



Laguna Beach Goat Vegetation Management Project

Full Mitigation Best Practice Story

Orange County, California



Laguna Beach, CA – Laguna Beach has been using goats as part of its fuel reduction and vegetation management program since the early 1990s. City Manager Ken Frank got the idea from a similar program in the San Francisco Bay area. The program was expanded after a wildfire burned across 14,000 acres, destroying or damaging 441 homes in the beach community in 1993.

Because of the climate, types of natural vegetation, and expansive wildlands in Southern California, including wildlands that reach into the city, there is an ongoing risk of wildfires. Fully aware of the risk, the Laguna Beach Fire Department is very proactive in vegetation management.

One of the best ways to control wildfires is to control the amount of fuel available to feed the flames. These areas can be difficult to reach by most vegetation management equipment due to the nature of the terrain – rocks, canyons, and steep inclines. The introduction of goat herds in these areas has proven to be an ideal solution to the problem.

In Laguna Beach, goats play a significant role in reducing ground fuel loads, with a few hand crews used in certain places. “The goats are very effective,” said Ray Lardie, Fire Prevention officer who coordinates the program for the City. “They can go where people can’t.”

In 1995, Laguna Beach applied for and received a grant from the FEMA Hazard Mitigation Grant Program (HMGP), which is administered by the Governor's Office of Emergency Services. FEMA's grant was \$396,000 and the city's share of costs for the expanded program was \$132,000. The FEMA grant funded the program for two years and the city has continued the effort ever since, at an annual cost of \$125,000.

The goats work exclusively on 11 fuel modification zones located on the outside edges of the city. Since California weather allows it, the goats work year-round and are moved from place-to-place as needed. Depending on the amount of rain and vegetation growth each year, as few as 75 and as many as 600 goats are used. A movable goat pen with electric fencing keeps the goats from wandering off and protects them from coyotes and other wild animals, said Lardie.

A number of states, including Nevada and Utah, use the same strategy to reduce fuels in their wildland urban interface areas. According to Utah State University, goats can be used for a variety of land management purposes, such as reducing the incidence of wildfire, rangeland improvement, riparian and watershed management, improving wildlife habitat, and reducing nutrient competition in tree plantations.

Fuel reduction by goat grazing is more widely accepted than chemical and mechanical alternatives because of its sustainability. Another added benefit to the program is the cost, which can be considerably lower than other methods available.

Environmental concerns are taken into consideration before the program can be implemented in each fuel modification area. A county permit is obtained and botanists study the area, flagging endangered species. Environmentally sensitive plants are fenced off to protect them from the goats.

“It's like a petting zoo around here. People bring their kids to see the goats all the time,” said Lardie, adding, “the majority of the community is very supportive of the program.”

Activity/Project Location

Geographical Area: **Single County in a State**

FEMA Region: **Region IX**

State: **California**

County: **Orange County**

City/Community: **Laguna Beach**

Key Activity/Project Information

Sector: **Public**

Hazard Type: **Fire; Wildfire**

Activity/Project Type: **Vegetation Management**

Activity/Project Start Date: **11/1993**

Activity/Project End Date: **Ongoing**

Funding Source: **Hazard Mitigation Grant Program (HMGP); Local Sources**

Funding Recipient: **Local Government**

Funding Recipient Name: **Laguna Beach**

Application/Project Number: **059-39178**

Activity/Project Economic Analysis

Cost: **\$396,000.00 (Actual)**

Activity/Project Disaster Information

Mitigation Resulted From Federal
Disaster? **Yes**

Federal Disaster #: **1005 , 10/28/1993**

Federal Disaster Year: **1993**

Value Tested By Disaster? **No**

Repetitive Loss Property? **No**

Reference URLs

Reference URL 1: <http://www.fema.gov/hazard/wildfire/index.shtm>

Reference URL 2: <http://www.lagunabeachcity.net/government/departments/fire/>

Main Points

- Laguna Beach has been using goats as part of its fuel reduction and vegetation management program since the early 1990s.
- The program was expanded after a wildfire burned across 14,000 acres, destroying or damaging 441 homes in the beach community in 1993.
- One of the best ways to control wildfires is to control the amount of fuel available to feed the flames.
- Difficult to reach areas include rocks, canyons, and steep inclines, and the introduction of goat herds in these areas has proven to be an ideal solution to the problem.
- The goats work exclusively on 11 fuel modification zones located on the outside edges of the city. Since California weather allows it, the goats work year-round and are moved from place-to-place as needed.
- Depending on the amount of rain and vegetation growth, as few as 75 and as many as 600 goats are used.
- A movable goat pen with electric fencing keeps the goats from wandering off and protects them from coyotes and other wild animals.
- Fuel reduction by goat grazing is more widely accepted than chemical and mechanical alternatives because of its sustainability.
- Another added benefit to the program is the cost, which can be considerably lower than other methods available.



Goats grazing on Bluebird Canyon slope in Laguna Beach.



Goats graze at Bluebird Canyon in Laguna Beach.



Goats feed on lower limbs and leaves of brush and trees