

Burn Area Recovery Task Force (BARTF) Report Los Angeles County Canyon Fire



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Executive Summary

The Canyon Fire burned approximately 4,300 acres within the Malibu Hills and encompassed portions of the City of Malibu, as well as unincorporated Los Angeles County lands and State lands to the north. The significant issues identified within this report are summarized as follows:

- The denuded slopes within the burn area represent a direct threat from mud flows to five residences, one office building and a research complex north of Pacific Coast Highway (PCH).
- A direct threat from post-fire debris flows and flooding will occur along Pacific Coast Highway (PCH), Malibu Canyon Road, and the densely developed central portion of downtown Malibu.
- Two endangered fish species, the southern steelhead trout (*Oncorhynchus mykiss*) and the tidewater goby (*Gobiidae*), and several archaeological sites have been identified.
- Removal of debris, cleaning of culverts, and erosion control measures may reduce the risk of flowing to public and private property.
- Funding for debris removal and erosion control measures may fall under purview of the Natural Resources Conservation Service (NRCS). Some debris removal and erosion control measures may also be eligible for reimbursement from FEMA's Public Assistance (PA) Program and California Disaster Assistance Act.

Purpose

This BARTF report presents a brief description and assessment of the Canyon Fire, one of several Southern California wildfires included in the Presidential Disaster Declaration DR-1731-CA. This report is intended to facilitate the effective use of available resources to address threats to public safety, public and private property, and infrastructure that may arise during the 2007 – 2008 winter rainy season due to denuded slopes, and the affiliated potential for flooding and debris flows.

The information was gathered for this report by state and federal Burned Area Emergency Response (BAER) reports, Post-Fire Hazard Awareness Maps, and meetings with various local, state, and federal officials.

Introduction

The Canyon Fire burned approximately 4,300 acres on the south flank of the Santa Monica Mountains. The major canyons drain to the south and transmit storm flows through the relatively densely developed portions of coastal Malibu. The affected watersheds (CalWater) include portions of the Corral Canyon, Monte Nido, Carbon Canyon and Los Flores Canyon watersheds. Burn intensities ranged from low to severe with a majority of the area characterized as moderate. Endangered species identified within the vicinity of the burn area include the southern steelhead trout (*Oncorhynchus mykiss*) along Malibu creek from Rindge Dam to the Ocean, and the tidewater goby (*Eucyclogobius newberryi*) in the Malibu Lagoon. Many of these proposed projects can be completed under emergency conditions or under the waiver process identified in State Executive Order (S-13-07). Projects that do not fall under these classifications would need to follow the regular permit process (see Environmental Permitting Requirements Appendix).

There are numerous archaeological sites located in the burn area. Identified historic sites include the Rindge dam located upstream in Malibu canyon, and the Adamson House located north of the Malibu Lagoon (for any cultural resource concerns refer to the Archaeological Appendix).

Values at risk include central Malibu and the Malibu Colony area. The area is located at the mouth of Malibu Canyon where increased, post fire, debris flow potential has been identified. Numerous residences, a commercial development, city hall and a fire station are located within the debris flow inundation hazard area. The culvert crossing at PCH and the Carbon Canyon drainage has been identified as a risk due to potential increased flood/debris flow risk and is adjacent to County Fire Station No. 70. The culvert crossing at Malibu Canyon Road, a major north south thoroughfare, and Winter Canyon is identified as a risk due to flooding potential due to a clogged culvert. Additional hazards include mudflow risks to five homes and to the Hughes Research Laboratory Complex.

The identified risks and related post-fire issues have been identified and listed according to watershed boundaries as follows:

Corral Canyon

Background

The burn area encompasses a relatively small portion of land in the canyons above Pepperdine University. The area is located within the southern portion of the watershed and primarily includes lands within the City of Malibu. The potential for increased risk for flooding and debris flows exist for the homes located downstream of the burn area. The densely populated community of Malibu Colony is within the debris flow hazard area and contains upwards of 160 homes.

- Approximately 160 homes and related city infrastructure in the Malibu Colony Community, located downstream of the fire area, appear to be at high risk due to debris flow.
- Outlet of storm drain pipe at Carbon Canyon Road and Winter Canyon is non-functional due to obstructions to flow.
- The endangered tidewater goby (*Eucyclogobius newberryi*) habitat is identified within the Malibu Lagoon.

Analysis

- Extremely high hazard to human life and property due to debris flows. Numerous homes and other infrastructure in the Malibu Colony area face damage or destruction in such an event.
- No emergency protective measures exist for the several homes in the burn area.
- Lack of maintenance for catchment basins, drop inlets and storm drains contribute to the hazard from debris flows.

Potential Emergency Protective Measures

- An extensive early warning system on downtown Malibu and within Malibu Canyon is needed to alert residents of potential life threatening floods and debris flows.
- Evaluate the feasibility of installing temporary diversion structures to reduce the threat from debris flows.
- Maintenance of and cleaning of any catchment basins, drop inlets or storm drains should be done on a priority/urgent basis.

