



## **Santa Ynez Band of Chumash Indians: Climate Change and Environmental Management Programs**

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The Santa Ynez Band of Chumash Indians (SYBCI) is made up of descendants of the Chumash people who once resided on a large, 7,000 mi<sup>2</sup> territory in Southern California. The territory encompassed what are now Malibu, Paso Robles, and northeast to the border of the San Joaquin Valley. Today, the reservation at Santa Ynez, established by treaty, is home to approximately 300 community members.

Concerned about the effects of climate change on their homeland and surrounding environment, the Santa Ynez Band of Chumash Indians have taken numerous steps to reduce greenhouse gas emissions and address the impacts of climate change on tribal peoples, land, and resources. In 1998, the Tribe formed the Santa Ynez Chumash Environmental Office (SYCEO) to address tribal environmental issues. Since its inception, the SYCEO has expanded to include environmental stewardship and a strong focus on climate change mitigation. Concurrently, the Chumash Casino Resort has engaged in a number of energy efficiency projects. This profile describes the climate change programs implemented by the SYCEO and Chumash Casino Resort to address climate change adaptation and reduce their greenhouse gas emissions.



### **Santa Ynez Chumash Environmental Office – Climate and Energy Programs**

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The Santa Ynez Chumash Environmental Office has developed a comprehensive plan to address environmental issues and increase the effectiveness of the SYCEO. This plan, which establishes goals through 2022, is intended to foster a coherent direction for the office, coordinate tribal environmental efforts more effectively and improve participation in the tribal community. The overarching goals of this comprehensive plan are to:

- Increase energy independence and efficiency in light of climate change;
- Promote health of the local ecosystem;
- Implement measures to mitigate climate change impacts;
- Adapt to projected changes in climate;
- Reduce waste within the tribal community; and
- Involve/train tribal members to implement programs.

### **Tribal Energy Initiatives**

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The SYCEO has established numerous programs aimed at creating more efficient, independent sources of energy in the tribal community. Specifically, the office is promoting energy independence by installing solar panels on tribal buildings, installing electric vehicle charging stations, utilizing cooking oil from tribal businesses as an alternative fuel for vehicles, and modifying building structures to be more energy efficient through installation of better insulation and better building design.

In 2010, SYCEO received a \$500,000 grant from the EPA Climate Communities Showcase Program. This grant resulted in a program aimed at increasing home and commercial building energy efficiency throughout the reservation, as well as training community members to install solar panels and assess and upgrade buildings for increased energy efficiency. One important aspect of this project is collaborating with local schools, utility companies, county organizations, businesses, and non-profits.

Since the implementation of this grant, SYCEO has facilitated 5 residential solar installations. Additionally, SYCEO has facilitated 16 Home Energy Assessments and 2 home retrofits. The program seeks to train between 30 and 60 community members. To date program staff have trained 22 people to do building performance assessments, home energy upgrades and solar installations. This program is helping to create jobs while promoting energy independence and lowering the community's environmental impact.



Residential Solar Installation, photo courtesy of SYCEO

### **Habitat Management and Restoration**

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With a strong focus on habitat management and restoration, the SYCEO has developed a database of native and culturally important plant species. As of 2013, this database includes over 320 plant species. Additionally, in collaboration with the Bren School of Environmental Science and Management at the University of California Santa Barbara (UCSB) the SYCEO created models that project climate change's effects on sea levels and native plant populations in central California. The SYCEO has worked extensively with the UCSB's Bren School to develop a detailed report of potential effects of climate change on native people, focusing on the Santa Ynez Chumash and their homeland. The Tribe believes that looking ahead is key in anticipating the impacts from climate change and reducing tribal contributions to greenhouse gas emissions, and that this effort is a step in that direction.

The SYCEO has also focused efforts on waste removal in the local community and surrounding ecosystems. With help from community volunteers, the environmental office has led extensive clean-ups of solid waste in creeks and riparian habitat. Since 2008, SYCEO has organized the removal of 200 tons of waste, 250 gallons of hazardous waste, 12 car batteries, more than 44 vehicles and 500 car tires from tribal lands.



