



FIVE CORE AREAS TO SUPPORT AND PROMOTE RECOVERY TO NATURAL DISASTERS: INSIGHTS FROM TRIBAL COMMUNITIES IN CALIFORNIA'S CLEAR LAKE REGION

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EXECUTIVE SUMMARY

The objective of this report is to provide an overview of practices to support natural disaster recovery in Lake County, with a focus on the experience of Tribal communities. This report can be used to identify current opportunities and challenges to disaster recovery in the Lake County region for multiple stakeholder communities. We used a three-prong research strategy to identify 5 core recovery areas of focus for tribal communities in the Clear Lake Region:

1. Content analysis of available academic literature on the topic
2. Stakeholder interviews with tribal government representatives, members of the Blue Ribbon Committee and other agencies that serve Tribal nations in the Clear Lake Region
3. Quantitative and qualitative data analysis of secondary data on natural disasters in the Clear Lake Region and materials and information gathered through fieldwork

AUTHORS AND CONTRIBUTORS

Under the program established for the Blue-Ribbon Committee for the Rehabilitation of Clear Lake (AB 707), researchers from UC Davis Center for Regional Change (CRC) and UC Davis Tahoe Environmental Research Center (TERC) propose to conduct applied research to guide the Committee in improving the environmental quality and economic outcomes for the communities surrounding Clear Lake in Lake County, California. This is a multi-year project (2018-2020) funded by the California Department of Fish & Wildlife.

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FIVE CORE RECOVERY AREAS

Our research identified 5 core areas to support recovery for Tribal communities in the Clear Lake Region and a series of critical activities to support recovery within these areas. In addition, a set of 7 suggested activities to support disaster recovery for Tribal communities in the Lake County Region is also highlighted.

- 1. Economic Recovery** efforts should be focused on returning economic activities to a healthy state while promoting new business development and economic sustainability. Critical activities in this area should focus on identifying and removing the inhibitors to fostering economic stabilization after natural disasters, supporting communication and robust problem-solving among economic recovery stakeholders.
- 2. Health and Social Service** efforts can restore and improve health and social service capabilities and networks to promote community and individual health and well-being. Critical activities in this area should focus on identifying populations that are likely to be affected by natural disasters, streamlining services across key service providers, and continually monitoring and assessing community health and social service needs.
- 3. Housing** efforts should focus on supporting and contributing to building a sustainable, resilient, and affordable housing stock for the region. Critical activities in this area include assessing the interim housing needs of communities and assessing and identifying options for permanent housing during pre and post disasters for Tribal members.
- 4. Infrastructure Systems** efforts should focus on stabilizing critical infrastructure, minimizing health and safety threats, and efficiently restoring and revitalizing systems and services. Here pre-disaster recovery planning that includes Tribal governments at the regional level can help leverage resources available that can support capacity building for Tribal communities.
- 5. Environmental Stewardship** efforts should focus on protecting natural and cultural resources by undertaking appropriate planning, mitigation, and responses both pre and post natural disasters. Critical activities in this area include supporting the discovery and implementation of options to support the protection of environmental resources.



ABOUT THIS REPORT

This report provides an overview of practices related to five key areas to support natural disaster recovery in Lake County, with a focus on the experience of Tribal governments and communities. The report was derived from research commissioned as part of the Blue Ribbon Commission for the Rehabilitation of Clear Lake funded by the State of California. The findings contained herein were gathered as part of the Tribal Engagement activities undertaken in relation to the Center for Regional Change's work to inform the committee decision making processes.

The report is focused on the experience of Tribal communities in Clear Lake related to planning and mitigating risks from the increasing frequency and severity of natural disasters (e.g., wildfire, flooding) that have occurred in the Clear Lake region. The Clear Lake region consists of Lake County Places as defined in the report, California's Clear Lake Region: A Socioeconomic Profile (Brazil, Natekal, & Becerra, 2021). The overarching goals of this report are three-fold:

1. To offer to a broad audience an understanding of challenges to disaster recovery identified in the Clear Lake Region;
2. To highlight 5 Recovery Core Areas for Tribal nations and other stakeholders in the Clear Lake Region;
3. To provide a list of resources available from the University of California to address disasters through a supplemental online compendium which accompanies this report.





HOW TO USE THIS REPORT

The data presented here offer insight into disaster recovery in Clear Lake. While the report is focused on the experience of Tribal nations, findings are relevant to all communities in the Clear Lake region and provide insight into possible practices that can support community readiness, resiliency, and equitable recovery to natural disasters. The findings and practices outlined herein were identified through a comprehensive and iterative research approach that included in-depth qualitative and quantitative data analysis.

The findings do not present all possible practices that could be used, nor a complete listing of all those that are currently used to support disaster preparedness and recovery efforts for Tribal communities in the Clear Lake Region. Instead, they focus on five core areas that research has shown are particularly effective. As with any effort of this nature, the recommendations that emerge should be approached with the understanding that consistent and continuous monitoring of a community's or region's preparedness and response to a natural disaster is necessary in order to derive a fully comprehensive response to disaster preparedness, management, and recovery. This report is meant to help support efforts to promote a process that advances broad scale and inclusive natural disaster preparedness and recovery activities that can achieve equitable and resilient responses when natural disasters occur in the Clear Lake Region.

The analysis provided integrates publicly available data for Lake County, as well as data derived from original research undertaken by the Center for Regional Change research team.

We first provide an overall understanding and review of natural disasters which have impacted Lake County over the last 10 years. We then use this profile as a grounding point for contextualizing our identification of five core areas for recovery relevant to Tribal communities and stakeholders: Economic Recovery; Health and Social Services, Housing, Infrastructure Systems, and Environmental Stewardship.

For each focal area, several elements are considered and recommendations for practices provided. Identifying these strategies helps ensure that all communities can better support recovery efforts to address the unique needs, capabilities, demographics, and governing frameworks that characterize the Clear Lake Region. The report encourages a recovery process that engages traditional and nontraditional community partners, grows a strong intergovernmental infrastructure, and provides a strategic approach to assist with leading, managing, and coordinating recovery efforts. Together, this can increase the resilience of Tribal communities in the Clear Lake region as well as the entire region as a whole. Supplemental to this report, a compendium summarizing University of California resources available to support disaster preparedness, management, and recovery are available online through the [UC Davis Center for Regional Change website](#).

It is important to note that the applicability and effectiveness of recommended strategies are dependent upon the goals and visions of Tribal stakeholders and communities in the region. Thus, they must be considered within the unique social, cultural, economic and political realities conditions of Lake County and the project's timeframe and scope. Further refinement and application of strategies must be done in consultation with Tribal Leaders in the region.

DISASTER PREPAREDNESS AND RECOVERY AND TRIBAL GOVERNMENTS

As sovereign nations, tribes govern and manage safety and security of their lands and community members. Many Tribal boundaries in the US cross multiple county and state boundaries which can present a unique challenge in planning for response and recovery efforts. Federally recognized tribes have a unique and direct relationship with the US federal government and while resources from other communities and governments may be available and easily accessible for most local and state governments, it is not the case in many Tribal government communities. This reality can impact sovereign Tribal governments' capacity to develop and implement recovery plans both pre- and post-disasters.

The US Federal government is required to engage in meaningful consultation with Tribal governments prior to the finalization of policy or programs being implemented. Similarly, local and state governments are encouraged to engage with Tribal governments as well. In addition to maintaining and promoting disaster mitigation plans and actions as well as implementing continuity of operations and continuity of government plans pre- and post-disasters, tribes also prepare through conducting their own pre-disaster recovery planning. This planning allows Tribal governments to establish, organize, and coordinate goals, objectives and timelines for recovery. Tribes coordinate with local, regional/metropolitan, state, other Tribal, territorial, and the federal government as appropriate to develop protocols or agreements can facilitate disaster preparedness, response, and recovery efforts. Establishing this coordination ensures effective communication and coordination. The preservation of natural and cultural resources, sacred sites, and traditional lands should be integrated into pre-disaster planning discussions and in recovery and mitigation planning efforts so as to promote an inclusive, effective and equitable recovery process.

