

1. Introduction

- ◆ From October 25 to October 31, 2003, the largest recorded fire in California history burned 113,425 ha (280,278 acres) of San Diego County, California.
- ◆ Chaparral vegetation, a semi-arid shrubland found in southern California, was the predominant habitat affected by the fire.
- ◆ Understanding the impacts of this large scale disturbance are critical for conserving this biologically rich and increasingly threatened biome.
- ◆ No previous study has examined the impacts of fire on the carnivore community of southern California.

Figure 1. Set-up and successful outcome of A) motion sensor camera (Game-Vu) and B) gypsum track plots.



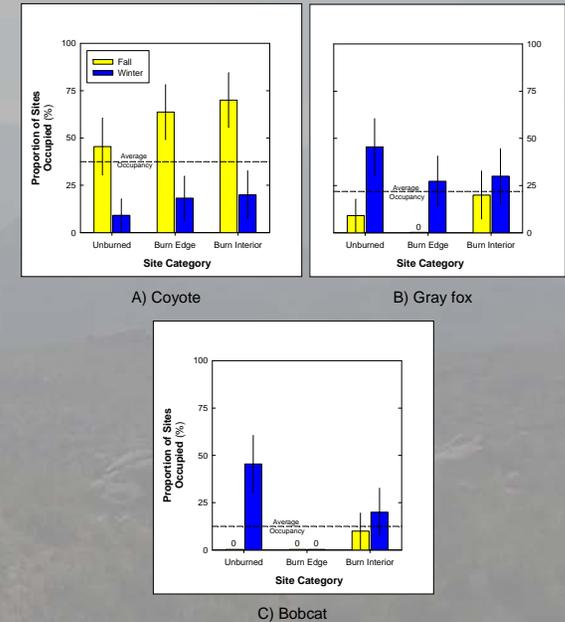
2. Study Area & Methods

- ◆ We surveyed carnivores in burned and unburned chaparral in Cleveland National Forest and Cuyamaca Rancho State Park in San Diego County, California.
- ◆ 32 sites were distributed among three categories: Burn edge (< 3.5 km from fire perimeter), Burn interior (> 4.0 km from fire perimeter), and Unburned in the 2003 fire.
- ◆ All sites were spaced 2 km apart. Each site consists of a motion sensor camera and 2, 1 m² gypsum track plots located 100 m from the camera (Figure 1). Animals are lured with a scent (Carman's Pro-Choice) applied to a pipe cleaner on a 12 inch metal stake.
- ◆ Surveys were conducted 3 times per year in late summer (Aug-Sep), winter (Jan), and spring (May-Jun).

3. Results

- ◆ Species were recorded as Present (1) or Not-detected (0) at each site during each season. Data were analyzed using Chi-square 2-way tables.
- ◆ No significant difference was found in overall (coyote, gray fox, and bobcat) carnivore activity between burn edge, burn interior, and unburned areas or between seasons.
- ◆ Differences in coyote, gray fox, and bobcat activity were recorded between fall and winter sessions.
- ◆ **Coyote:** Observed at 59.4% of sites in fall and 15.6% of sites in winter ($\chi^2 = 13.07$, $d.f. = 1$, $P < 0.001$; Figure 2).
- ◆ **Gray fox:** Observed at 9.4% of sites in fall and 34.4% in winter ($\chi^2 = 5.85$, $d.f. = 1$, $P = 0.016$; Figure 2).
- ◆ **Bobcat:** Observed at 3.1% of sites in fall and 21.9% in winter ($\chi^2 = 5.14$, $d.f. = 1$, $P = 0.023$; Figure 2), but data is sparse.

Figure 2. Proportion of sites occupied by A) coyote, B) gray fox, and C) bobcat.



4. Discussion

- ◆ We have found no significant difference in carnivore activity among burn edge, burn interior, and unburned sites.
- ◆ These analyses currently only include data collected through our cameras. Track data will be incorporated and compared with camera data.
- ◆ Over 200 hair samples have been collected and will be used to confirm unclear tracks and pictures and preserved for future DNA analyses.
- ◆ Cameras have not detected bobcats at any burn edge sites. Many burn edge sites overlap the edge of San Diego's suburbs.