And so we made sure that there was plenty of insects for the migrating geese. So whenever they came on, they'd have plenty to eat so they can get that strength, that protein, and get that body weight back on so they can continue their journey. These are the things that our ancestors learned regarding how to take care of all animals. This indigenous knowledge was passed on generation after generation for well over 15,000 years. And if you think of that i terms of generations, that's 800, 900, perhaps 1,000 generations or more. Our people did that. We learned that plants, each and every plant that you see, has a responsibility to take care of the fungi, to take care of the insects, to take care of the birds, to take care of the four-legged and to take care of people.

Valentin Lopez: There was no monoculture in those days. I can tell you that. Every plant had to do that. And because of that our plants grew very resistant to flooding, very resistant to drought. A lot of our, our, our grasslands, the root systems can go down 20 feet, and that makes them very resistant to drought, and to fire, and to flooding. Whenever we have a cultural burn, you guys, you know, call them prescribed burns, we call them cultural burns. They're very important for our culture. You know, whenever we have a fire, a controlled burn it serves a lot of purposes. First, when it goes through, just creeps along, it's a very low-intensity fire and it just kind of creeps along the ground. You know, we go through and we trim the branches. Anything where it can get fuel to climb up the trees and stuff like that. We'll clip all that stuff down and then we have the fire and it just kinda crawls through slowly. But when it's going through slowly, it's killing the ticks, and the fleas, and other pests like that in the ground. And then that smoke when it goes up, I said that, you know, whenever we pray we always say, you know, we have fire and smoke well this right here is a way of cleansing and blessing the trees. Because then whenever that smoke goes up into the trees, it's smudging the trees. It's blessing the trees and cleansing the trees. And that smoke goes up and it chokes

out the insects that are in the trees. And those insects fall down. And so now you have a much healthier tree. There's particularly the acorns. And this is a way of bringing spiritual reality back to the trees and back to the landscape.

Valentin Lopez: You know, if we're going to restore these lands, and we believe the restoration of Mother Earth must be led by indigenous people because only indigenous people have the moral authority. Creator gave us that obligation. You know, our evidence must last seven generations. So you know the whole issue of climate change and stuff like that, it must be indigenous led. We totally firmly believe that. And we are working hard to take our position to provide that leadership. And we have people now getting, you know, and it's not going to be indigenous knowledge only; it's going to be blending the sciences with the indigenous knowledge, but it must be indigenous led. But those fires, you know, I mean they're so, they're so important and they just creep along. And in the old days our people, they would light landscapes, they could tell whether much better than we can today.

Valentin Lopez: And they knew of the rains were two days out or three days out, they said, "Well, we want three days of burns and there goes the burns." And then they had certain kinds of burns for the medicine plants, for the food plant. You know, I was with the, we're working with the Klamath and the Yurok Tribe now also on sharing indigenous knowledge. You know, the guy picks up a leaf and he lights it and he goes, "If you burn now you're going to get a four-foot fire." You know, you know. And then I saw him another time get it, and he goes, "You burn now and you have a two-foot fire." You know, they just have that indigenous knowledge. And that's the indigenous knowledge that I said, that we're trying to get knowledge from our neighboring tribes. And that's the kind of knowledge that we're trying to bring back.

Matt: Valentin Lopez talked to us for over an hour, and we're making his entire speech available for you on our website, californiaburning.net. Before we finish, I wanted to return to Margo Robbins again to address this mandate that Valentin talked about.

Margo Robbins: I would venture to guess that it's the same with all indigenous people. That they were put in that specific place at the beginning of time, and that we all have that same agreement with our home place. And our creation stories tell us that before humans were here, there was a pre-human race of spirit beings and they created this world as we know it. And some of them came here first in spirit form, but agreed to take on physical form and stay. And those are the things that we see around us

now. The plants, the trees, the animals, the rocks, the river. And so what we see now are the descendants of the pre-human race of spirit beings. And so when we give thanks to whatever it is that we're gathering, we acknowledge where they came from. And so it's like we're all just connected, and I think that we need to make those bonds that connection stronger on a much deeper level than we even know about and we continue to learn about. And I think that fire is one of the venues that will take us into that deeper understanding.

Matt : When those connections are broken. Your, your people have had to go through this broken connection that was kind of forced upon you. How do you even go about starting to repair these broken connections?

Margo Robbins: You repair the land and you make it healthy, and you're reminded of who it is and who it was meant to be. And you do the same thing with the people. Remind them of who they are, of who we are, and who we're meant to be. And I think that as we connect with the land, it speaks to us, not in words like in English or Spanish or anything like that, but on a level of understanding that it just, you know, something comes into your mind and you know it to be a truth.

Matt: And I want to end this episode with a thought that should humble all of us, no matter what you think about what we know about the natural world. It's that even a person with great intentions and actions like the great naturalist John Muir can get some things wrong.

Margo Robbins: John Muir, and what he did was really important and our world would not be the same today if he hadn't had the foresight to set aside these wilderness places or, or you know. But what he didn't realize, and most people don't realize, is that the natural places that they saw were not that way by accident, or what you might call just naturally. That humans are a part of the ecosystem and native people took care of the land, and the land looked like that because of the interaction between humans and nature. There was no separation. When people such as yourself ask, "Can I come up and talk to you about what you guys are doing with fire?" If at all possible, we always say yes! Not to bring, you know, whatever to ourselves because we're just doing a small part, but the important part is to spread the word; to spread the word that we're a part of the ecosystem, that fire is part of the ecosystem and we're the ones who's meant to put fire on the land. Nature does it in some areas where there's lightning storms, but that's a small piece of it and we're the other piece.

Matt: What Margo said there at the end, "We're the other piece." I think that's a really important concept for us to digest. If we want to get a grasp on this wildfire problem. We need to understand that our decisions have consequences and that the answer isn't to do nothing. It's to actively do something. We are an active part of our own ecosystem. We can work against it, like trying to suppress all fires and that may work for a little while, but eventually it gets us the results that we're seeing today. But we do have another option we can learn from the Native American's playbook, and work with the ecosystem, and give the forests the fire they need. But instead do it on terms that work for us, humans, and maybe we can get results that also work for us.

Matt: Thank you for your time and insight Margo Robbins, president of the Fire Management Council for the Yurok. And a big thank you to Valentin Lopez, chairman of the Amah Mutsun Tribal Band, and fire geographer Don Hankins, and the amazing host at the Tish Tang Campground on the Hoopa Reservation where I stayed. On the next episode of California Burning, we're going to talk specifics of fire on the land, how it works, how you fight it and how you can predict its behavior.

Zeke Lunder: One of the reasons that this is black and see, is our position. See the winds howling on us right now?

Matt: Yeah, you can tell. I would not want to be here during a fire.

Zeke Lunder: Right.

Matt: California Burning is a co-production of North State Public Radio. Made possible with generous funding from Sierra Nevada Brewing Company. Original music is by Stephen LaRosa of Wonder Boy Audio. Thanks to our team: Sarah Bohannon, Gregg McVicar and Jill Fincher. I'm the creator and host Matt Fidler. All episodes are available for free at californiaburning.net. The song you're listening to right now is "California Indians" by Arigon Starr.