Federal agencies are meant to adapt and align with the Tribal recovery structure. Post-disasters, Tribal governments drive the process of assessing recovery needs, setting priorities, and communicating and collaborating with local, regional, and other Tribal and territorial governments - along with the US Federal Government to address recovery needs. Tribal governments often also provide resources for non-Tribal community members in the region during this process.

REPORT METHODOLOGY

The research presented and used in this report uses a mixed method research design. The methodology used here utilized 1) content analysis of the available academic literature on the topic; 2) stakeholder interviews with Tribal government representatives, members of the Blue Ribbon Commission and other agencies that serve Tribal nations in the Clear Lake Region; and, 3) quantitative and qualitative data analysis on the content analysis and interviews to identify 5 core recovery areas for Tribal nations in responding to natural disasters in Lake County.

Data for this research was gathered over a three-year period (2018-2021). Activities included building a profile and review of Tribal governments in the Clear Lake Region and undertaking interviews with Tribal government officials in the region. Through these in-depth interviews four key areas emerged within the data. These areas included: 1) economic and community development interests of the tribes, 2) challenges facing the Tribal communities in Lake County, 3) environmental concerns, and 4) opportunities or resources available through the CRC research team/UC Davis that they felt would be beneficial.

From this research we undertook an asset mapping exercise for each Tribal nation¹ and compiled this information to understand the full scope of resources available within individual Tribal governments and communities as well as the broader Clear Lake Region (Figure 1 below).

¹ Despite numerous efforts we were unable to meet with representatives from Robinson Rancheria. However, we were able to identify assets of the Tribal nation through secondary reports and information available online.

Resource mapping is a tool that provides the opportunity to render an outline of human and community assets within each Tribal territory, Tribal communities more broadly, and the Clear Lake Region that can be harnessed to facilitate Tribal community health and wellbeing (McKnight, 2010).

Resource mapping, for the purposes of this project was underscored by 4 goals in mind:

1. Identify resources available to tribes for their own economic development and ecological stewardship as well as barriers;
2. Strategize use of resources to reduce identified barriers;
3. Explore broader community resources (i.e., other Tribal communities, Lake County);
4. Identify existing limitations in resources, coordination of resources, and gaps in access to existing resources to improve strategic planning.

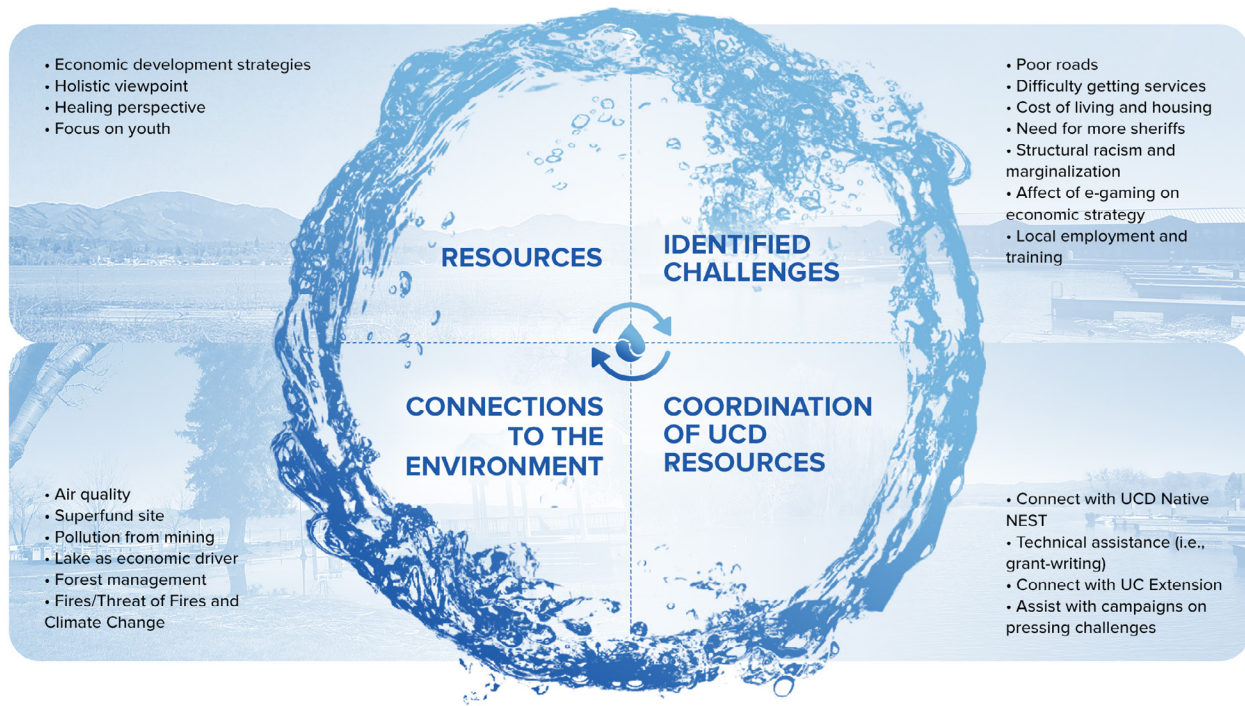


Figure 1: Resource Map of Tribes in the Clear Lake Region

As evidenced by previous research related to natural disaster recovery as well as socioeconomic development and well-being for Tribal governments, resource mapping allows for the identification of available resources as well as the limitations and gaps in resources (McKnight 2010; Cornell and Kalt, 2003). This suggests resource mapping can help to identify risks and benefits to the socioeconomic well-being and development of Tribal nations as well as the community of Lake County in terms of disaster preparedness, response, and recovery. These results warrant closer examination beyond a comprehensive resource mapping analysis. As such we employed content analyses and undertook additional qualitative and quantitative

research methodologies to complete an analysis of the experience of Tribal governments in responding to the natural disasters that have occurred in Lake County and to derive areas for potential advancement.

Five areas of disaster preparedness and recovery were identified through the resource mapping exercise:

1. Economic Recovery
2. Health and Social Services
3. Housing
4. Infrastructure Systems
5. Environmental Stewardship



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Overview of Tribal Nations and Recent Natural Disasters in the Clear Lake Region

HISTORICAL CONTEXT

Pomo Indians along with Wappo and Miwok, in thousands of tribes have been inhabitants of the Clear Lake region for over 11,800 years. In the early 1800s, Pomos were decimated by enslavement and abuse by many including Spanish soldiers and missionaries, European settlers, and gold prospectors (Lake County, 2021). They were dispossessed of their lands in the 1850s by the U.S. federal government becoming landless with many of the adults relocated to urban areas and children sent to Indian boarding schools, where students were met with abuse with consequences for intergenerational trauma (e.g., Bombay, Matheson, & Anisman, 2014) and systematic erasure of Indian identity through such practices as cutting hair and prohibitions on speaking their native Pomo language, Bahtssal (Lake County Tribal Health Consortium, 2021). Since the 1980s, after the Tillie Hardwick v. United States of America ruling, tribes have begun the process of reconstituting their rights to self-determination and by repurchasing their lands (Lake County Tribal Health Consortium, 2021). The oppressive and violent marginalization of Tribal communities along with a history of exclusion in planning must be taken into consideration in ongoing and future planning efforts of recovery to disasters.

Clear Lake, located in the County of Lake, is the oldest lake in North America (Sims et al. 1988). Before the 1950s, mined for mercury, sulphur, and borax, in particular by the Sulfur Bank Mine, a collection of an estimated 550 to 2,000 abandoned mines, Clear Lake continues to be polluted by mercury and methylmercury (Framsted, 2020; Underwood, 2020). This historical and ongoing pollution has disrupted Tribal communities' relationship with and use of the Lake for many important social, cultural, spiritual, and ecological practices. This pollution, coupled with settler colonialism – the erasure of Indigenous peoples and Indigeneity and replacement with colonizers (Veracini, 2011; Tuck and Yang, 2012), have resulted in the loss of and inability to access resources and activities as well as the lack of ability to consume fish at a subsistence level. A prominent result of this pollution is there is no longer full engagement with the Lake by the Tribal communities. This context is important and must be integrated in addressing and developing plans and strategies to promote recovery in the Clear Lake region.