Zanja de Cota Creek plant restoration, photo courtesy of SYCEO

Furthermore, the SYCEO has made a concerted effort to document and monitor the health of the local ecosystem. The SYCEO performed the California Water Boards' Surface Water Ambient Monitoring Program (SWAMP) Bioassessment on the Zanja de Cota Creek to determine the creek's health and biodiversity. A variety of other studies and projects are being implemented, such as stabilizing the banks of the creek, investigating the presence of endangered species, including the California Red Legged Frog, and removing invasive species from the riparian zone. By removing waste and "taking inventory" of the local environment, the

SYCEO is gaining a better understanding of local ecosystem health, and how they can effectively aid in promoting a thriving, biodiverse local environment.

The SYCEO has also established programs for gardening and cultivation of native plants. In 2011, the community garden supplied vegetables to community members and served as a venue for an afterschool program. In late 2012, the community garden expanded to the newly-opened Learning Center. The new location provides a greater opportunity to educate and engage younger generations and includes a vegetable planting area, small greenhouse and composting bins.



Community garden in bloom, photo courtesy of SYCEO

Other SYCEO programs and services include:

- Gardening and landscaping programs aimed at increasing self-sufficiency in the community while also acting to restore culturally important species in the area.
- Sustainable landscaping services for the SYBCI's Tribal Hall and Health Clinic that emphasize native and culturally important vegetation.
- Community workshops on sustainable landscaping and composting.
- Green waste collection from Tribal government operations
- Composting program aimed at reducing the Tribe's landfill contributions, and increases the self-sufficiency of the community.

The SYCEO's efforts promote a healthier, more diverse landscape by encouraging the proliferation of native plants and organic food cultivation.

## Waste Reduction

A major waste reduction initiative for the Tribe is the utilization of waste vegetable oil (WVO) as an alternative fuel. Waste vegetable oil discarded by the Casino's restaurants is utilized in the Chumash Biofuel Program, which is located on the reservation. WVO is processed and transformed into fuel on-site. Already, one SYCEO vehicle has been modified to run on processed WVO. Additionally, SYCEO provides assistance to community members who wish to modify their own diesel vehicles. As of early 2013, SYCEO has retrofitted four vehicles to run on vegetable oil and receive fuel from the Chumash Biofuel Program. The program continues to seek additional participants and increase its collection of WVO produced by tribally-owned restaurants.



Cooking oil from the Casino and other tribal business is being utilized for biofuel, photo courtesy of SYCEO

There are additional efforts to reduce waste, including the Zero Waste initiative at tribal events. To reduce the amount of garbage produced at tribal events such as Elder's Day and the Intertribal Pow Wow, the SYCEO has started dividing garbage into separate recycling, compost and trash bins. Thirty-eight events have used the Zero Waste model since it began in 2010, diverting more than half the waste generated by these events from the landfill and into recycling

and composting. In 2012 alone, the Zero Waste initiative diverted over 100 cubic yards of waste from landfill.

Waste reduction extends beyond diversion to assisting homeowners with the appropriate removal of household hazardous waste and e-waste disposal. SYCEO's residential and office e-waste efforts have resulted in the proper disposal of over 1,500 pounds of e-waste since 2010. Additionally, the SYCEO promotes awareness about community composting and recycling and organizes numerous clean-ups to remove trash from the reservation and local beaches.



Chumash Casino at night, photo courtesy of Chumash Casino Resort

## Green Casino Initiatives

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The Environmental Office has worked alongside the operations staff of the Chumash Casino and other commercial enterprises to develop green initiatives. These initiatives are varied, and range from increasing energy efficiency to adopting technologies that reduce waste. These efforts have not gone unnoticed; Santa Barbara County awarded the Chumash Casino Resort one of only five county-wide 2007 Green Awards, and the EPA awarded the Casino the Environmental Achievement Award in 2009. Furthermore, many Casino operations have been overhauled to reduce waste and environmental impacts. In 2009, SYCEO reported that close to 75% of the Casino's carbon footprint was a result of transportation and electricity use. In response, efforts have been concentrated on reducing energy use in the Casino and making transportation more efficient. The implementation of an employee and customer shuttle bus program eliminated 800,000 car trips in 2009, replacing them with only 66,000 bus trips. Ongoing fleet improvements involve investigating the feasibility of a compressed natural gas (CNG) station for fleet vehicles.

