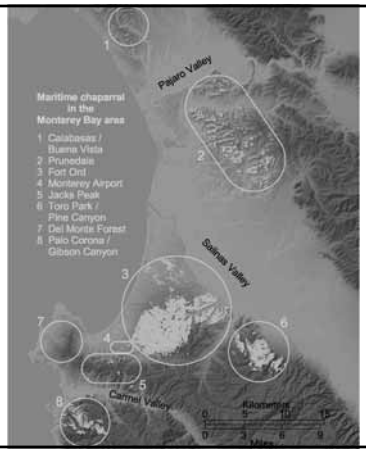
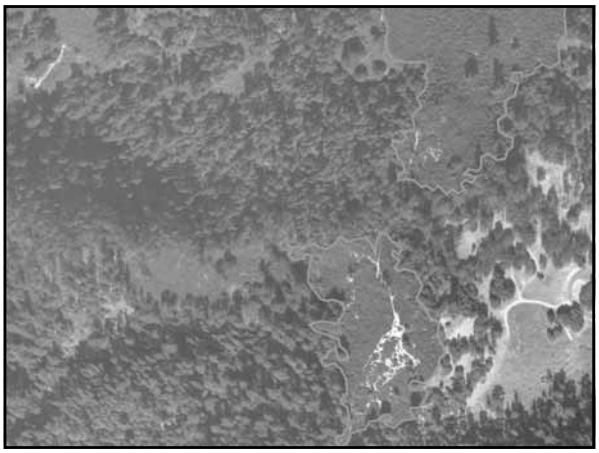
Maritime Chaparral in the Monterey Bay Area





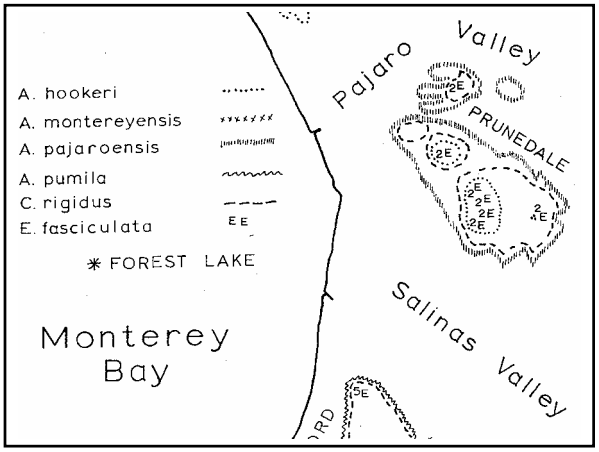
Monterey Bay Area
Maritime Chaparral Acreage

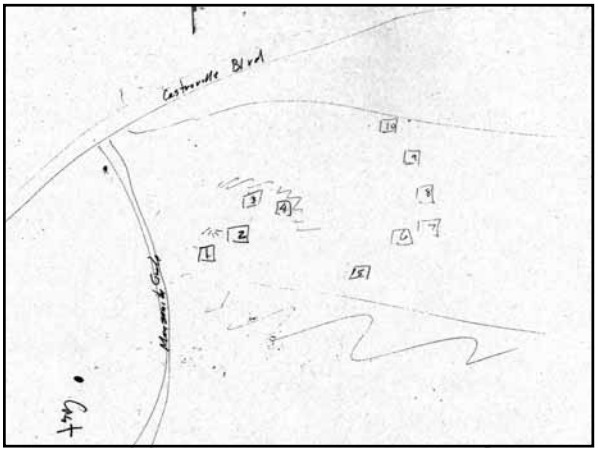
Calabasas/Buena Vista	54
Prunedale	2795
Fort Ord	11,049
Monterey Airport	25
Jacks Peak (excluding pine forest understory)	152
Del Monte Forest (excluding pine forest understory)	10
Palo Corona/Gibson Canyon	1078
Total maritime chaparral	**15,163**
Toro Park/Pine Canyon (inland chaparral)	2429