RECENT HISTORY OF NATURAL DISASTERS IN THE CLEAR LAKE REGION



Figure 2: Map of Lake County, California including Tribal lands

Located in Northern California, Lake County is home to Clear Lake, the largest natural lake wholly within California. The county extends over 1,329 miles and includes 3 National Protected Areas (Mendocino National Forest (partial); Cow Mountain Recreation Area; and Cache Creek Wilderness and Cache Creek Wildlife Area) as well as 6 state protected areas (Boggs Mountain Demonstration State Forest; Anderson Marsh State Historic Park; Loch Lomond Vernal Pool Ecological Reserve; Boggs Lake Ecological Reserve; Clear Lake State Park; and Rodman Slough Preserve). Lake County is also considered part of California's Wine Country (one of the largest industries in the state) and includes 5 American Viticultural areas.

There are 7 Tribal nations included in the purview of the Clear Lake Project. They include: Habematolel Pomo of Upper Lake, Big Valley Band of Pomo Indians, Elem Indian Colony, Robinson Rancheria of Pomo Indians, Middletown Rancheria of Pomo Indians, Scotts Valley Band of Pomo Indians and the Koi Nation.

Information of each Tribal nation is elaborated on the following page.



1.

HABELMATOLEL POMO

The Habelmatolel Pomo of Upper Lake are a federally recognized Tribal nation located in Upper Lake. The tribe has 271 Tribal members. Tribal leadership includes a seven member council. The tribe operates Running Creek Casino as well as a variety of online enterprises and other ventures.

2.

BIG VALLEY BAND OF POMO INDIANS

The Big Valley Band of Pomo Indians is a federally recognized Tribal nation located in Lakeport. The tribe operates Konocti Vista Casino. Tribal leadership includes a 4 member Tribal council. The tribe is active in economic development programs and is a member of the Greater Lakeport Chamber of Commerce.

3.

ELEM INDIAN COLONY

The Elem Indian Colony is a federally recognized Tribal nation located in Lower Lake and Clear Lake near Rattlesnake Island. The tribe is small but growing after being reestablished in 2018. The Tribal council includes three members. The Tribal lands sit near a Federal Superfund site (the Sulphur Bank Mercury Mine) and there are environmental and human health concerns related to the level of Mercury contamination on lake and shores from the mine from an abandoned mine nearby.

4.

ROBINSON RANCHERIA OF POMO INDIANS

Robinson Rancheria of Pomo Indians is a federally recognized tribe. The Rancheria is located between Nice and Upperlake. The tribe consists of 519 members with around 173 living on the reservation. The Tribal council is comprised of 6 members. The Tribal

government operates Robinson Rancheria Resort and Casino, Pomo Pumps gas station, and Robinson Recycling Center.

5.

MIDDLETOWN RANCHERIA OF POMO INDIANS

Middletown Rancheria is a federally recognized tribe located in Middletown. The Tribal government consists of 5 council members, with Moke Simon serving as the Chairman. The tribe operates Twin Pine Casino and the Mount St. Helena Brewery Company. During the most recent wildfires the Rancheria was used as an emergency evacuation center.

6.

SCOTTS VALLEY BAND OF POMO INDIANS

Scotts Valley Band of Pomo Indians is federally recognized but has no land in held trust for their 300 members and operates out of offices in Lakeport and Concord (in Contra Costa county). It has an active TANF program and environmental and natural resources protection department among other capacities. The Tribal government is developing proprietary bioenergy/biochar production facilities, as well as The Clean Carbon Company, which will process that biochar into activated charcoal.

7.

KOI NATION

The Koi Nation of Lower Lake are a federally recognized, but landless, tribe in Lake County. The Tribal leadership consists of a 4 member council. The tribe is actively seeking a land base through which to service its Tribal membership.

NATURAL DISASTERS

Lake County has been the site of a number of severe wildfires, floods, and of environmental contamination. Since 2008 there have been 39 major wild fires in Lake County and a total of 208,705 acres have burned. From 2015-2019 more than 800 square miles (60% of the county) were burned (“California Fire Perimeters”; Huchingson). These fires destroyed large amounts of lands, homes, structures, businesses, and significantly impacted the livelihood of residents (See Figure 2 below)

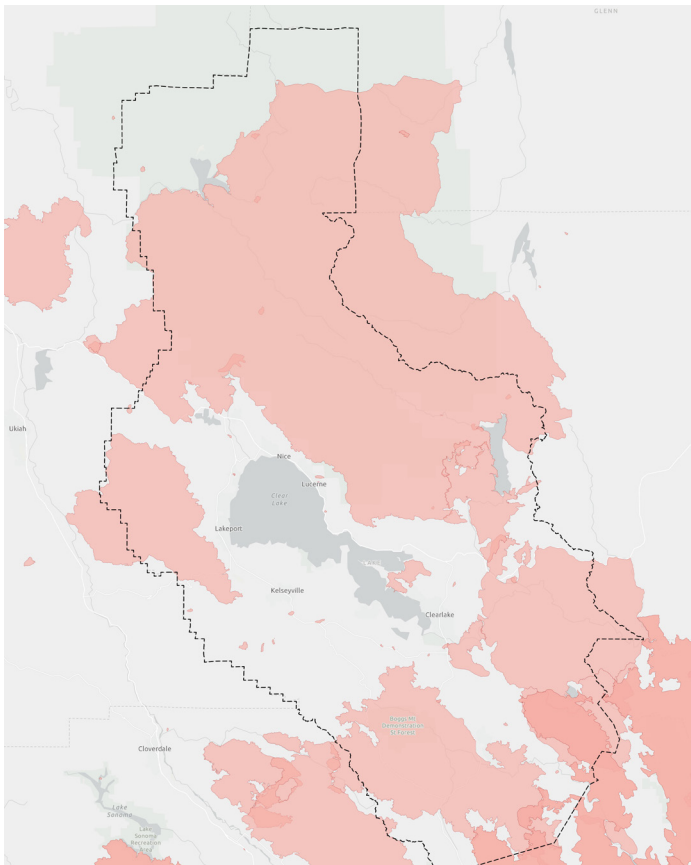


Figure 3: Wildfires in Lake County, California from 2015 through 2020. Orange area is 2015-2019 and equates to approximately 800 square miles or 60% of land mass. Red outlined areas are approximate burned area in 2020, exact size of area unknown

In the same time period, three atmospheric rivers, or a narrow corridor of moisture in the atmosphere, were experienced in the region which led to heavy flooding. These disasters were followed by 2 two additional wildfires and the COVID-19 Pandemic which brought a total of 13 consecutive disasters in the county over a 6 year time period.

In addition to these natural disasters, Lake County has continued to deal with a “slow” natural disaster in the increasing pollution of Clear Lake due to the naturally growing cyanobacteria (also known as blue-green algae).² This form of bacteria is capable of producing toxins or irritants that can cause illness or death in animals and humans. Such pollution has become a primary concern among residents in the area in recent years and the focal point of the Blue Ribbon Commission’s activities. Clear Lake remains a primary area of activity for Lake County, and has historically been a main attraction for tourists, and important to tribes for cultural, social, and environmental practices, customs, and ceremonies. Cyanobacteria are a group of naturally occurring photosynthetic microscopic bacteria. This form of bacteria is capable of producing toxins or irritants that can cause illness or death in animals and humans. The growth in cyanobacteria has impacted the summer tourism industry and has raised public health concerns.



² For more information the UC Davis Tahoe Environmental Research Center’s research into Clear Lake, sponsored by the Blue Ribbon Commission, see <https://terc-clearlake.wixsite.com/cldashboard>.

Core Recovery Areas

Our research highlighted 5 core recovery areas for Tribal nations in Lake County. A summary of these five key areas and the overall goals of efforts in each core area are outlined in Table 1 below.

