

**Acorns as a Driver of Food System Resilience in Native  
American Communities in Sonoma County, CA**

Written by Lily Hue

**Occidental College**

**UEP Senior Comprehensive Project**

**Spring 2022**

# Table of Contents

<b>Introduction.....</b>	<b>4</b>
<b>Background.....</b>	<b>5</b>
Acorns	
Policy Context	
<b>Methods.....</b>	<b>18</b>
<b>Literature Review.....</b>	<b>20</b>
Food Insecurity and Food Sovereignty in Native American Communities in the United States...	20
Food System Resilience	
Wildtending: A Reciprocal Relationship with the Land	
Gaps in the Literature	
<b>Findings.....</b>	<b>29</b>
<b>Policy Recommendations.....</b>	<b>35</b>
Increase Land and Gathering Access for N	
<b>Conclusion.....</b>	<b>38</b>
<b>Bibliography.....</b>	<b>40</b>



## Background

### *Sonoma County Context*

Sonoma County is a relatively small, 1,768 square mile county 82 miles north of San Francisco.<sup>4</sup> Sonoma County is geographically unique in that it boasts forests, valleys, mountaintops, riverbeds, and ocean cliffs creating many microclimates that support a biodiverse ecosystem.<sup>5</sup> Sonoma County alone supports the growth of 10 different species of oak trees including Black Oak, Blue Oak, Tanoaks, and Coastal Live Oaks which grow in and amongst each other, leading to most of the oak stands in the area 6

Sonoma County is one of the most developed counties in the region, 20% of oak woodlands have already been developed and 10% more are at risk.<sup>7</sup> Sonoma County Regional Parks, the Bureau of Land Management, and the U.S. Forest Service are the official organizations currently responsible for managing, maintaining, and protecting most of the oak stands found on public land in Sonoma County.<sup>8</sup> There are also many oak stands found on private land owned by the wine, cattle, and timber industries.<sup>9</sup>

---

<sup>4</sup> Google Maps.

Sonoma County City Data. Sonoma County, California (CA). [https://www.city-data.com/county/Sonoma\\_County-CA.html](https://www.city-data.com/county/Sonoma_County-CA.html) Accessed December 5th, 2021

<sup>5</sup> Sonoma County Vintners. Geography & Climate. <https://sonomawine.com/climate-geography/>. Accessed December 5th, 2021  
<sup>6</sup> Regional Parks. August 2016.

<https://parks.sonomacounty.ca.gov/Learn/Blog/Articles/The-Wild-Diversity-of-Sonoma-County-Oaks/> Accessed December 5th, 2021

<sup>7</sup> Firman, Jeffrey, and Tom Gaman. Rep. *Oaks 2040 The Status and Future of Oaks in California*. California Oaks Foundation, n.d.

<sup>8</sup>

<https://parks.sonomacounty.ca.gov/Learn/Blog/Articles/The-Wild-Diversity-of-Sonoma-County-Oaks/> Accessed December 5th, 2021

<sup>9</sup> Rep. *Ma P idin: Protecting Our Ground Traditional Gathering & Harvesting Policies: Analysis and Action*. Santa Rosa, CA, n.d.



sovereign nations, today they are related inter-tribally through marriage, social connections, language and cultural traditions.

Sonoma County is a relatively affluent county with a median income of \$81,018 which is significantly higher than the national.<sup>14</sup> That being said, in 2018 about 1/3 of the total county population could not afford to purchase enough food for their families.<sup>15</sup> In a recent survey of Sonoma County Native people, conducted by the California Indian Museum and Cultural Center (CIMCC), that 32% of respondents did not have access to enough food.<sup>16</sup> The respondents who

foods they want

<sup>17</sup> The

fact that almost a third of the people surveyed indicated some level of food insecurity shows that it is, in fact, a significant issue among the Native community in Sonoma County.

