



TRADEOFFS IN MANAGING FOR MULTIPLE ECOSYSTEM SERVICES



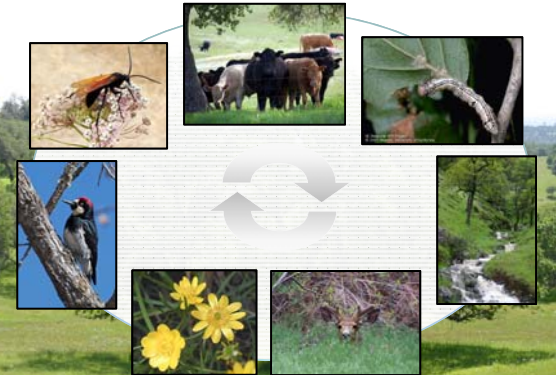
Leslie Roche
University of California, Davis

MULTIPLE ECOSYSTEM SERVICES

Hardwood rangelands: Largely privately owned
~ 16 million acres




MULTIPLE ECOSYSTEM SERVICES



WOODY 'WEEDS' & HOMOGENEOUS GRASSLAND LANDSCAPES

"Grass, not oaks, make your cows fat!" UCCE 1960s

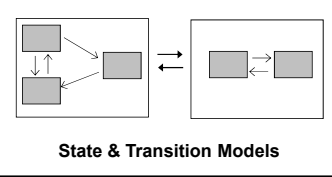


Brush Management
Goal: Forage production

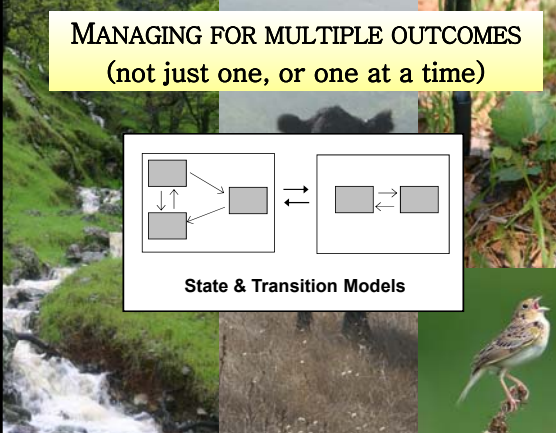
MANAGING FOR MULTIPLE OUTCOMES (not just one, or one at a time)

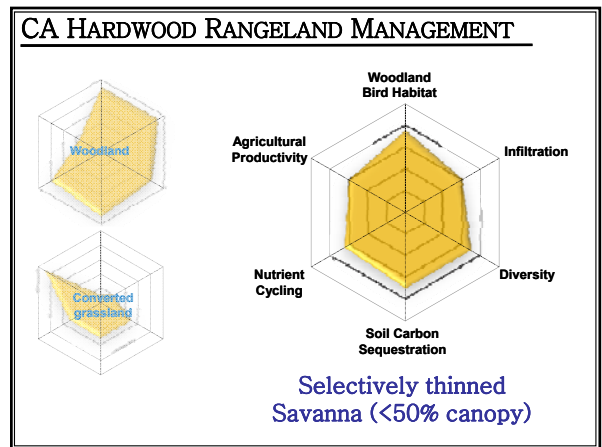
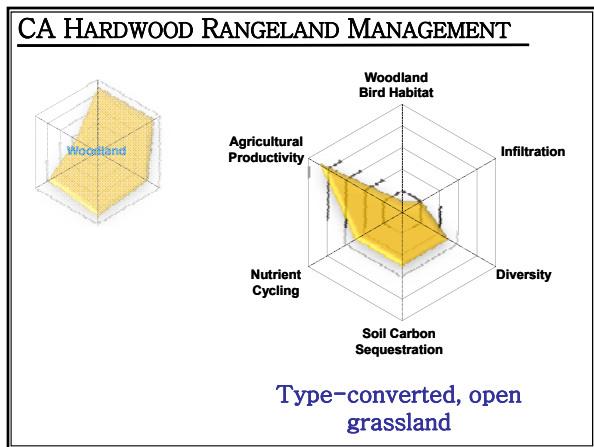
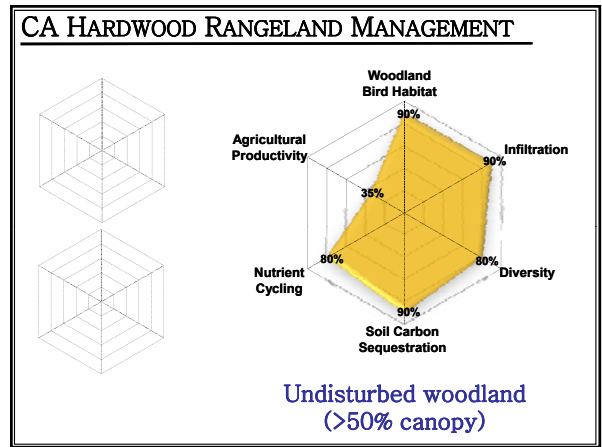
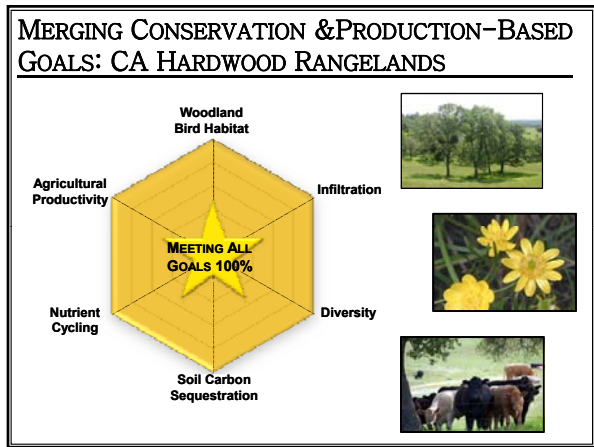
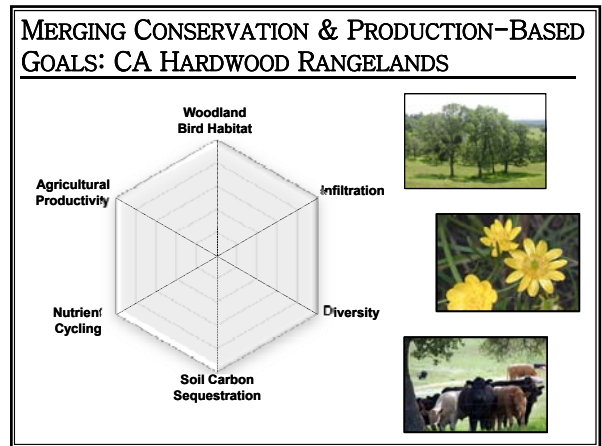
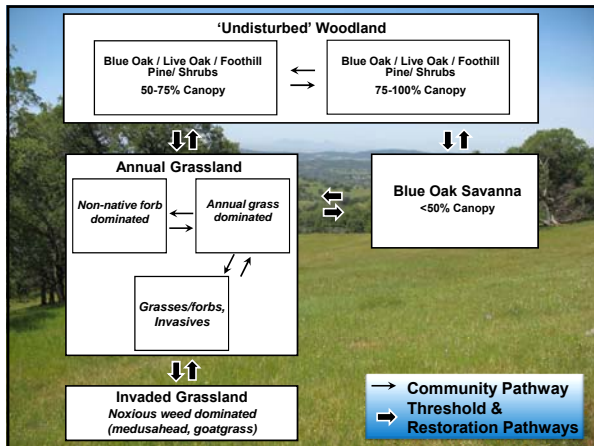