TABLE ONE: SUMMARY OF RECOVERY CORE AREAS & GOALS

Economic Recovery	Return economic and business activities to a healthy state while supporting the development of new business and employment opportunities that promote economic viability.
Health Care and Social Services	Restore and improve health and social services capabilities and networks to promote the resilience, independence, health and well-being of residents.
Housing	Implement housing solutions that effectively support and contribute to sustainability, and resilience, and affordability for the community as a whole.
Infrastructure Systems	Stabilize critical infrastructure, minimize health and safety threats, and efficiently restore and revitalize systems and services.
Environmental Stewardship	Protect natural and cultural resources through appropriate planning, mitigation, response, and recovery actions to preserve, conserve, rehabilitate, and restore them.

Developing and maintaining these core areas during and after disasters requires a multi-agency, intergovernmental approach that engages the whole Clear Lake Region, which encompasses a wide range of service and resource providers and stakeholders. It is important to note that efforts to develop capabilities and resources should be integrated across the 5 core areas, thus efforts in one area are likely complementary to elements in another core area and should be integrated whenever possible. For sovereign Tribal nations specifically, this requires having opportunities to be meaningfully represented in pre-disaster recovery planning activities throughout the region. These strategies must also be developed sustainably, bringing together the three pillars of the economy, environment, and society, to ensure a mitigation of risks to future disasters.

ECONOMIC RECOVERY

Economic recovery encompasses the expertise and resources of Tribal and non-Tribal agencies and organizations that support inclusive development. Here the aim of activities is focused on sustaining or rebuilding businesses and supporting employment after a natural disaster. Driven by a multitude of complex and interconnected components, economic recovery efforts seek to adequately absorb the costs born from incidents and take active steps to reestablish local enterprises and the local/regional economy. Economic recovery needs of Tribal governments (like other governments) after natural disasters incidents and tend to shift as the recovery process continues.

Processes of economic recovery encompass Tribal governments, private sector actors, and government actors that serve critical rebuilding needs. After a disaster, economic recovery is often focused on promoting coordination, integration and collaboration among the economic recovery stakeholders which helps to support Tribal decision-making and leverage existing resources. Stakeholders involved can include Tribal governments, chambers of commerce, economic and workforce development organizations and systems, local governments, regional planning organizations, and the resources of the federal

government. Regionally, common issues can center on areas such as capital access needed for rebuilding for households, businesses and Tribal governments and are integrated with broader economic conditions of the local economy including uncertainty that is driven by unknown impacts, future market conditions, and the outcomes of regional rebuilding efforts. Tribal organizations work with local, regional, state, and federal agencies to coordinate delivery and the application of available resources to support local and state economic recovery.

Critical tasks associated with this core recovery area as identified in our research include those aimed at supporting economic stabilization of the affected areas, economic recovery strategies that integrate regional capabilities of the private sector, and facilitating problem solving among Tribal and non-Tribal economic recovery stakeholders in the Clear Lake Region.

HEALTH AND SOCIAL SERVICES

Ensuring continuity in operation as well as the timely restoration of interrupted health systems and social services has been identified as critical to a community's recovery. Such efforts require a unified effort from all partners and stakeholders in an affected region. For Tribal nations this includes not only Tribal agencies, but stakeholders and other government agencies including broader community organizations, for-profit businesses, service providers, and individuals and families accessing these services across a region. This also includes efforts to develop strategies that can promote the health and well-being of affected individuals as well as overall community resilience, health, and well-being across the Clear Lake Region.

The core area of Health and Social Services includes the impact that natural disasters have on health care services, social services, behavioral health services, environmental and public health, as well as food and medical supply safety and continuity. It also includes any long-term health issues specific to first responders and other vulnerable groups like children. Recovery efforts

in this area focus on tasks of restoring health care and social service functions in the wake of natural disasters, and ensuring the continuity of network providers and services that promote well-being.

HEALTH AND SOCIAL SERVICES

In disaster recovery, housing capability focuses on the ability of communities to develop realistic, accessible and affordable temporary and permanent housing options in the wake of natural disasters. Such housing options should be linked to long-term community plans and processes in the region. Moreover, housing efforts must seek to provide safe, healthy and affordable housing arrangements that can support the immediate needs of those rendered housing unstable after a disaster. Such arrangements must contribute to overall sustainability and resilience of the built community and in particular focus on providing adequate, affordable and accessible housing.

Both a critical and oftentimes challenging component of disaster recovery, housing poses many risks to affected communities. Housing is critical because local economies cannot recover from disasters without affordable and accessible housing. At the same time it is challenging because of the length of time required to undertake housing repair, rehabilitation, reconstruction, and new construction to recover the housing stock that is lost during a disaster. In fact, funding is not often available to fully support the recovery of community housing needs and the immediate need to rebuild often conflicts with the lack of resources readily available to create design, construction, labor, materials, inspection, and financing issues.

Critical tasks that must be undertaken in this area include: assessing the preliminary housing impacts and pre- and post disaster needs and to identify available options for temporary housing and support the local development of the plan for permanent housing options.

INFRASTRUCTURE SYSTEMS

This critical area of response refers to all efforts of owners and operators of infrastructure - both public and private. Here, the goal of the recovery process is to ensure that post-disaster infrastructure is in line with the expected demand on its environment and requires an adequate understanding of the key vulnerabilities of community systems as well as the people and businesses they serve. Mitigation and recovery efforts in this core area focus on maintaining continuous customer service post disasters which necessitates workarounds and patches that can be engineered immediately and integrated with permanent work to restore systems and services.

ENVIRONMENTAL STEWARDSHIP

By definition, natural and cultural resources are unique and valuable and must be protected/conserved during natural disasters, since restoring or replacing them may be impossible. This core area includes and integrates the expertise and resources of multiple individuals, agencies, and governments at the local, regional/metropolitan, state, Tribal territorial and federal governments, as well as other non-governmental organizations and private sector entities. Such expertise is used to preserve, protect, and restore an affected community's natural and cultural resources and the historic properties after disasters. Identifying vulnerabilities and reducing risks can help to minimize disaster consequences and expedite the recovery of these resources, with the focus primarily on preservation of such resources.

Recovery Core Area Practices for Lake County Tribal Governments



INTRODUCTION

A focus on the experience of Tribal communities as a central point in this report is both purposeful and important. In the last decade more than 80 natural disasters have occurred on Tribal lands in the US with many of these communities being hit multiple times in one year. Yet, on average Tribal governments receive less than half of what the Department of Homeland Security grants states for recovery efforts daily. While US citizens receive on average about \$26 per person, per year, from the federal government for disaster recovery, Tribal citizens receive approximately \$3 per person, per year (National Congress of American Indians, 2020).

In responding to natural disasters, Tribal liaisons must navigate a complex map of Tribal agencies, approved contractors, the federal government and Tribal council. And, while tribes are able to apply for FEMA (Federal Emergency Management Agency) funding for hazard mitigation plans there is often no guarantee the agency will provide funding. If tribes do not have a hazard mitigation plan in place they are not able to receive funding for permanent, non-emergency repairs or long-term mitigation measures. However, even when tribes have a plan in place there is no guarantee that FEMA will grant full aid to cover the cost of recovery efforts (National Congress of American Indians, 2020).

The review of the five key areas helps to understand the experience and challenges noted by Tribal governments, as part of the broader Clear Lake Region in responding to, mitigating, and recovering from natural disasters. The analysis presented below builds from the profile of Lake County presented above and triangulates these findings with data derived from interviews with Tribal government representatives and secondary data to identify critical tasks and practices across the 5 core recovery areas.



ECONOMIC RECOVERY AND DEVELOPMENT

Natural disasters have significant economic impacts to local economies. Over the last 20 years, research has shown climate change has accelerated the frequency and severity of natural disasters and emergencies in the US, and strongly suggests natural disasters pose significant socioeconomic consequences to local economies - particularly in under-served and marginalized communities (CERD, 2009; Oliva and Lazzaretti, 2018). Lake County is no stranger to natural disasters as outlined in the profile above.