Monterey Bay Area
Maritime Chaparral Rare Plants

A. hookeri ssp. *hookeri*	Monterey Bay area
A. montereyensis	Fort Ord / Monterey Airport / Toro Park
A. pajaroensis	Prunedale hills
A. pumila	Fort Ord / Monterey Airport
Ceanothus cuneatus var. *rigidus*	Central coast
Chorizanthe pungens var. *pungens* (FT)	Monterey Bay area
Ericameria fasciculata	Monterey Bay area
Piperia yadonii (FE)	Prunedale / Del Monte Forest / Gibson Canyon

Maritime Chaparral Transition:
Prunedale Hills 1975-2000



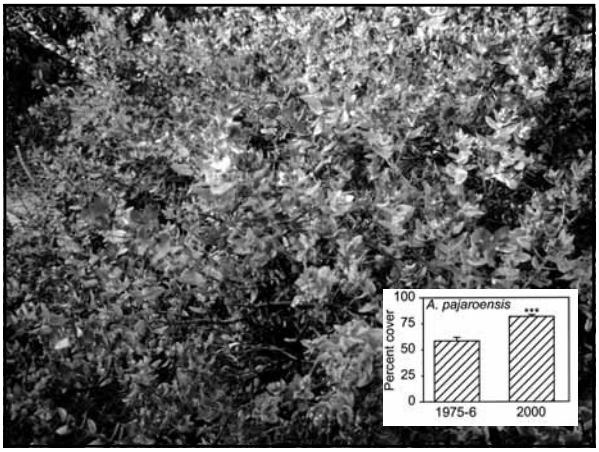


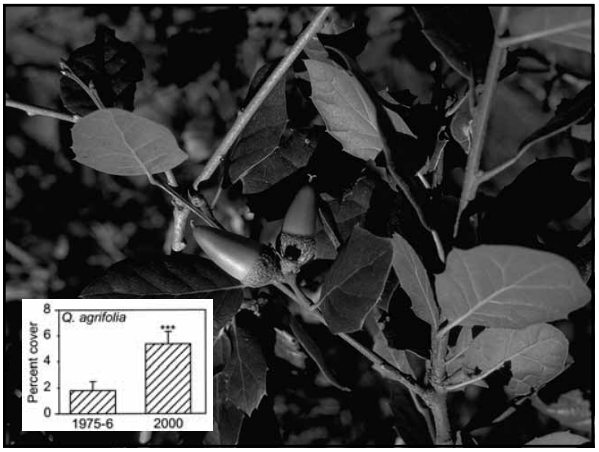
Results:
Tree and Shrub Layers

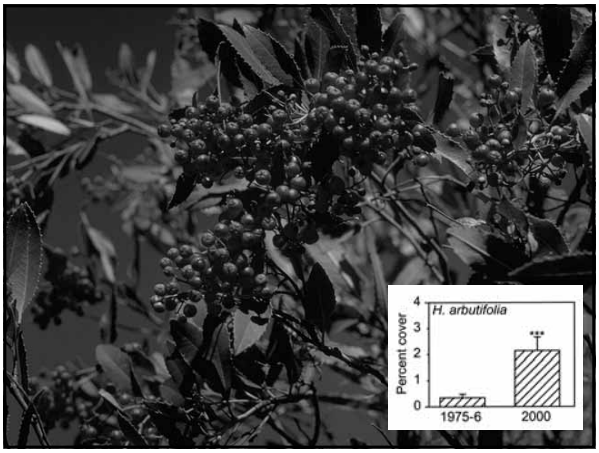
- Same species composition
- Same number of species per plot
- Higher percent cover (86% to 99%)
- Much higher *A. pajaroensis* cover
- Higher cover of taller trees/shrubs
- Lower cover of shorter shrubs