### *Wildtending*

The process used by tribes to cultivate oaks is known as wild-tending.<sup>18</sup> It centers around the idea that in order to be in right relationship with the land one must be giving as much as taking. In short, the heart of this relationship is an attitude of reciprocity. Christina Fowler put it on the ecosystem to be successful players in it<sup>19</sup>. In practice, this looks like refraining from

---

<sup>14</sup> U.S Census Bureau. [www.census.gov/quickfacts/sonomacountycalifornia](http://www.census.gov/quickfacts/sonomacountycalifornia). Generated by Lily Hue

<sup>15</sup> County of Sonoma. Annual Sonoma County Hunger Index Reports that 1/3 of Residents Went Hungry in 2018. Sonoma County, CA. 2020. <https://libguides.wvu.edu/c.php?g=418946&p=2855160> Accessed December 5th, 2021

<sup>16</sup> Rep. *Ma P idin: Protecting Our Ground Traditional Gathering & Harvesting Policies: Analysis and Action*. Santa Rosa, CA, n.d.

<sup>17</sup> Rep. *Ma P idin: Protecting Our Ground Traditional Gathering & Harvesting Policies: Analysis and Action*. Santa Rosa, CA, n.d.

<sup>18</sup> Sonnenblume, Kollibre00912 0 i2K3d1#BT/F.(br0912 0 he)7( F)-6(a)7(i)-2(l)-2(2 0 66q0.000018246 n 792 BT/F3 8 Tf6n1 0 0 1 72.025 113.28 Tm0 G[16])TJETQq0

harvesting from certain areas during times of shortage, controlled burns, and making sure that the plants are harvested when they are abundantly available in a way that replenishes rather than depletes them.<sup>20</sup>





.<sup>33</sup> They are also a good source of vitamins and minerals, being particularly high in vitamins A and C.<sup>34</sup>

stimulated new growth as well as dislodged dead or sickly bits of bark and branch, promoting the health of the tree while simultaneously providing ample harvest.<sup>41</sup>

One challenge is that acorns, once harvested, require a time and labor-intensive process to turn them into edible food.<sup>42</sup> In their raw state, acorns are high in tannic acid which makes them bitter and unpalatable to humans without going through a substantial leaching process.<sup>43</sup> Traditionally, mortar and pestles, and winnowing baskets were used to complete the processing but nowadays newer technologies such as blenders and food processors are utilized to make the process a little less labor intensive. The process has three main steps: first acorns are dried and then either shelled or stored for future use, second the nuts are pounded into flour, and lastly, flushed with hot and cold water to remove the tannic acid.<sup>44</sup> Although it is a labor-intensive process, the continued use through generations shows that the benefits made it well worth the trouble.

scalability of acorn production since, in order to be consistent with the tenants of reciprocity, acorns will only be harvested when it is deemed appropriate.<sup>46</sup> This would interrupt the entire supply chain system as it is designed now. Furthermore, distributing acorns through a market economy is not very viable since some Native people believe that traditional foods should not be commodified and sold in exchange for money at all.<sup>47</sup> Although there are significant barriers that Native people face with regards to acorn cultivation, the benefits of this nut culturally, nutritionally, specifically from a resilience perspective are significant and worth attention.

### *Policy Context*

There has been a myriad of policies throughout the history of California that have significantly shaped how California Indians are able to interact with their ancestral lands. Some of these policies affect the relationship in broad strokes such as land access and some affect the finer details such as specific gathering policies. Overall, most of the policies have had detrimental effects on tribes but in recent years there has been an increased willingness to include Native perspectives in decision making, especially as more people recognize the benefits of tribal stewardship.<sup>48</sup>

There have been several policies over the last three centuries that have systematically limited tribal land access and rights. California tribes have very little federally recognized land because between 1851 and 1852 the 18 treaties that were negotiated between tribes and the U.S. Indian Commissioner were never ratified, meaning that the land allotted to the tribes was never

---

<sup>46</sup> Rep. *Ma P idin: Protecting Our Ground Traditional Gathering & Harvesting Policies: Analysis and Action*. Santa Rosa, CA, n.d.

officially recognized as theirs.<sup>49</sup> Furthermore, fishing, hunting, and gathering rights were not