At the same time, Lake County, as a regional economy, faces some significant economic barriers/challenges to development which make recovery from economic disasters particularly difficult. From 2015-2019, Lake County areas had higher poverty rates, lower median household incomes and has seen smaller increases in the percentage of college graduates (Brazil et. al 2021), suggesting that the area is losing ground economically relative to the broader region and other areas of California. Such downward trends are likely due to the increase in natural disasters in the region (wildfires and the contamination of Clear Lake) with the COVID-19 pandemic likely to further influence these trends.

Despite these trying circumstances, Tribal governments in the region have made continued strides in the area of economic development. Tribes in the Clear Lake region have sought to promote a diverse base of economic activities including: gaming, online enterprises, e-gaming, call centers and small business development as well as entrepreneurship efforts. Such strategies are constructed within a holistic and healing approach, with each Tribal community emphasizing the importance of placing youth at the center point of its many economic development goals and missions. The importance of a diversified economic development strategy was highlighted by the Tribal representatives in our research as an important strategy to ensure economic resilience in Lake County.

It should be noted that the role of a diversified economic development plan and strategy among Tribal nations is important for many reasons. While Tribal representatives noted that diversity in economic development initiatives helped to promote resilience to the shocks of natural disasters to the local economy and existing efforts, the influence of e-gaming and emerging consequences to the U.S. Supreme Court's 2018 decision to open the door to legalized commercial sports betting (Murphy v. National Collegiate Athletic Association) has created challenges to ongoing economic development strategies for tribes in the Lake County Region.

A tight local labor market was also cited as a particular area of concern for Tribal communities. Lake County has historically been dependent on one or two primary industries (i.e. tourism). Diversifying the county's economic and employment sector base can strengthen the region's resilience to economic shocks and natural disasters. From an economic development perspective, diversification of the economic base for Lake County is vital to the future of the area and while Tribal efforts have worked to support the diversification of the local economic base, without efforts to promote diversification the area is likely to remain economically depressed for some time and vulnerable to the impact that natural shocks present for local economies.

The capacity of Tribal governments to address economic recovery challenges can be significantly enhanced by integrated regionally based pre-disaster recovery planning which can help to engage economic recovery stakeholders across the region and leverage existing resources. Such pre-disaster recovery planning must include not only Tribal governments and agencies, but also actors within the broader community. Given the diverse economic development projects and plans that Tribal nations are engaged in, and the economic challenges present in the broader labor market of Lake County, three primary areas were identified by Tribal representatives as important to focus pre-and post-disaster recovery efforts on:

- Identify potential inhibitors to fostering post-disaster economic stabilization
- Implement recovery strategies to facilitate robust problem-solving among economic recovery stakeholders
- Remove barriers to post-disaster economic resilience

Identifying potential inhibitors to fostering economic stabilization of communities is essential to fostering stabilization and economic recovery and development of affected communities. This requires that data which offers an assessment of the economic issues of the regional economy and local economies be shared, aggregated and integrated across collaborating agencies in the regions. Tribal governments must be considered important participants in these discussions and collaborations.

In addition, responding to the economic impacts of natural disasters is difficult and requires the engagement of numerous stakeholders as outlined in the previous section. As such Tribal governments, where possible and appropriate, should develop economic recovery strategies that integrate stakeholders in the broader community in ways that support fast acting problem solving among economic recovery stakeholders relevant to promoting economic resilience of Tribal economic development initiatives.

Finally Tribal governments, in collaboration with regional governments, should focus on removing barriers to post-disaster economic resilience and recovery that can help distribute recovery resources to affected members efficiently. Accessing needed resources often requires collaboration and coordination with various government and Tribal agencies, non-profit organizations, local economic organizations, among others. Such a broad base of actors is hard to mobilize post-disaster which could impede collaboration and the distribution of necessary resources. Tribal governments can support these efforts by ensuring that Tribal hazard mitigation plans as well as the hazard mitigation plan of local and county governments in which they are embedded incorporate economic recovery strategies that can help to promote the seamless transfer of resources to affected Tribal communities.

HEALTH AND SOCIAL SERVICES

Over the last 40 years, rural areas across America have seen dramatic socioeconomic and technological changes that have significantly transformed community life in these regions. Broader forces of economic restructuring have resulted in the shift away from stable, family-sustaining agricultural and production jobs in rural labor markets to low wage service and sale jobs (Mattingly and Smith, 2010; Smith and Tickamyer 2011). Growth in immigration - both from new-destination settlement of international migrants, as well as the migration of low-income racial/ethnic minorities from urban areas - has given rise to contentious political and race relations that are often accompanied by changes in local public policies that restrict access to social services for populations deemed "undeserving" or "ineligible" (Visser, 2016; Keene, Padilla, and Geronimus, 2010;

Foulkes and Newbold, 2008; Kandel et al., 2011). At the same time, deepening "pockets of poverty" have emerged as rural communities continue to serve as sites for the development of "rural ghettos" and environmental "dumping grounds" (Lichter et al., 2008; Peters, 2012).

Moreover, local schools are often underfunded, teachers inexperienced and underpaid, and access to public health care providers and social services limited (Albrecht, Albrecht, and Murguia, 2005). Such realities are further augmented by the intersections of class, race/ethnicity, and gender that occur at the individual and community levels and shape patterns of inclusion and exclusion in community settings. At the same time increased vulnerability to climate change has been exacerbated by low quality housing in rural

America (USDA, 2016). Together these realities have made it difficult for rural areas to attract and retain residents - particularly young adults and young families.

Many social indicators for the Lake County Region suggest the area lacks socioeconomic opportunities for residents. High rates of unemployment, low labor force participation rate, and high levels of poverty indicate only some of the significant social challenges facing the area (Brazil et al 2021). Add to this the growing vulnerability of the region to climate change and wildfires and the contamination of Clear Lake, and such social challenges are intensified.

For Tribal communities, these challenges are further augmented by the difficulty of coordinating the delivery of county and state services in the area to support their communities. Poverty disproportionately affects Tribal populations in California as a whole. The rate of Tribal poverty is more than twice that of the rest of California's population, and one-third of Tribal residents live below the federal poverty rate (California Department of Housing and Community Services, 2021).

Indian Health Services has emerged as a key central health provider not only for Tribal communities in Lake County but for all residents as well. However, there remains a lack of a trained health care workforce (particularly primary care physicians). Tribal representatives have also noted a number of environmental conditions - many stemming from the lingering impacts of natural disasters have contributed to the need to support health and social services. Among these include a high level of mercury on Tribal lands in the area as a result of the Sulphur Bank Mine Superfund site, high levels of pollution in Clear Lake and in declining air quality in the region - both during and post-wildfires in the region.

At the same time, social concerns related to discrimination and racism experienced by Tribal community members within the broader community was noted as a significant barrier to coordinating and receiving health and social services pre-

disasters . Research suggests that when these factors are present in communities and regions prior to natural disasters, they can influence the efficacy of disaster response and recovery services as well (Schoff and Rottman 2000, Acosta et al., 2018). Such realities require ongoing and consistent efforts to support addressing and mitigating the impact of such social processes in pre-disaster contexts as well as ensuring that the response and recovery procedures are also attuned to such social processes.

The capacity of Tribal governments to respond to the challenges facing health and social services coordination and delivery during natural disaster response and recovery has been and can continue to be strengthened by already existing pre-disaster planning exercises that can be further integrated with the county and health and social service providers in the region. Given the health and social services challenges facing Tribal communities in the region and the Clear Lake Region as a whole, 3 critical areas should be focused on in disaster recovery efforts.

1. Identify potential and actually affected populations, groups and key service provider partners engaged in recovery and recovery planning efforts
2. Monitor and continue to assess community health and social service needs
3. Protect the health and safety of recovery workers during and post-disasters

Identifying affected populations, groups, and key service providers who are vulnerable to the impact of natural disasters is crucial to supporting an effective and efficient coordination of service delivery. This can be done, as many Lake Tribal communities have done, by completing and continuously updating a comprehensive assessment of community health and social service needs within Tribal communities and across the Clear Lake region. This requires support for the collection and ongoing monitoring of health and social indicators that can measure the overall levels of individual and community health and well-being, and that such information be shared, aggregated, and integrated across intergovernmental agencies

and other actors who are engaged in disaster response efforts which can help to prioritize needs. A region's recovery planning process must coordinate and collaborate with Tribal communities both in relation to pre-disaster and post-disaster recovery planning.