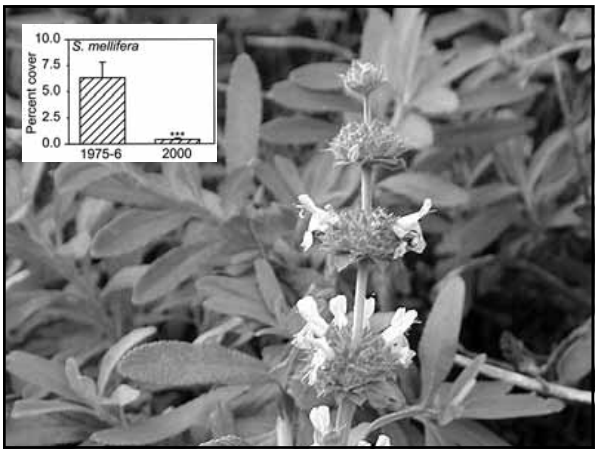
Results:
Herb Layer

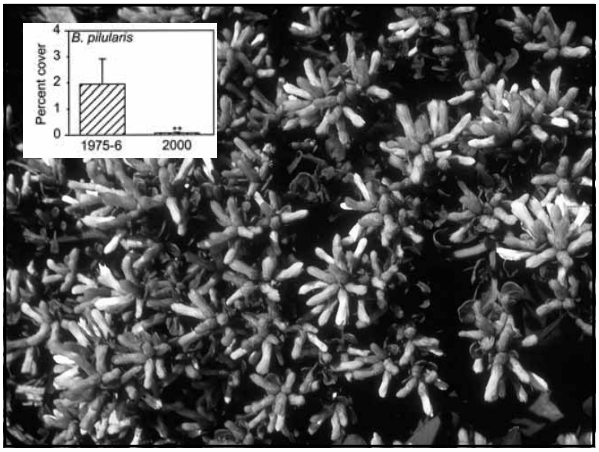
- Fewer species (27 to 18)
- Fewer species per plot
- Still no *Arctostaphylos* seedlings
- But many more *Q. agrifolia* seedlings
- Nothing but vines under tall canopy