50

Over the years there has been some land acquisition such as the Rancheria system in which the state of California acquired land to create 82 small reservations. This allotment of land was far less than what tribes were initially promised in their treaties. Although this program provided land for previously landless tribes the fragmented nature of these parcels created some further issues. The distance between reservations split up tribal communities and had negative effects on tribes' abilities to tend the land.<sup>51</sup> The lack of substantial land has necessitated a significant reliance on public and privately owned land throughout California.<sup>52</sup>

There are several other significant policies that further affected tribes access and ability to tend to the land. In 1841, Joseph Bidwell authored Senate Bill 54 that was meant to preserve , fishing, gathering seeds and acorns for the maintenance .<sup>53</sup> Unfortunately, the right to tend oaks and gather acorns never

the Federal Forestry Agencies launched an aggressive fire prevention policy that banned controlled burns, severely limiting the ability of the Native people to tend to the Oaks, although .<sup>54</sup> Unable to properly tend to the Oaks, the well-being of both the humans and Oaks have suffered. The people lost crucial access to a major

---

<sup>49</sup> Rep. Resend. 5/12/06 2W\*BTfhsEEW\*BT1 0 0 1 9ln3

food source and the health of the Oaks also suffered greatly with an upsurge in pests, competing plants, and sudden oak death.<sup>55</sup>

In more recent years there has been more that aims to support tribes in tending and gathering as well as include Native voices in decision making. The most significant of these being CA Senate Bill 18 (2004) and CA Senate Bill 52 (2013-2014).<sup>56</sup> CA SB18, in essence, mandates that cities and counties consult with tribes before amending their general plans and allows recognized tribes in California to hold conservation easements.<sup>57</sup> CA SB54 which is a requires entities developing projects that could disturb culturally and archaeologically significant sites to notify and consult with tribes and to develop appropriate corrective measures to mitigate potential

<sup>58</sup> These bills are important steps towards recognizing the importance of tribal input and collaboration although some view the collaboration as more of a formality than a meaningful opportunity for tribes to make a true impact on development strategy.<sup>59</sup>

There is some local policy work being done in Sonoma County to address general issues of food insecurity in the county. Sonoma County is currently working on a Food Action Plan that incorporates the findings of the Community Food Assessment and Sonoma County Food Forum Report into a comprehensive community vision and goal for the local food system.<sup>60</sup>

---

<sup>55</sup>

<sup>56</sup> Rep. *Restoring Tribal Stewardship on the North Coast: Tribal-Vineyard Partnerships in Sonoma, Mendocino, and Lake Counties*. Santa Rosa, CA, n.d.

<sup>57</sup> Rep. *Restoring Tribal Stewardship on the North Coast: Tribal-Vineyard Partnerships in Sonoma, Mendocino, and Lake Counties*. Santa Rosa,

CA, n.d.

<sup>58</sup>

Among the pillars of the plan, goals 5 and 6 are especially relevant to this research. Goal 5 states

<sup>61</sup> The plan to achieve this goal includes steps to decreasing unhealthy foods and assessing the health outcomes of all future projects that involve food.<sup>62</sup> The steps of this plan do not discuss specifics about making culturally appropriate foods more equitably accessible. The

applicants for discretionary development permits identify trees proposed for removal and trees

.<sup>68</sup> This ordinance provides protection to 7 different species of oak trees.<sup>69</sup> The Heritage and Landmark Tree Ordinance allows for trees meeting special requirements of size, shape, etc. to be nominated for special protection.<sup>70</sup> The Valley Oak Habitat Combining Zone is designed to protect the valley oak through rules that prohibit developers from cutting down Valley Oak that are above a certain size without a permit.<sup>71</sup> Finally, The CEQA requirements, although not technically a policy, requires avoidance, minimization and mitigation of impacts to oak woodlands in certain cases.<sup>72</sup> Although none of the policies relate specifically to Native American use of oak woodlands, it is clear that protecting oak trees is part of the discussion in local Sonoma County Policy, which is a start.