Monte Nido

Background

The burn area includes the lower portions of this watershed and includes City of Malibu lands on the south, as well as State Park lands, and unincorporated County lands on the north. The northern and central portions of the burn area encompass a large portion of relatively undeveloped land with scattered rural residences. The southern portion of the burn area includes the relatively densely developed coastal areas within the City of Malibu. The potential for increased risk for mudflows exists in the homes located within the upland areas. Approximately 110 structures within the densely developed community of central Malibu are directly threatened by flooding and debris flows originating from the burn areas.

- Debris flows potentially threatens central Malibu and Malibu Colony.
- Endangered species are the southern steelhead trout (*Oncorhynchus mykiss*) from Rindge Dam to the ocean, and the tidewater goby (*Eucyclogobius newberryi*) in

- Malibu Lagoon. Steelhead habitat has been damaged due to lack of shade and increased sedimentation. No endangered plant species identified.
- The historic Rindge Dam is located within the fire perimeter, and the historic Adamson House is located downstream within the debris flow hazard zone.
 - Numerous archaeological sites are described in the BAER report within the burn area.

Analysis

- Extremely high hazard to human life and property due to debris flows down Malibu Creek canyon. City of Malibu City Hall, numerous homes (approximately 110) and other infrastructure face damage or destruction in such an event.
- No warning system exists presently for a debris flow event.

Potential Emergency Protective Measures

- An extensive early warning system on downtown Malibu and within Malibu Canyon is needed to alert residents of potential life threatening floods and debris flows.
- Evaluate the feasibility of installing temporary diversion structures to reduce the threat from debris flows.
- Maintenance of and cleaning of any catchment basins, drop inlets or storm drains should be done on a priority/urgent basis.

Carbon Canyon

Background

The fire burned almost the entire area within the watershed which includes primarily unincorporated county lands on the north, and City of Malibu land on the south. The burn area encompasses a large portion of relatively undeveloped land with scattered rural residences. The extreme southern portion of the burn area includes coastal developments within the City of Malibu. The potential for increased risk for mudflows exists for a number of homes located south of the burn area. A fire station at PCH and Carbon Canyon Road is at risk from debris flow resulting from clogging of the underlying culvert crossing under PCH.

- Debris flow potential threatens a Los Angeles County fire station and State Highway 1 (PCH) at the various culvert crossing points. One home and an office building also lie in the path of potential debris flow above PCH.
- Three homes in the burn area appear to be at risk in burn area from debris flow.
- Poorly maintained catchment basins and drop inlets are in the receiving end of potential debris flows.
- No endangered species issues.

- Numerous archaeological sites are described in the BAER report within the burn area.

Analysis

- No emergency protective measures exist for the several homes in the burn area.
- Lack of maintenance for catchment basins, drop inlets and storm drains contribute to the hazard from debris flows.

Potential Emergency Protective Measures

- Maintenance of any catchment basins, drop inlets, culverts and storm drains should be done on a priority basis.
- Evaluate the feasibility of installing temporary diversion structures to reduce the threat from debris flows.

Las Flores

Background

Within this watershed, the burn area was primarily limited isolated areas within the upper portions of the canyon. Fire affected a gently sloping upper hillside in the watershed, which is buffered by native vegetation below, so runoff erosion should be mitigated by unburned thick vegetation.

- No direct threats to life.

