Vegetation Mapping at the Wildland Urban Interface to Develop Fuel Reduction Approaches: Case Study from Oakland, CA

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Introduction

Fire in the wildland urban interface is an increasingly present danger, and communities across California are planning for wildfire risk reduction. As part of a broader, multi-faceted approach to fire hazard reduction, the City of Oakland is developing a Vegetation Management Plan (VMP) to reduce the risk of catastrophic fire in the Oakland hills. To document existing biological conditions and to support predictive fire models, vegetation/habitats were recently mapped across more than 2,000 acres.

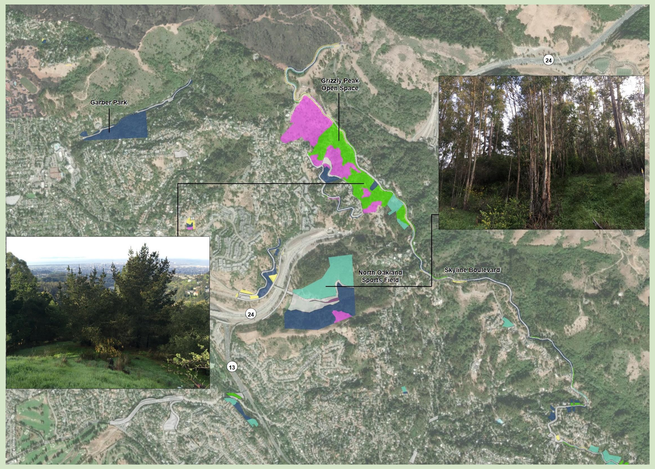
Methods

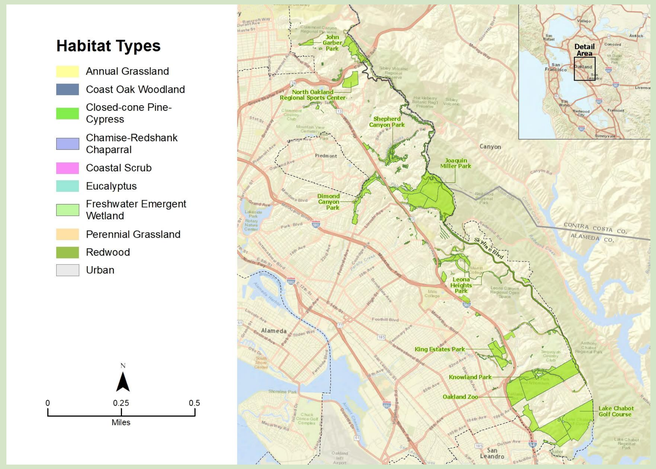
1. *Habitats were mapped using the California Wildlife Habitat Relationships (CWHR) System*
2. *Minimum mapping unit: 0.1 acre*
3. *Classification types entered into ArcGIS 10.3*
4. *Classifications made from a combination of field survey data and interpretation of aerial imagery*

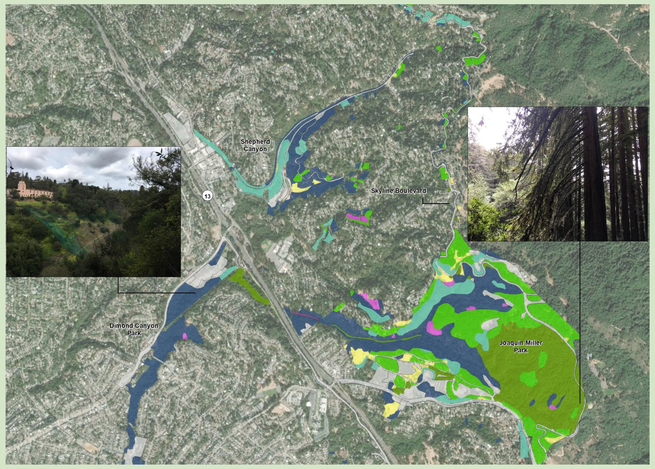
Results

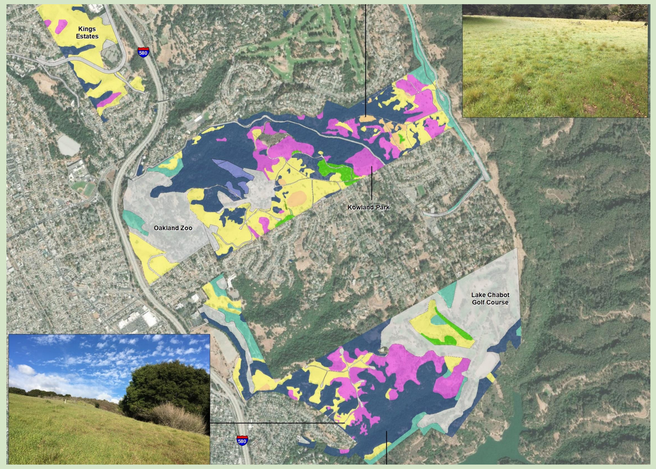
- 11 vegetation/habitat types mapped.
- 2,253 acres mapped
- Urban and coast oak woodland were the most common habitat types in the study area
- Freshwater emergent wetland was the least common habitat type

Results









Vegetation/Habitat Type	Acres	Percentage
Urban	655.2	29.08%
Coast Oak Woodland	628.7	27.91%
Annual Grassland	259.8	11.53%
Closed-cone Pine-Cypress	192.0	8.52%
Eucalyptus	175.3	7.78%
Coastal Scrub	170.2	7.55%
Redwood	141.4	6.28%
Perennial Grassland	11.6	0.52%
Valley/foothill Riparian	10.5	0.47%
Chamise-redshank Chaparral	8.1	0.36%
Freshwater Emergent Wetland	0.2	0.01%
Total	***2,253***	***100.0%***

Applications

- Vegetation maps were used as a basis to develop site-specific vegetation management and fuel reduction treatment approaches.
  - *One input into the FlamMap fire behavior GIS modeling*
  - *Vegetation management guidelines based upon vegetation type and associated fire risk*
- Maps have been an effective communication tool during public outreach.
- Received stakeholder feedback on:
  - *current conditions*
  - *proposed fire risk reduction treatments*
  - *Sensitive natural resources in the study area*
- Maps will also be used to analyze potential effects of the VMP through developing an Environmental Impact Report.

Lessons

- Accurate vegetation mapping built trust with stakeholders and facilitated public discussion regarding treatment options
- CWHR System is easy for the public to understand, but may not capture all special-status vegetation
- Stakeholders are particularly sensitive to mapping of eucalyptus and perennial grassland habitats.

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