There are also some agencies and organizations that have been working with tribes on issues of land access and gathering rights. Organizations such as the Natural Resource

District (SCETPOSD7(on, )JTJETQq0.00000912 0 612 792 reW\*nBT/F3 12 Tf1 0 0 1 181.08 292.6

---

<sup>67</sup> Doug Bush. (nd m)-13(-2)te7( )}2ree Ordince Update. 7( )}2 (nd m)-13(-2)t. Tree-Ordince/ -

<sup>68</sup> Doug Bush. (nd m)-13(-2)te7( )}2ree Ordince Update. 7( )}2 (nd m)-13(-2)t. Tree-Ordince/ -

<sup>69</sup> Doug Bush. (nd m)-13(-2)te7( )}2ree Ordince Update. 7( )}2 (nd m)-13(-2)t. Tree-Ordince/ -

<sup>70</sup> Doug Bush. (nd m)-13(-2)te7( )}2ree Ordince Update. 7( )}2 (nd m)-13(-2)t. Tree-Ordince/ -

<sup>71</sup> Doug Bush. (nd m)-13(-2)te7( )}2ree Ordince Update. 7( )}2 (nd m)-13(-2)t. Tree-Ordince/ -

<sup>72</sup> Doug Bush. (nd m)-13(-2)te7( )}2ree Ordince Update. 7( )}2 (nd m)-13(-2)t. Tree-Ordince/ -

Accessed Dece3(-2)ber

consulting with tribes on projects that may impact Native communities.<sup>73</sup> An example of this is Graton Rancheria working in collaboration with Sonoma County Regional Parks to co-plan a park that would focus on exploring indigenous culture and food restoration.<sup>74</sup> Many of these informal collaborations are beneficial but somewhat tenuous because these relationships are at



a lengthy and complicated process that requires tribal identification and fees for eligibility which creates problems for many applicants.<sup>80</sup>

---

<sup>80</sup> Rep. *Restoring Tribal Stewardship on the North Coast: Tribal-Vineyard Partnerships in Sonoma, Mendocino, and Lake Counties*. Santa Rosa, CA, n.d.



**Table 2: Interviewees**

<i>(1) Food System Experts</i>	<i>(2) Government Workers</i>	<i>(3) Tribal Advocates</i>	<i>(4) Native Community Members</i>
Author & Professor of Food System Resilience Theory	Director of Sonoma County Regional Parks	Consulting fire ecologist at Fire Forward	Naturalist from Wappo tribe
Foraging Expert and Chef	Sonoma County Project Planner	Intertribal Agriculture Council Technical Assistant Specialist	
	USDA Tribal Relations Specialist	Founder of the Oak Granary	
	Ecologist at U.S Forest Service		

## **Literature Review**

In the past few years there has been new research and activism that points to the importance of acorns as sustenance as well as the overall cultural significance of Native

<sup>81</sup> The benefits of incorporating more acorn consumption into the food system could potentially be seen across many indicators of resilience including increased system robustness, redundancies, flexibility, and resourcefulness. This literature review examines the current research on the topics of food system resilience, acorn cultivation, the intricate relationship between Oak trees and Native communities, and the reasons, such as high levels of food insecurity, that this shift is so crucial.

*Food Insecurity and Food Sovereignty in Native Communities in the United States*

subsidized foods which are high in carbohydrates and sug

diseases because there are specific nutrients in traditional Native foods that protect against them.<sup>92</sup>

Jernigan writes that, in practice, this would not necessarily look like growing all food within the community but rather having the ability to decide what is allowed into a community and what is not.<sup>93</sup> The process itself of restoring Native food systems is viewed by some as a form of healing. In a report on traditional gathering and harvesting practices members of the

restoration

<sup>94</sup> As a

large part of Native American food sovereignty focuses on reviving relationships with traditional foods, acorns fit seamlessly into this framework.

### *Food System Resilience*

Food system resilience is a burgeoning framework that encompasses a set of ideal criteria within a food system. In their piece *Food System Resilience: Defining the*

contend with shocks and stressors from influences such as geopolitical, economic, and climate change disruptions.<sup>95</sup> Resilience is a complementary concept to sustainability

the

---

<sup>92</sup> Rep. *Restoring Tribal Stewardship on the North Coast: Tribal-Vineyard Partnerships in Sonoma, Mendocino, and Lake Counties*. Santa Rosa, CA, n.d.

<sup>93</sup> Valarie Blue Bird et al. August 2021.