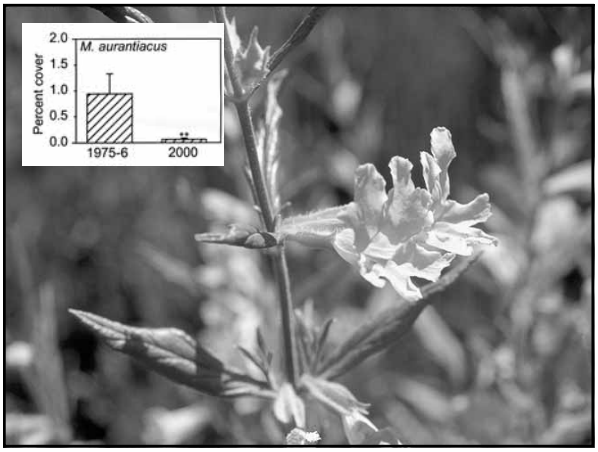


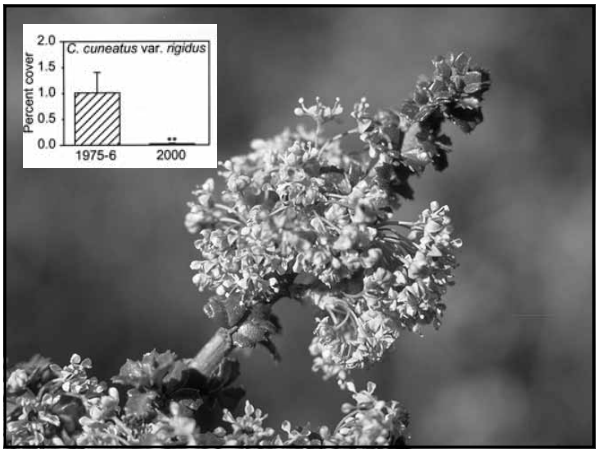




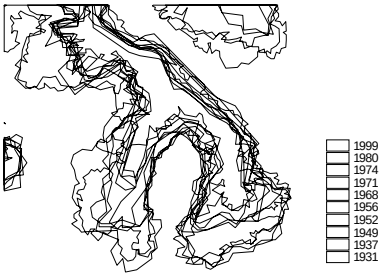

S. mellifera
Percent cover
10.0
7.5
5.0
2.5
0.0
***
1975-6
2000

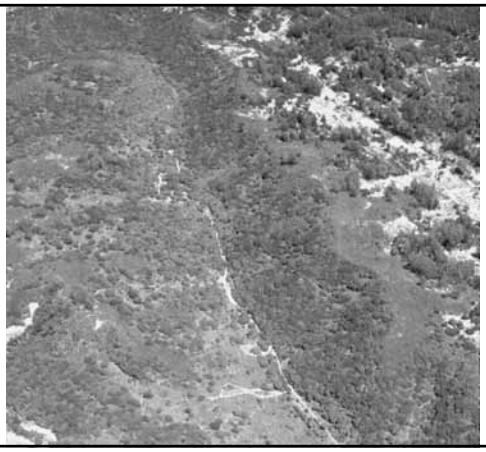

B. pilularis
Percent cover
4
3
2
1
0
**
1975-6
2000


M. aurantiacus
Percent cover
2.0
1.5
1.0
0.5
0.0
**
1975-6
2000


C. cuneatus var. rigidus
Percent cover
2.0
1.5
1.0
0.5
0.0
**
1975-6
2000