Efforts are also underway to transform the Casino's electricity, climate control and gas usage, which have reduced energy use in multiple ways. These efforts include:

- The Casino features a roof liner that reduces the amount of heat absorbed by the building, as well as insulation and outsulation to reduce the energy required to maintain the desired temperature within the building.
- The climate control system of the Casino features advanced controls that minimize the amount of energy used to maintain air quality (which is a major issue for a building in which smoking is allowed).
- 720 solar thermal collectors heat water and indoor Casino space and save the Casino 3,810 therms of gas annually.
- Heat from the kitchen grills is recycled to heat water. This is especially important given that a substantial amount of the electricity used by the Casino is directed toward heating water.
- The Casino has also implemented variable frequency drives that allow operators to run chillers and hot-tub pumps at lower speed when full use is not required to save energy.
- The Casino utilizes energy efficient LED lights throughout the Casino gaming floor and outdoor landscape.



Solar thermal collectors at the Chumash Casino

Reducing chemical waste and minimizing the amount of one-use materials at the Casino is also a major priority. Casino staff use cleaning supplies made from non-toxic chemicals whenever possible and replace traditional cleaners with Green Seal Certified cleaners. Furthermore, Casino staff has developed innovative cleaning methods that require less chemical use and reduce employee exposure to toxins, including developing an escalator cleaning machine that eliminated the need for staff to use respirators. This helps to reduce the amount of chemical exposure for employees and reduce the amount of chemicals released into the environment.

Water use is another major concern at the Casino. In response to this concern, the Casino has created an extensive rainwater and gray water collection and treatment system. Rainwater from the parking lot is filtered into the gray water treatment plant, reducing run-off. The water treatment plant takes water from the spa and hotel at the Casino and treats it for use in landscaping and non-potable plumbing. In early 2013, the Casino began recycling its treated waste water for use in its cooling towers, essentially eliminating the need to purchase/utilize municipal water and saving thousands of gallons of potable water per day.

These are all examples of the many efforts underway to minimize the Casino's carbon footprint and ensure that the Casino operates in as low-impact a manner as possible. This ongoing commitment to creating a green Casino is a major priority for the SYCEO in accomplishing their goal of energy efficiency on the reservation. The work toward greening the Chumash Casino is especially relevant because many of the initiatives they have undertaken have economic benefits, as well as a reduction in greenhouse gas emissions. This provides a model and economic incentive for other tribal and non-tribal businesses to implement similar changes.

## Moving Forward

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The development of strategic plans to ensure organized action within the community and promote positive change is an ongoing process. The strategic plans are modified at least twice annually, and will be extended as SYCEO develops longer term goals. By developing and executing a cohesive plan, SYCEO is positioning the Santa Ynez Chumash community to reduce their impact on the environment, prepare for the effects of climate change, promote a healthy local environment, and reduce greenhouse gas emissions.

SYCEO is growing and expanding its scope in the community and as a leader in the field of climate change adaptation and mitigation. By examining the outcomes of their projects and documenting results, SYCEO can help disseminate lessons learned and make other tribal groups and conservation organizations aware of resources and ideas to address climate change. Collaboration within the tribal community and between communities has been identified



Native plant restoration, photo courtesy of SYCEO

by the SYCEO as a necessary component to mitigate climate change. As awareness of climate change and its potential impacts on tribal lands and resources has grown, the SYCEO has recognized that action must be taken to promote energy efficiency and waste reduction throughout tribal programs and businesses and to restore ecosystem health. The significant efforts by the Santa Ynez Band of Chumash Indians to reduce tribal greenhouse gas emissions stem in part from a recognition that tribal actions will have an impact on climate change locally and globally.

## Resources

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Santa Ynez Band of Chumash Indians: <http://www.santaynezchumash.org/>

Santa Ynez Chumash Environmental Office: <http://www.syceo.org>

U.S. Environmental Protection Agency - Climate Showcase Communities Program:

<http://www.epa.gov/statelocalclimate/local/showcase/santaynez.html>

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### Tribal Climate Change Profile Project:

The University of Oregon and the USDA Forest Service Pacific Northwest Research Station are developing tribal climate change project profiles as a pathway to increasing knowledge among tribal and non-tribal organizations interested in learning about climate change mitigation and adaptation efforts.

Each profile is intended to illustrate innovative approaches to addressing climate change challenges and will describe the successes and lessons learned associated with planning and implementation. For more information about the initiative, visit: <http://tribalclimate.uoregon.edu/>.

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