Analysis

- No direct threat to life

Potential Protective Measures

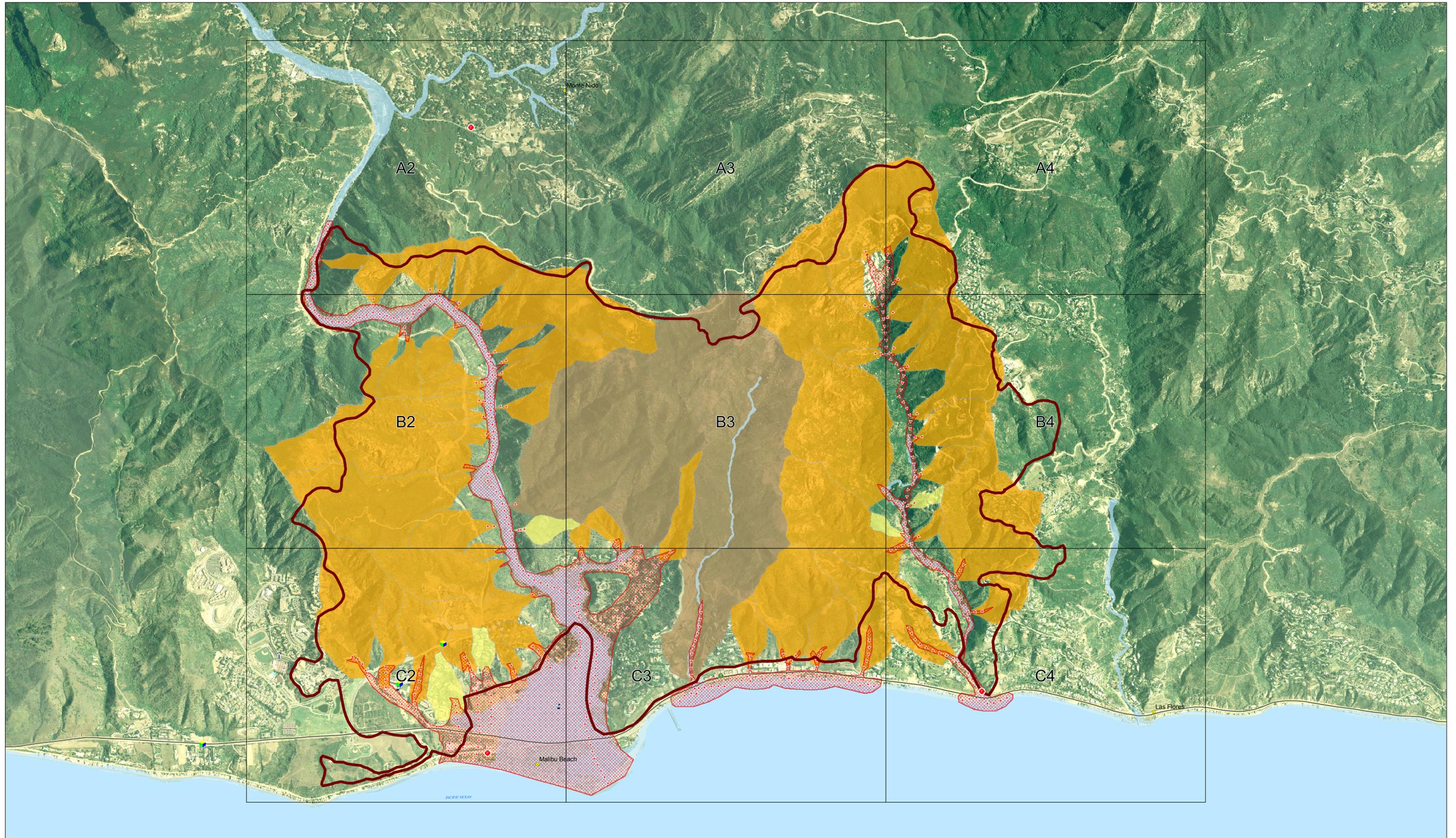
- No suggestions for this watershed.

Table 1 – Possible Funding Sources

Yes	No	Funding Sources
X		FEMA/OES Public Assistance Emergency Work (Cat A & B)
	X	FEMA/OES Public Assistance Permanent Work (Cat C-G)
	X	406 Hazard Mitigation
	X	404 Hazard Mitigation
X		Natural Resource Conservation Service (NRCS)
X		U.S. Fish & Wildlife Service
X		U.S. Army Corps of Engineers
X		National Marine Fisheries Service (NMFS)
	X	California Disaster Assistance Act
	X	Other funding:

Appendices

- Appendix A - Environmental Permitting Requirements
- Appendix B - Archaeological
- Appendix C - Descriptions of State and Federal Program Funding
- Appendix D - Preliminary Suggested Projects
- Appendix E - Biological

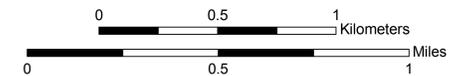
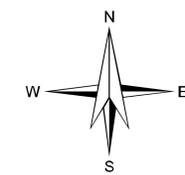
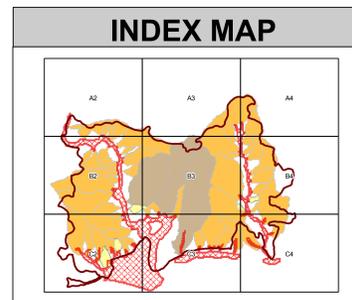


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LEGEND

- Populated Places
- Fire Station
- Civic Center
- Colleges Universities
- Daycare Facilities
- Schools
- Canyon Debris Flow Lines
- FEMA Flood Hazard Areas
- Fire Perimeters
- FEMA Potential Debris Flow Areas
- USGS Potential Debris Volume**
- 0-1,000 cubic meters
- 1,001 to 10,000 cubic meters
- 10,000 to 100,000 cubic meters



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MAPS FOR ADVISORY PURPOSES ONLY. NOT FOR INSURANCE RATING PURPOSES. For insurance rating purposes, please refer to the Flood Insurance Rate Map currently in effect. Debris flow information is PRELIMINARY. Debris flow volumes calculated in response to a 10 year recurrence based on 3 hour duration storm producing 2.25 inches of rainfall. Volumes based on a model currently being tested. Debris flow behavior is highly unpredictable and this map shows the best available information at the time of printing. Populations estimated using 2000 Census data and are calculated for those areas only within grid index.