Maritime Chaparral Transition:
Long Valley 1931-1999

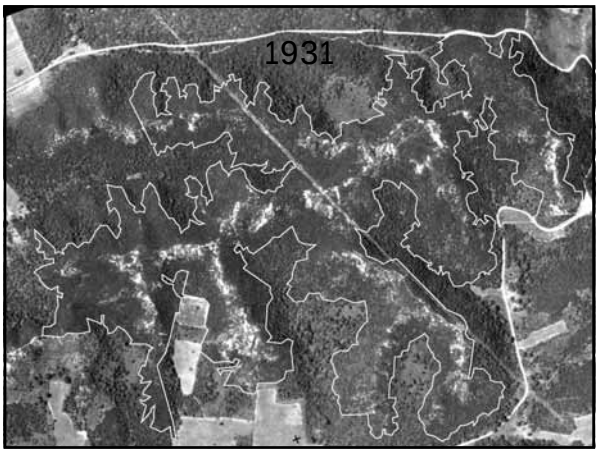


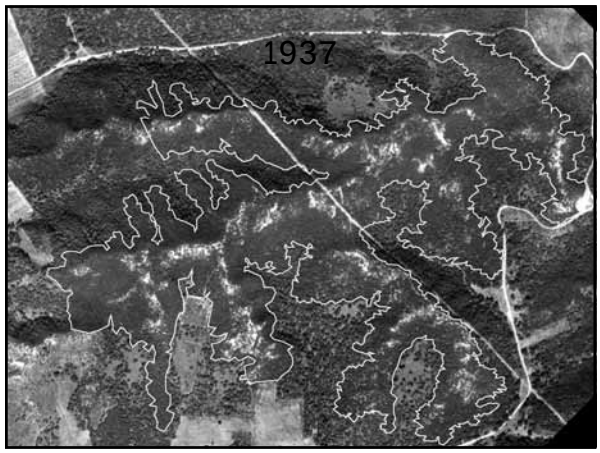


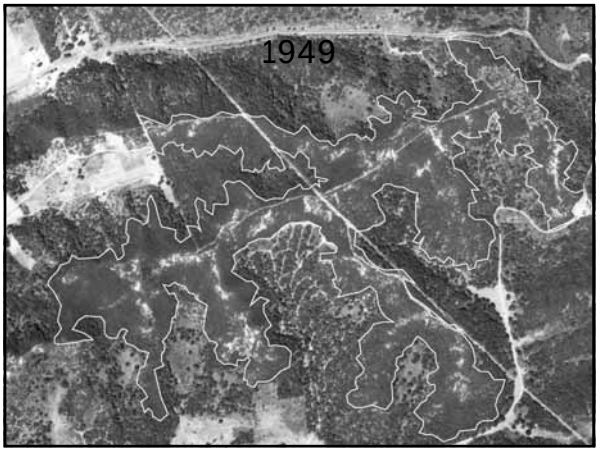
Aerial Photography

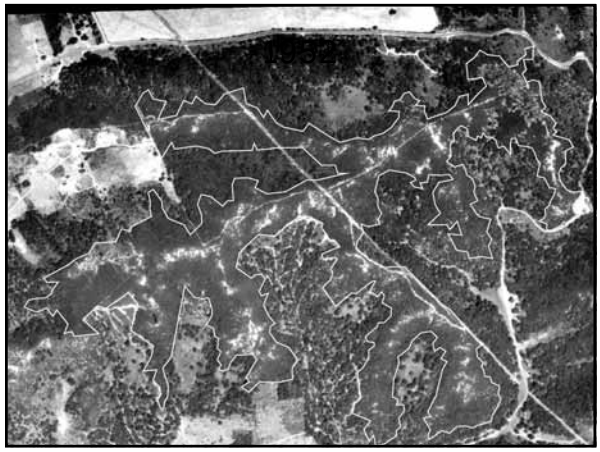
1931	B&W	1:19,000
1937	B&W	1:20,000
1939	B&W	1:20,000
1949	B&W	1:20,000
1952	B&W	1:23,600
1956	B&W	1:20,000
1968	B&W	1:20,000
1971	B&W	1:20,000
1974	Color IR	1:24,000
1980	Color IR	1:12,000
1999	B&W ortho	2'/pixel

