



CLIMATE ACTION ON TRIBAL LANDS: A COMMUNITY BASED APPROACH

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PROJECT OVERVIEW

As global and national climate negotiations have failed to develop a binding agreement to reduce greenhouse gas emissions, many communities are taking the initiative and moving forward with their own climate action plans. This project sought to bridge the gap between global climate projections and local climate action, including mitigation and adaptation efforts. Federally-recognized tribes such as the Santa Ynez Band of Chumash Indians (SYBCI) are in a uniquely advantageous position to be proactive regarding climate change mitigation and adaptation.

Due to their status as sovereign nations, tribes have the freedom to implement their own laws and regulations that apply to their reservation lands. This independence will enable tribal communities to maintain and preserve their cultural and economic resources by enacting policies that are sensitive to their specific concerns. This project worked with the SYBCI to assess their impacts on, vulnerability to, and mitigation and adaptation strategies in response to climate change.

Figure 1. Location of the SYBCI Reservation



CLIENT

The client for this project was the Santa Ynez Chumash Environmental Office. The Environmental Office serves the SYBCI by funding environmental initiatives, educating the community, and exploring cost-saving opportunities for reducing energy consumption.

APPROACH

This project aimed to provide a foundation of action that the Environmental Office can utilize moving forward. Information was strategically provided to be specific enough to be useful for the SYBCI but not so specific as to impose values or be irrelevant for other tribes. As the project objectives took shape, a natural division became apparent and the project was divided into three sectors:

- Greenhouse Gas Management
- Resilience & Risk Assessment
- Community Outreach & Engagement

In order to be successful within the unique governmental and social structure of a tribal community, all aspects of this project had to be approached with an inherent degree of fluidity.

GREENHOUSE GAS MANAGEMENT

Carbon Footprint

A carbon footprint is a valuable tool for measuring and monitoring emissions and was an essential deliverable of this project. The footprint created as part of this project included on-reservation, commercial and government, Scope I and Scope II emissions for 2009. The year and the boundaries were chosen based on the availability and completeness of data and feasibility within the scope and timeline of the project.



The data that was gathered for the footprint included natural gas, electricity, gasoline and diesel for the casino, hotel, tribal hall, health center, fire station and streetlights. The results of the footprint showed that the reservation produced nearly 8 million kg CO₂e in 2009. The largest contributor to the overall footprint was the casino floor while the largest source of emissions was electricity. Commercial emissions represented a far greater percentage of these emissions than that of the government.

Figure 2. Total footprint breakdown by sector

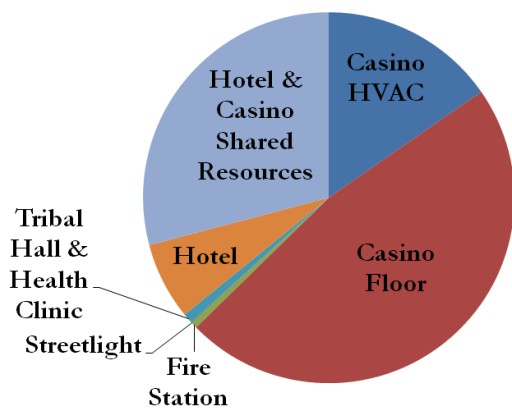
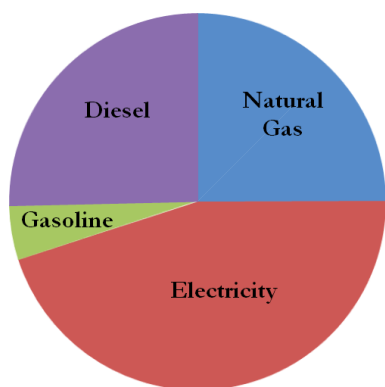


Figure 3. Total footprint breakdown by source



Policy & Management Recommendations

Federally-recognized American Indian tribes are advantageously positioned to address the complex problems of climate change through policy mechanisms, including:

- Adopting a climate change resolution.
- Developing a building code that encourages increased energy efficiency standards.

- Implementing the ISO 14000 environmental management system for the Tribe’s commercial properties.
- Joining ICLEI (International Council for Local Environmental Initiatives)-Local Governments for Sustainability to facilitate implementation of mitigation and adaptation efforts.

These action items were recommended by the project group for consideration by the Tribe. The group recognized and iterated that further analysis by the Tribe may be necessary to draw conclusions about the true potential of these recommendations. For the purpose of this project, recommendations were based on simple cost benefit analysis, case studies of other communities and projects, and the opinions of stakeholders.

RESILIENCE & RISK ASSESSMENT

The resilience portion of the project was designed to raise awareness about climate change and potential adverse effects on the Tribe and reservation resources. None of the models, maps or assessments created in this project were meant to be predictive, especially at the local scale. Rather, the purpose of these deliverables was to shed light on the concerns that tribal members may have regarding climate change and its local and cultural impacts.

Economic Risk Assessment

The Tribe’s energy costs are closely tied to outdoor temperatures. Increasing temperatures due to climate change and rising energy prices could therefore cause expenditures related to heating and cooling of buildings on the reservation to increase dramatically.