The continual monitoring of community health and social services needs underscores the importance for a recovery response to be able to effectively monitor the delivery and coordination of services during disaster recovery. Here it is necessary to ensure that recovery delivery systems are working to improve the resilience and sustainability of healthcare providers and systems and to construct networks that promote the independence and well-being of Tribal communities and Tribal community members. Such efforts require not only activities undertaken by Tribal governments but all relevant stakeholders and actors who engage in the recovery processes in the Clear Lake Region. By working together and promoting such inclusive recovery planning processes and ongoing assessments during disaster response can ensure that pre-disaster deficits, incident-related impacts, and appropriate resources for pre- and post-disaster response activities can support the design, implementation, and success of recovery strategies that can promote the ongoing health and well-being of Tribal community members as well as all community members in Lake County.

HOUSING


Housing remains a critical challenge for Tribal communities in the US generally, and California more specifically. A confluence of factors underscore all of these realities and a full review of such factors are outside the scope of this report. However, housing concerns for Tribal communities during disaster recovery are also influenced by the broader stock of housing availability in the region.

In US rural areas, like Clear Lake, housing problems remains one of the most visible manifestations of chronic poverty. Research has shown that the physical composition of the rural housing stock in the US is significantly different than the overall national housing stock. One particular difference

is the presence of manufactured homes, as more than 50% of the nation's manufactured home stock is located in rural areas (HAC, 2010). Since the early 2000s, manufactured housing has emerged as a way to promote homeownership among low-income rural families (MacTavis, Eley, and Salamon, 2006). While manufactured homes have improved in relation to the physical and structural attributes as well as aesthetics, research has shown that manufactured housing units are a disadvantage in wind and wildfire disasters when compared to masonry structures.

Challenges to developing housing stock in rural areas are numerous including poor access to construction materials, inadequate labor resources, and an overall lack of capital due to chronic poverty. Many of these challenges also act as barriers to social and economic development in rural and Tribal communities. The housing market of Lake County remains an underperforming market as compared to other regions. Median housing values are low and vacancy rates high. Home values impact the level of construction jobs and activity in the region, and can also affect consumer spending and influence household and intergenerational wealth. Low median household values in Lake County and high vacancy rates are suggestive of a depressed housing market and a concentration of inadequate housing structures.

In addition, increasing wildfires have posed a significant challenge to the resiliency of the housing stock of Lake County. Residents who are "burned out"(i.e. lose their home in the fire), face significant challenges to rebuilding which overtime present unique challenges to the area. Visser et. al (2018) note that for residents of Lake County being underwritten by fire insurance companies is getting significantly difficult for members of Clear Lake cCommunities. Rebuilding efforts for Tribal communities and especially community members who do not live on reservations is made even more difficult by an anything but seamless process operating within a nexus of intergovernmental agencies and actors that include FEMA, insurance companies, and contractors.



The capacity of Tribal governments to respond to the challenges facing their community members in relation to housing during disaster recovery processes is influenced by factors that challenge other government entities in the Clear Lake Region as well. Given these realities two critical areas of practice should be focused on:

- Assessing interim housing needs
- Assessing and identifying options for permanent housing during pre and post disaster recovery for Tribal community members both on and off the reservation

Addressing interim housing needs during disaster recovery is essential to supporting the resilience and well-being of communities and individuals. In Lake County such interim housing is often offered in evacuation centers. Many Tribal governments have supported evacuation centers by providing rooms for evacuees in hotels owned, operated, and located on Tribal lands or providing community centers as places for evacuation. Successful acquisition, deployment, and operation of interim housing during a natural disaster is directly reliant on the pre-disaster planning efforts of Tribal communities and broader regional government. Such efforts must not only focus on mapping and making use of available physical infrastructure in the area (e.g., hotels) must also focus on defining an achievable timeline for gaining a resilient, accessible, and sustainable housing market in community recovery plans across stakeholders. The planning currently being conducted by Tribal governments in the Clear Lake Region serves as a great example from which other government agencies can learn. This underscores, again, the need for an inclusive and deliberative planning process rooted in the community and intergovernmental efforts.

In addition, efforts must move beyond operating temporary housing/emergency housing during disasters to offering permanent housing for residents displaced by wildfires. While Tribal governments have jurisdiction over housing within their territories, efforts focused on this area within the broader Clear Lake region play an important role as well. As such there is a need to support a resilient, accessible, and sustainable housing market both in development of community recovery plans and in long term economic and social development plans for the region. Tribal government representatives interviewed for this study noted that while Lake County was a lower performing housing market, the high cost of housing relative to the average income of residents is a significant barrier to supporting the development of a resilient and stable housing stock in the region.

As Brazil et. al. (2021) note this is a particularly important issue for renters whose share of the burden is noticeably higher than in other counties surrounding Lake County.. The area also has a higher vacancy rate, indicating an underutilization of local housing units despite evidence of increasing demand and higher turnover in available housing stock. Such realities underscore a need for affordable and accessible housing and housing options. Such efforts could focus on expanding programs, supporting access to available homeownership resources for first time homebuyers, and supporting the introduction of new building materials in the construction of new homes.



INFRASTRUCTURE

Ensuring continuity in infrastructure (e.g., broadband and electricity) functioning and core capabilities is essential to supporting disaster recovery in all communities (Liu, 2016). This also includes efforts to support capacity building among Tribal nations in pre-disaster planning and post-disaster recovery. Communities and regions that engage in highly inclusive, public-private planning efforts are generally able to function better before, during and after a natural disaster as it allows for the empowerment of all stakeholders in a region (Kermensachi, et. al, 2018). Key to this practice is sharing information, identifying/leveraging resources, and promoting common objectives. Two critical areas in relation to infrastructures include:

- Support community engaged pre disaster recovery planning that includes Tribal governments at the regional and system wide level
- Leverage resources available in the community and externally for Tribal governments to support and build capacity

The capacity for Tribal governments, as well as all other stakeholders in the Clear Lake Region to ensure critical infrastructure delivery, requires comprehensive and clear coordination between multiple stakeholders which helps to ensure that

essential resources, both public and private are restored and sustained during disasters. This requires that Tribal governments are actively engaged in the coordination planning for infrastructure redevelopment at the region and system-wide level.

Comprehensive community engaged pre-disaster planning is key and can help to improve information sharing, aid in identifying and leveraging resources and to promote common objectives. Inclusive planning processes can help ensure that when natural disasters are imminent or occur that infrastructure needed to support operations are protected, disruption minimized or mitigated and then restored to support the resilience of communities throughout the region.

In addition, continued partnerships with local agencies and educational systems throughout Clear Lake, the State of California, and across the United States can help to support resource capacity building and community capital development - for Tribal nations and all communities in Clear Lake in responding to natural disasters. This includes helping to leverage resources such as from UC Agriculture and Natural Resources, Resource Conservation Districts, and other partners to further develop regional capacities.



ENVIRONMENTAL STEWARDSHIP

Previous research has shown that pre-disaster activities of individuals and groups dedicated to natural and cultural resources, which are closely linked for Tribal communities, are positively correlated with more successful recovery efforts in this area. Environmental stewardship is understood as a more social and eco-centric concept than environmental management or conservation (Barendse et al., 2016; Turnbull et al., 2020) and is typified by an attachment to place (Lokocz et al., 2011). Tribal communities across California have practiced some form of environmental stewardship for millennia.

Similar to reinvestment and redevelopment strategies in other core areas, post-disaster recovery may provide opportunities for strategic investment in energy efficiency and sustainability when rebuilding. Here federal government agencies, such as the Environmental Protection Agency (EPA), have initiatives and programs to work with community stakeholders, including Tribal communities, across the U.S. to develop sustainability plans pre- and post-disaster. This is another core area where Tribal communities are leading the way with a focus on natural resource stewardship. Research suggests using community and eco-based strategies to disaster recovery can empower community members and increase their resilience as they prepare to respond to future disasters (Lin, 2019).