<sup>94</sup> Rep. *Cuh:Uyaw: Increasing Tribal Family Access to Healthy and Traditional Food Resources Food Sovereignty and Security Assessment Findings*. Santa Rosa, CA, n.d.

<sup>95</sup> Tendall, D. M., et al. (2015). Food system resilience: defining the concept. *Global Food Security*, 1st Edition. ScienceDirect Journal.

resilience thinking is a way to achieve it.<sup>96</sup> By using sustainability to provide context for resilience thinking we are better able to understand the importance of resilience as a means to achieve sustainability.<sup>97</sup>

The literature shows that incorporating resilience thinking, particularly into food systems that have been historically downtrodden, similar to the Indigenous Food System in Northern California, is specifically important because they tend to have low indicators of resilience and are forced to contend with increased disturbances and stressors.<sup>98</sup> Tendall

levels of production.<sup>102</sup> This shows that acorns are also a robust source of nutrition, therefore





over a lifetime.<sup>113</sup> Research by Kollibri Sonnenblume shows that this form of horticulture, while ideal in many ways, comes with some challenges of its own. One of the main roadblocks is the vast amount of time and energy required to develop and maintain this relationship.<sup>114</sup> Sonnenblume also raises an additional challenge which is that knowledge that has been traditionally passed down through generations is disappearing more with each subsequent generation.<sup>115</sup>

The relationship with the wild tenders is crucial for the health of the trees. Some of the main tools employed by Native people to tend to Oaks include fire, selective weeding, and shaking of the trees during harvest.<sup>116</sup> If left to their own patterns, Oak seedlings will grow in thick stands that make it challenging for them to grow strong and healthy.<sup>117</sup> They are also relatively easily outcompeted by grasses and shade-tolerant, fire-susceptible conifers.<sup>118</sup> The role of human-made fires and weeding practices creates a growth pattern that allows the little Oaks to grow bigger and healthier thus yielding larger harvests that support the humans who tend to them, further perpetuating the symbiotic relationship between human and tree.<sup>119</sup> Another important component of Oak tending is the process of harvesting which includes shaking the acorns down from the tree with a stick. While yielding acorns, the shaking method serves the dual purpose of removing diseased bark as well as pests such as weevils and worms.<sup>120</sup>

---

<sup>113</sup> Kimmerer, Robin Wall. 2015. Braiding Sweetgrass. Minneapolis, MN: Milkweed Editions.

<sup>114</sup> Sonnenblume, Kollibri Terre. 2018 The Failures of Farming and the Necessity of Wildtending. Portland, Oregon.

<sup>115</sup> Sonnenblume, Kollibri Terre. 2018 The Failures of Farming and the Necessity of Wildtending. Portland, Oregon.

<sup>116</sup>

In California today, Oak trees are threatened by habitat degradation, competition, and devastating diseases such as sudden Oak Death.<sup>121</sup> Studies show that Oak population density is decreasing and are projected to continue decreasing if nothing is done to protect them.<sup>122</sup> Fire suppression laws have banned the practice of controlled burns in much of California, making it illegal to tend to the land in the traditional ways.<sup>123</sup> Furthermore, displacement of Native communities from their ancestral land has made it even more difficult to enact the methods of wildtending that had been practiced for generations.<sup>124</sup> Restoration of Oaks would promote resilience both in the ecosystem and the food system by working to repair a relationship that has been degraded by years of displacement, colonization, and harmful policy.<sup>125</sup>

### *Gaps in the Literature*

is to address this gap by examining how acorns and oak trees can contribute to food security in Native communities in Northern California.

## **Findings**

The main finding that came out of this process of data collection was that there is a possibility that acorns could significantly contribute to food system resilience in Native

Although fire is starting to become a more ubiquitous tool for the Forest Service which shows gradual acceptance of fire there is an important distinction to be made between controlled burning and cultural burning. The U.S. Forest Service and CalFire use controlled burns as a management tool to clear dead brush, keep the growth of shade tolerant conifers under control, and reduce the fuel load if a fire does occur. They perform these burns as a forest management tactic to reduce the severity of wildfires, in accordance with their data and science. Cultural burns, on the other hand, have been employed by tribes for thousands of years to promote diverse habitats and the health of the overall ecosystem through the process of reciprocity with the land. The newfound openness to fire has not necessarily included an acceptance of the cultural burns necessary to tend oaks. One interviewee from the Intertribal Agriculture council highlighted this

offers funds for prescribed burning but not particularly for cultural

governments are interested in supporting tribes with their cultural burning but then nationally there