In addition, any change in the agricultural makeup of the Santa Ynez Valley could lead to declines in tourism. If the presence of vineyards in the surrounding valley is altered due to climate change, the casino and resort may be affected. To explore this issue the casino should consider conducting a benefits transfer study. A cost benefit analysis that incorporates a travel cost method would provide valuable insights for how to continue to attract guests from Los Angeles and San Diego. Innovative solutions could also be synergistic with greenhouse gas reduction goals. For example, providing mass transit options for guests coming from the Los Angeles area would reduce trip generation to



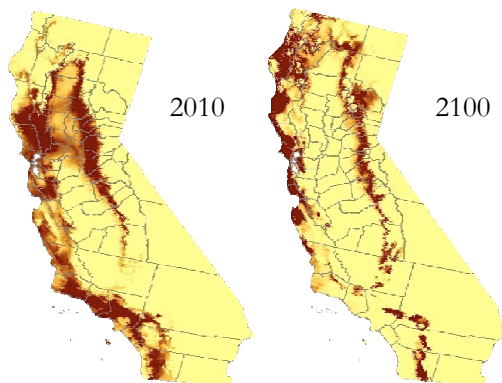
and from the casino and offset increased travel costs for guests as well as reduce greenhouse gas emissions.

Cultural Risk Management

For this project, several modeling processes were used to illustrate the risks of climate change to the SYBCI. Specific culturally-important plants which still exist on the reservation in Santa Ynez today were modeled. These plant species include toyon (*Heteromeles arbutifolia*), coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*) and coffee berry (*Rhamnus californica*).

Plant distribution will be greatly impacted by climate change as a result of the complex interactions between climate, plant growth, animal species distribution, human settlement, fire activity, temperature and precipitation patterns. Under these altered conditions some species, such as toyon, no longer have viable habitat within the reservation.

Figure 4. Distribution of Toyon currently and in 2100 under possible climate change conditions



One of the major concerns of global climate change is sea level rise as a result of melting glaciers and thermal expansion of water. Sea level rise will cause a wide range of impacts, including dangerous and expensive flooding and storm-surges as well as a permanent loss of coastline habitat and property.

Sea level rise was modeled for this project to see how changes in sea level would affect culturally important sites across California. Many American Indian tribes have kept their culturally important sites confidential in order to protect them from misuse. In respect of this preference, the sites chosen for this modeling process are all publicly documented and state-managed. Figure 5 illustrates how a 3-meter sea level rise would affect

these culturally important sites such as Morro Bay, an important site for Chumash ceremonies and natural resources. This increase would also inundate much of the Elfin Forest, Morro Bay State Park, and some access points to Morro Rock, where solstice ceremonies are held every year.

Figure 5. Modeled Sea Level Rise Current



3m



COMMUNITY OUTREACH & ENGAGEMENT

In order for mitigation and adaption efforts to be successful and long lasting, it is important that they incorporate and reflect the values of the SYBCI. To know, assess and incorporate community values requires dialogue and interaction with the community at every level. The members of this project immediately recognized the need for community outreach to facilitate collaboration between the different branches



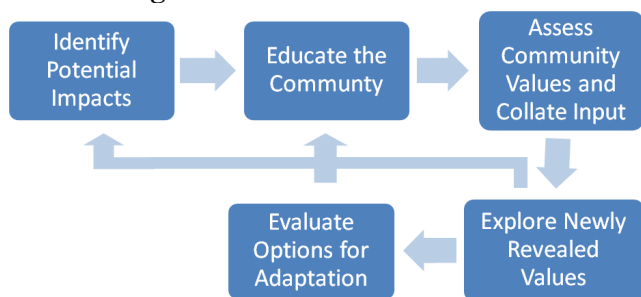
of the tribal government and the community as a whole. Therefore, the group took every opportunity to engage the community in dialogue on climate change.

In addition to community outreach, this project recognized the importance of networking in sharing experiences among tribal communities. Several tribes have taken steps toward developing a climate action plan, and the lessons learned in each of these cases can help inform the process by which the SYBCI carries this project forward. There have also been significant partnerships made between universities and tribal communities. These partnerships provide opportunities for capacity building on tribal lands.

Value Assessment

An iterative process that identifies foreseen consequences of climate change and evaluates the cultural significance will require the coordination of tribal operations at all levels. This project has taken the first steps toward creating a value assessment tool by identifying areas of cultural and financial risks that climate change may pose to the Tribe. This value system can be actively integrated into the daily operations of the Tribe’s government and development operations.

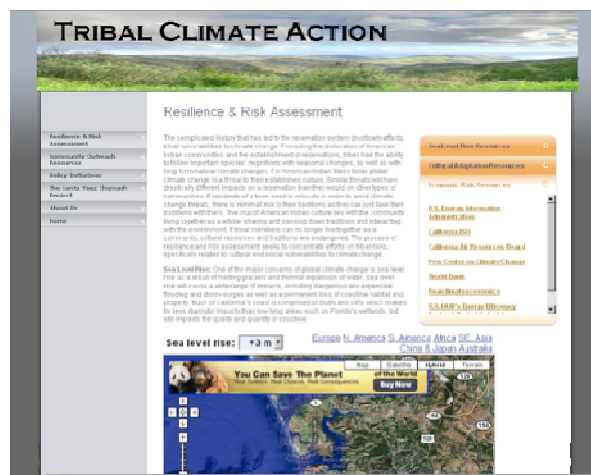
Figure 6. Value assessment tool



Website

As a component of this project the group developed a website to share resources with Chumash community members, policymakers and other tribes and supporting organizations. This site will serve to consolidate and present the information gathered over the course of this project in a user-friendly manner. In gathering and sharing these tools and resources, it is our aim to provide the necessary information to involve the community in future mitigation and adaptation efforts made by the Santa Ynez Chumash Environmental Office.

Figure 7. Screenshot from the project website <http://www.tribalclimateaction.org>



CONCLUDING THOUGHTS

The Santa Ynez Band of Chumash Indians has recognized their contributions and vulnerability to climate change, and is taking important actions toward developing a comprehensive strategy for climate change mitigation and adaptation. While efforts on such a small scale will not have a significant impact on the magnitude of climate change, community action can serve as a force to change its direction. This project has provided tools for the SYBCI to optimize their own operational efforts and to continue a long tradition of stewardship..

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