More recently and working with both US Federal and state agencies such as the Bureau of Indian Affairs, US Forest Service, and California Department of Fish and Wildlife, Tribal communities in Lake County and across the state have developed formal eco-cultural resource plans and climate change adaptation plans. The former kind

of plan is a holistic approach to managing interests related to humans, natural/cultural resources, and the Tribal community (Karuk Tribe, 2010). Such approaches reveal an understanding of natural resources not just as natural but also as cultural and spiritual. Similarly approaches to sustainable land stewardship is a key approach within Tribal climate change adaptation planning (Karuk Tribe, 2019) that is essential to preparing for and responding to disasters that will increase in scope and frequency as the climate crisis deepens.

Environmental stewardship tends to incorporate several key activities including sustainable use, education, policy-focused advocating, preserving and restoration (Turnbull et al., 2020).

Taken together there are several key areas to focus on to advance environmental stewardship across Clear Lake are tribes and other community stakeholders including:

- Facilitating direct experiences with nature and connecting/reconnecting identity in relation to nature
- Create and extend community networks with Tribal communities and regional stakeholders and decision-makers across the Clear Lake Region, Lake County, as well as neighboring counties including Mendocino, Sonoma, and Napa counties
- Connect values, actions, and outcomes to environmental stewardship and ensure options for the protection of cultural/environmental resources have been explored and implemented to the maximum extent possible

Practices to Support Disaster Recovery for Clear Lake Tribal Communities

The identification of the 5 core recovery areas above illuminated a series of practices in each area that can support effective, efficient, and equitable recovery from natural disasters in the Clear Lake Region. These twelve activities were described in the above section. Table 2 provides a summary of the best practices highlighted in the previous discussion.

TABLE TWO: CRITICAL ACTIVITIES AND PRACTICES TO SUPPORT DISASTER RECOVERY FOR CLEAR LAKE TRIBAL COMMUNITIES AND REGION

Economic Recovery	<ul style="list-style-type: none">• Identify potential inhibitors to fostering stabilization post-disasters• Implement recovery strategies to facilitate robust problem-solving among economic recovery stakeholders• Remove barriers to post-disaster economic resilience
Health and Social Services	<ul style="list-style-type: none">• Identify potential and actually affected populations, groups and key service provider partners in recovery and recovery planning efforts• Monitor and continue to assess community health and social service needs• Protect the health and safety of recovery workers during and post-disasters

Housing	<ul style="list-style-type: none"> • Assess interim housing needs • Assess and identify options for permanent housing during pre and post disaster recovery for tribal community members
Infrastructure Systems	<ul style="list-style-type: none"> • Support community engaged pre disaster recovery planning that includes tribal governments at the regional and system wide level • Leverage resources available in the community and externally for tribal governments to support and build capacity
Environmental Stewardship	<ul style="list-style-type: none"> • Facilitating direct experiences with nature and connecting/reconnecting identity in relation to nature • Connect values, actions, and outcomes to environmental stewardship and ensure options for the protection of environmental resources have been explored and implemented to the maximum extent possible


Fully responding to natural disasters requires ongoing assessment, monitoring, and re-configuring of the multitude of resources and actors engaged in recovery activities. As initial steps, it is possible to identify a set of practices that can support policy learning, experimentation, and adaptation to support recovery efforts in Lake County. Such activities support comprehensive and inclusive pre-disaster recovery planning processes with tribe as well as across communities and governments in the Clear Lake Region. Recovery planning allows for Tribal communities to be better positioned to address pre-existing community needs, to take advantage of available resources and think differently about how resources can be repurposed and rebuild in a resilient way.

Pre-disaster preparation activities should seek to establish common objectives through synchronized plans and regulations for all stakeholders as much as possible. Such activities can help resolve potential resource conflicts and can also ensure that recovery funds are maximized and used effectively. As an activity itself, pre-disaster preparation is valuable for all Tribal communities. For tribes, pre-disaster preparation planning supports community processes that consider Tribal resources, the needs of all members, and the needs of future generations. Integrated disaster

recovery plans can encourage coordination with state and local governments and other external partners which can increase access to recovery resources for tribes and ensure higher levels of community resilience across the Clear Lake Region. In addition such practices can provide a place to establish procedures and roles that for Tribal communities who are federally recognized can help align practices related to procurement, grants, and assist in requesting emergency and disaster declarations from the federal government.

A multi-level integrated pre-disaster preparation planning process across the Clear Lake Region will place Tribal communities in an even better position to address existing community needs, take advantage of available resources, and promote innovation in relation to how resources and opportunities can be adapted to new purposes in order to rebuild in a way that promotes community resilience. Participatory and effective pre-disaster planning and preparation for potentially harmful events can save time and money in relation to regional disaster recovery planning as roles and responsibilities will be clearly identified and resources directed to their most needed areas.

While hazard mitigation plans and other recovery plans are already in place for the Clear Lake Region



and for many Tribal governments, we identify six additional activities to support further efforts in this area and to bolster disaster preparedness and recovery for Tribal communities as well as the Clear Lake Region as a whole. These 6 activities are in themselves pre-disaster planning processes and can help ensure that twelve activities identified above are able to be undertaken to support recovery across the 5 core areas. These include:

1. Identify ways to build upon existing plans and initiatives
2. Conduct a vulnerability analysis
3. Identify and assess recovery capacity
4. Establish recovery priority areas
5. Adopt recovery ordinances
6. Continual update of the Hazard/Mitigation Plans

Such activities will require a greater investment of time and resources by Tribal governments as well as governments and actors across the Clear Lake Region as a whole. However, such activities support greater preparedness for post-disaster recovery at the Tribal level and for the Clear Lake region as a whole. Support for these activities can be provided through public agencies (such as California's Strategic Growth Council, California Fish & Wildlife, Bureau of Indian Affairs).

BUILD UPON EXISTING PLANS AND INITIATIVES

In promoting effective, efficient, an equitable recovery establishing common objectives synchronizing Tribal plans and regulations (including mitigation plans, comprehensive plans, land use plans, and wildfire prevention plans) can support a faster, more effective and sustainable recovery process. Being able to coordinate Tribal efforts with other regional efforts can help avoid conflicting priorities following a disaster and can also help to inform future revisions to other community plans.

VULNERABILITY ASSESSMENTS

Vulnerability assessments are helpful in identifying and inventorying vital community resources and assets and how vulnerable such assets are to different types of natural disasters. In turn, identifying vulnerabilities can help develop adequate strategies for their protection. This is particularly important for Tribal communities who have important cultural and environmental sites that may be especially vulnerable to wildfires and flooding in the Clear Lake Region. While existing comprehensive plans, housing plans, or hazard mitigation plans may outline vulnerabilities and risks, if such plans are not adequately developed a comprehensive vulnerability analysis can be a building block for planning and development.

Moreover, assessing the unique vulnerabilities of Tribal members is also important. This includes identifying personal and community property that may be considered essential to Tribal identity (i.e. cultural and spiritual items, or the items required to maintain certain lifestyles). The identification of these vulnerabilities can help Tribal communities prepare for particular individual and collective risks to Tribal members.

ASSESS CAPACITY

In-depth assessments of resources and capacity to manage and coordinate recovery should be ongoing and consistent efforts of pre-disaster preparation/recovery efforts. Such an assessment must consider: the role of leadership and staff and their capacity to take on additional responsibilities or supplemental roles in response to a natural disaster and whether or not it will be necessary to engage external partners to fill any gaps in capacity. In addition, external organizations and service providers which could be called upon to assist in recovery efforts should be identified and can include a range of partners such as assistance to grant writing, volunteer management, or

resource procurement. By undertaking a thorough assessment tribes will be able to determine whether they have the resources needed to manage a disaster as well as to identify and leverage outside partnerships, training, capacity development, and or mutual aid agreements that can help to build recovery capacity. Such an activity will also greatly benefit the Clear Lake Region recovery efforts as a whole as well.