Furthermore, there are several policy obstacles in place that make it difficult for Native people to carry out cultural burns. For the most part, Native people cannot conduct cultural burns without a federally recognized burn boss present at the burn sight. Burn boss qualifications, as described by a representative of Fire Forward, are very difficult to obtain, requiring an intensive process over the course of several years before certification. There is beginning to be a shift towards allowing tribes to conduct cultural burns, under certain circumstances, without a burn boss present if they abide by the guidelines set by the Forest Service and CalFire. Even this was seen as a huge step.

Forest Service still puts many restrictions on these cultural burns and these shifts in policy seem to be viewed as permission given rather than brought about through egalitarian partnership.

It was agreed upon across the board that there has been a significant shift and that more people are turning to Native voices to learn about the practice of using fire as a tool. There is still work to be done surrounding supporting tribes in their traditional practices of cultural burning. The policies surrounding fire practices are entirely dictated by the forest service and handed down to tribes instead of created collaboratively and in cooperation with one another. Hopefully

also presents a conflict with regards to private land since some families who have been tending specific oak stands for generations no longer have access to these lands due to new private

stil

may technically be available it is still not easily accessible or feasible for many Native people in their daily lives.

The second issue within this theme is access to information. In some cases, tribes do have agreements to be able to forage and gather in forests. However, what sometimes happens is that the Forest Service will come in and spray herbicides and pesticides on the plants even though the Native people will be gathering plants for things such as medicines and ceremonies and will not know that there are toxic chemicals on the materials they are gathering. This example highlights the need for more inclusion in decision making and access to information so that people are not unknowingly being harmed in the process of tending and gathering.

### *Oak Tending Exists in an Antithetical Paradigm to Western Farming*

Wildtending and traditional western farming practices exist on completely different paradigms. As several interviewees pointed out, the main goal of the hegemonic food system is to produce food at a scale at which farming will be profitable. That is not the main goal of wildtending. The hegemonic form of farming, as discussed previously in this paper, often deeply exploits the land, depleting nutrients from the soil and generally degrading the land. Wildtending on the other hand takes the entire ecosystem into account to promote the health and well-being of



the land, animals, and plants alike. The Native people interviewed in this process stressed how

impact of acorns as a food source is further complicated by the fact that each tribe has different practices, customs and relationships with oaks meaning that bolstering of acorns into the diet would have a different impact on each tribe.

### *Lack of True Collaboration Between Local Government and Tribes*

Throughout the process of data collection, it became evident that in order to move issues like fire and land access along, in a way that actually benefits the tribes, it is important that true collaboration takes place. Speaking with people from several different government agencies there were varied responses as to the current extent of what the current collaboration looks like. In many cases people were vaguely aware of some cooperation between local governments and tribal federations such as Graton Rancheria but could not speak to the exact structure of the collaboration or exactly what they were working on. Furthermore, a lot of the language used gave the impression that an attitude of permission granting and gatekeeping persists which creates a hierarchical structure that denigrates the possibility of true collaboration.

Organizations such as Together Bay Area, Intertribal Agriculture Council, as well as

## **Policy Recommendations**

The data collected from the interviews that were conducted for this project shows that acorns are not yet feasible as a staple food source because there are still too many barriers in place that prevent Native people from being able to tend and gather them with ease. The following policy recommendations include *Increase Land and Gathering Access for Native People, Shift Fire Policy to Make Space Cultural Burns, and Meaningful Collaboration Between Government and Tribes.*

### *Increase Land and Gathering Access for Native People*

As identified in the interviews, since there is little officially recognized tribal land, tribes must rely on public land or relationships with private landowners to access the oaks in order to tend to them and gather acorns. Removing barriers with regards to land access as well as specific access to oaks once land access is achieved will be a crucial component of improving tribal

urn plans should be made readily available since Forest Service burn plans sometimes have significant effects on the ecosystem, potentially interfering with gathering and tending cycles. Access to information regarding plans would make it simpler for Native people to tend and gather without having to worry about potential hazards such as pesticides.