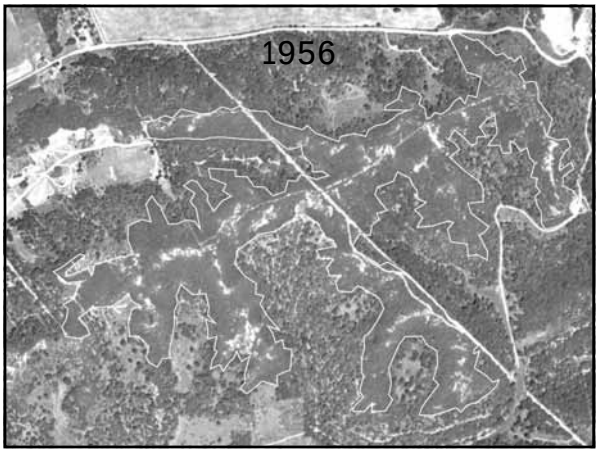
Image Analysis

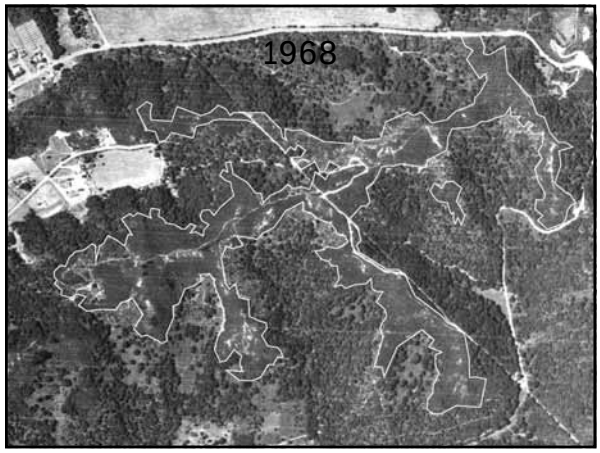

1931

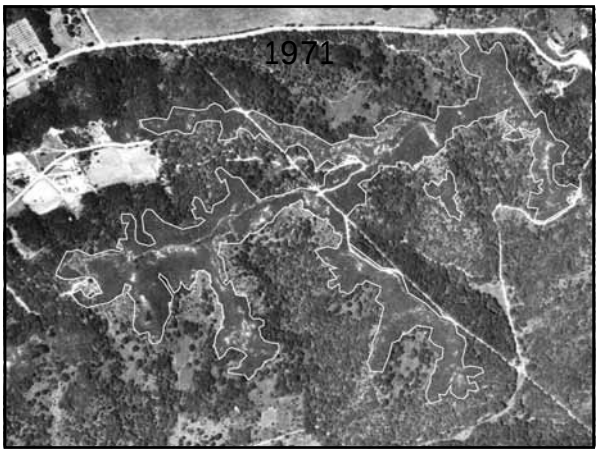

1937

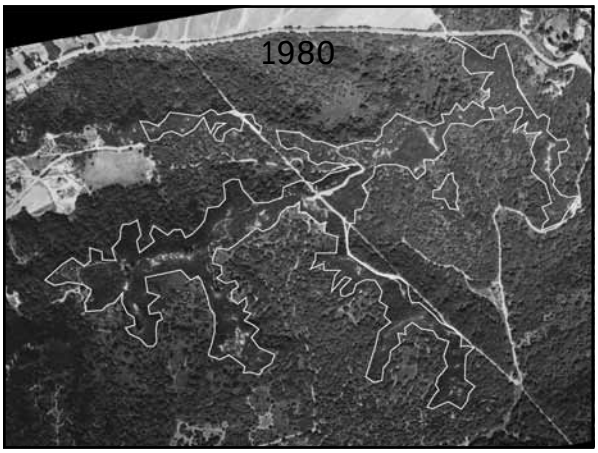

1949

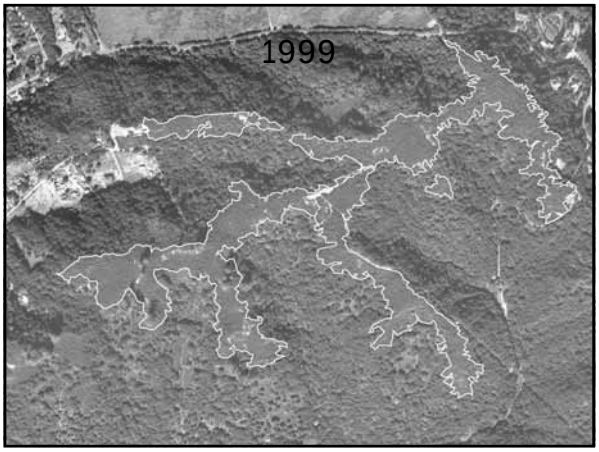



1956


1968

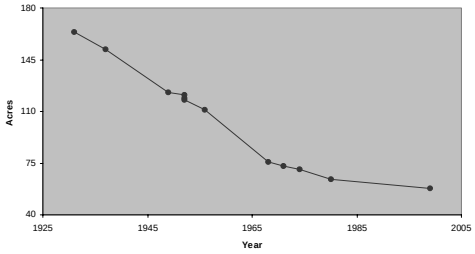




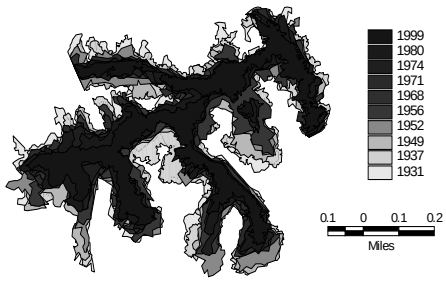


Results:

65% Chaparral Loss (~1%/yr)



Chaparral Transition



Future Directions:

Maritime Chaparral Research & Management

- Managing Fire Regimes in the Context of Other Human Impacts
  - Non-native Species
  - Habitat Fragmentation
  - Climate Change
- Managing Chaparral For Multiple Species
  - Not Just Shrubs

Future Directions:
Maritime Chaparral Management & Research

- Managing Disturbance Across the Landscape
  - No "Right" Management Regime
- Research Approaches
  - Replicated Experiments Testing a Range of Treatments
  - Meta-analysis