ESTABLISH PRIORITY FOCUS AREAS

Disasters can place competing demands on multiple segments of a community and region. Loss of housing and healthcare facilities, for example, are extremely detrimental to communities and regions and can be further compounded when infrastructure damage occurs to critical roads, bridges, and utilities that serve the same areas. It is often the case that Tribal leadership can be faced with difficult decisions related to repairing or rebuilding - particularly in the face of scarce resources. Recovery priorities can be identified by matching vulnerabilities to the resources and partnerships available and can identify Tribal community priorities pre- and post-disasters such as: housing, culturally significant sites, restoring essential services, building equity, enhancing capacity, increased environmental stewardship, and resource coordination.

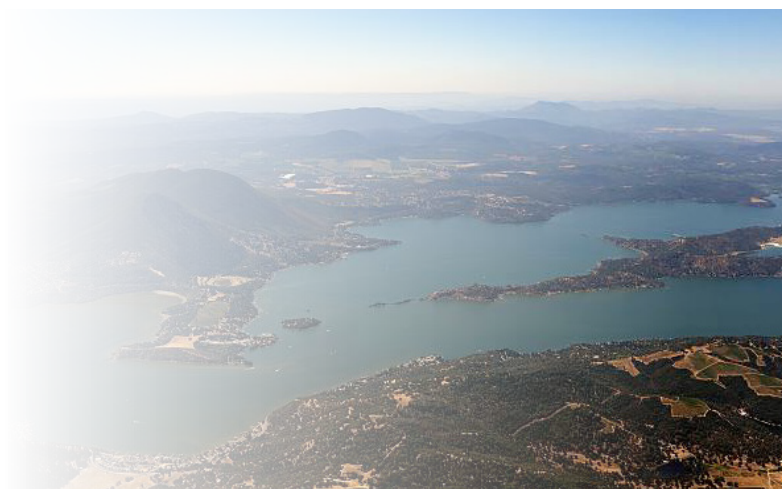
RECOVERY ORDINANCES

In the aftermath of a disaster, tribes often face numerous decisions that must be made within short timeframes and in light of asymmetric information. It is often necessary that Tribal leadership needs to make these time- sensitive decisions quickly - decisions that might otherwise involve substantial Tribal member engagement. Given this, a recovery ordinance can be helpful as it allows Tribal officials to make urgent recovery decisions within short periods of time under specified circumstances. Such an ordinance establishes authority by which Tribal officials can assume responsibility for recovery activities, identifies roles, and lays out the structure of a recovery process - which is important not only to Tribal members but to outside agencies as well who coordinate services and resources.

The American Planning Association (APA) has developed sample recovery ordinances called “Model Pre-Event Recovery Ordinances” that can be adapted. Such a model is applicable not just for Tribal governments for all local governments seeking to better prepare for natural disasters. It is recommended that writing the ordinance occurs during non-disaster periods as it can allow for enough time to discuss provisions and conditions that must be met for it to be effective. Additional information and other key points on such an ordinance can be accessed here: <https://www.planning.org/publications/document/9139474>

HAZARD MITIGATION PLANS

Hazard mitigation plans are used by state, Tribal, and local governments to identify the risks and vulnerabilities associated with natural disasters and develop long-term strategies for protecting people and property from future hazard events. Such plans are key to minimizing disaster damage and often describe key actions that if taken by the community will mitigate the impact of future hazards. While hazard mitigation plans exist for many tribes and communities in the Lake County region, it is important to ensure that such plans are updated and to the extent possible coordinate resources and capacity across levels of government and actors in the Clear Lake Region.





EXAMPLES OF TRIBAL COORDINATION AND COLLABORATION IN CLEAR LAKE AREA

There are several ongoing efforts of Tribal coordination and collaboration in the Clear Lake Region. We highlight two of them as examples of the importance of such coordination. Five Lake County tribes have collaborated on the multi-tribal hazard mitigation plan (HMP) with U.S. FEMA. Not only has this improved coordination across the Tribal communities that often encounter the same disaster risks and effects, it has also cut costs. For instance, taking the cost of this planning and development of the 5 individual plans for each tribe to 25% of what it would have cost for each tribe to do separately. This is one of the first multi-tribal HMPs with FEMA and can serve as a model for other similarly situated Tribal communities as well as other planning needs with FEMA. As a result, all governments here in Lake County, including cities and Tribal communities (with the exception of Koi Nation) have FEMA HMPs.

A second example is of environmental stewardship training developed and deployed by the Tribal EcoRestoration Alliance (TARA), a cross-cultural, multi-organizational collaborative that works to revitalize ecology, economy, and culture through indigenous-led stewardship. This training, completed in Spring of 2021 was funded as collaboration across multiple stakeholders including New Paradigm College, Robinson Rancheria, Scotts Valley Band of Pomo Indians, US Forest Service, and BLM-Berryessa. One of the goals of this training is to hire 5-6 people from the training to have a crew to steward the land. This example evidences the importance of grassroots coordination and collaboration to develop a training curriculum with resources to hire trainees to increase employment opportunities, improve stewardship practices, and teach Traditional ecological knowledge.

These examples provide insights into how to leverage local knowledge and community networks to develop programs to address the needs of the community to recover from disaster and build resilience capacity.

SUMMATION

This report has provided an overview of practices and suggested activities to support natural disaster recovery in Lake County. The report has had a specific emphasis on the experience of Tribal communities, but its findings are relevant to the Clear Lake Region as a whole. The analysis provided within identified 5 key recovery core areas of focus for Tribal communities in Lake County: Economic Recovery, Health and Social Services, Housing, Infrastructure, and Environmental Stewardship. In addition we identified 12 activities across these five areas which are important to ensure recovery and have identified 6 comprehensive practices or activities that can help to support the 12 activities needed to ensure recovery across these five areas and suggest that such practices should be undertaken not only at the Tribal level itself, but through a comprehensive participatory pre-disaster planning process that engages all governments, stakeholders, and communities in the Clear Lake Region.

While the report has focused on the experience of Tribal nations in the Clear Lake Region, the activities and practices suggested can support community readiness, resilience, and equitable recovery to natural disasters in the region. Yet, it should be noted that the findings do not present an entire picture of the comprehensive practices that can be used or are used to support disaster recovery and preparedness among Tribal communities in the Clear Lake Region. As such, like any effort of this nature, the recommendations provided must be approached with the understanding that further consistent and continuous monitoring of a community's or region's preparedness and response to natural disaster is necessary. As such this report is meant to help support and supplement already existing processes and practices by tribes and other governments as well other stakeholders that advance region-wide equitable and inclusive natural disaster preparedness and disaster recovery activities.

In addition, a compendium summarizing a list of resources available through the University of California to support resource alignment and capacity building among Tribal communities broadly is available online through the UC Davis Center for Regional Change website: <https://regionalchange.ucdavis.edu/> and is summarized in Appendix A

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APPENDIX A: RESOURCE LIST

UC Davis

Student Support

- [Native American Academic Student Success Center \(The Nest\)](#) – support Native American students on campus
- [Native American Student Union](#) – academic support group for Indigenous students on campus
- [Campus Resources for Native American Students](#) – guide to on campus resources
- [Arboretum and Public Garden](#) – student internships in horticulture and community outreach
- [UC Davis Student Farm and Children's Garden](#) – programs and field-trip site for agricultural and garden-based learning
- [Office of Diversity, Equity, & Inclusion](#) – resources for students and families on UCD's efforts to increase diversity, equity, and inclusion
- [UC Davis Homepage](#) – resources for interested students and their families

Community Resources

- [Robert Mondavi Institute for Wine and Food Science](#) – resources and classes for developing wine and beer
- [Cannabis and Hemp Research Center](#) – resources and research into cannabis and hemp for agricultural production
- [Native American Contemplative Garden](#) – indigenous cultural and ecological landscape
- [Center for Regional Change](#) – community practice and research to advance social outcomes in the region with specific links to Lake County

University of California

- [UC Resources for Native American students](#)
- [UC President's Native American Advisory Council](#)

UC Agriculture and Natural Resources

- [4H](#)
- [Lake County UC ANR Office](#)
- [ANR Work Group: Building Partnerships with Native American Communities](#)
- [UC ANR Homepage](#)