This specific land access policy should include ubiquitous access for tribal people to public and private land that has pre-existing oak stands. Access includes the ability to come and go freely, to tend, which includes clearing of other materials such as grasses, and other plants that may outcompete young oaks, as well as fire, under certain conditions and to gather freely. This type of blanket, all-encompassing approach would make it simp.35 681.22 Tm0dq.si

while still working in tandem with the Forest Service and Calfire to ensure that all standards of safety are met.

### *Increase Meaningful Collaboration Between Government and Tribes*

In order to ensure that oak tending goes in a direction that truly benefits the food security and goals of Native people in Sonoma County, it is crucial that Native voices are a part of making those decisions. Informing tribes of plans or perfunctory consultations are not enough. There needs to be true collaboration in which tribal voices get an equal amount of say in decision making with regards to their ability to tend their ancestral land.

There are many possible forms that this collaboration could take. It could be creating positions within existing structures that must be filled by Native people. It could also look like the creation of a council with representatives from different tribes from Sonoma County who, as a collective, collaborate with entities such as Cal Fire, the Forest Service, and Sonoma County Parks and Recreation to make decisions with regards to land access, fire, and gathering. There are some existing entities, such as the Intertribal Agriculture Council, that should be given more support and more decision-

## Conclusion

This paper explores the current state of acorn use by Indigenous communities in Sonoma County and the potential for reimplementing acorns as a staple food source. In Sonoma County, Indigenous communities face high rates of food insecurity, chronic diseases related to nutrition. Research suggests that eating a traditional diet has a significant effect on preventing these diseases as well as many other positive impacts on culture and spirituality in the community. As the interviews and literature review uncovered, there is great potential for acorns to serve as a nutritious staple food source that builds resilience within Native communities, but there are still too many barriers in place to be able to quantify or confidently say exactly what that would look like. Because the process of cultivating acorns and tending oaks takes so long and holds so much more cultural and spiritual significance than a typical agricultural endeavor, implementing acorns as a food source requires a deeply nuanced and multifaceted policy approach that should be created with significant input from tribal members.

There is great potential for further research and study in this field as outside attitudes towards fire and indigenous knowledge continue to shift. Further research into the topics of cultural burning, indigenous foodways, and traditional foods as a contributor to food system resilience could be beneficial to further fleshing out the role of traditional foods, specifically acorns, in Indigenous communities. The research also shed light on the ways in which Indigenous food systems exist in a different paradigm than typical western food systems, meaning that the ultimate goals of these respective systems are often in direct conflict with one another. Further research into ways in which the two systems could work in harmony, or become one, could be very beneficial in furthering this conversation.



## Bibliography

1. Bush, Doug. Sonoma County Tree Ordinance Update. County of Sonoma.  
<https://sonomacounty.ca.gov/PRMD/Regulations/Comprehensive-Tree-Ordinance/>  
Accessed December 5th, 2021
2. County of Sonoma. Annual Sonoma County Hunger Index Reports that 1/3 of Residents Went Hungry in 2018. Sonoma County, CA. 2020.
3. D.M. Tendall, J. Joerin, B. Kopainsky, P. Edwards, A. Shreck, Q.B. Le, P. Kruetli, M. Grant, J. Six. Food system resilience: Defining the concept, *Global Food Security*, Volume 6, 2015, Pages 17-23, ISSN 2211-9124,
4. Firman, Jeffrey, and Tom Gaman. Rep. *Oaks 2040 The Status and Future of Oaks in California*. California Oaks Foundation, n.d.
5.  
Basin of Western North America  
University of Oklahoma Press. 2000.
6. Google Maps.
- 7.
8. Kimmerer, Robin Wall. 2015. *Braiding Sweetgrass*. Minneapolis, MN: Milkweed Editions.
9.  
-252. Albany, CA: U.S. Department of Agriculture,  
Forest Service, Pacific Southwest Research Station. 110 p. 2016.
- 10.