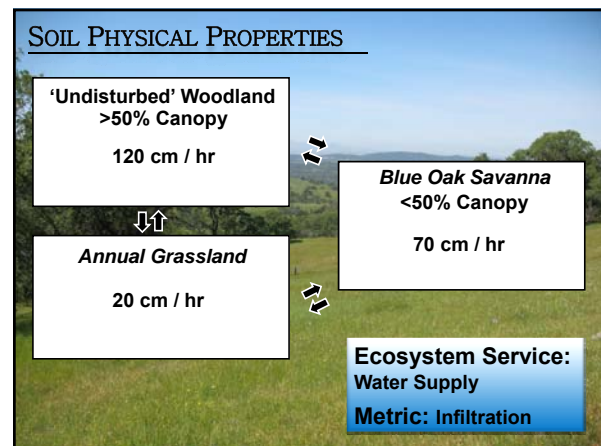
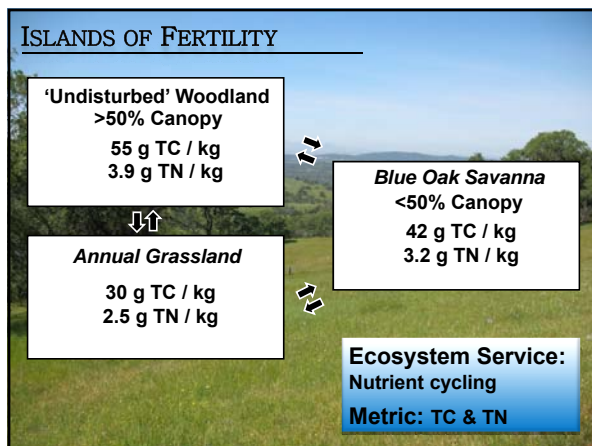
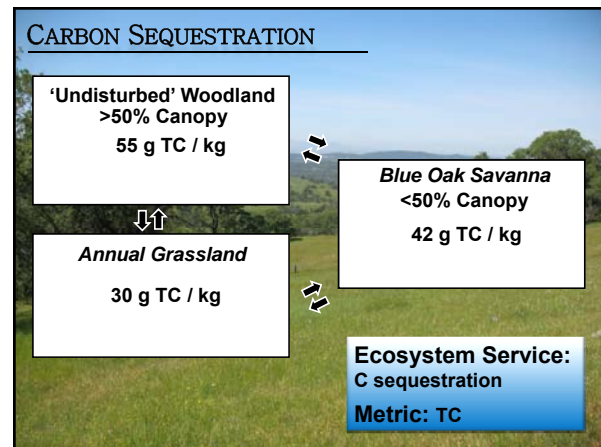
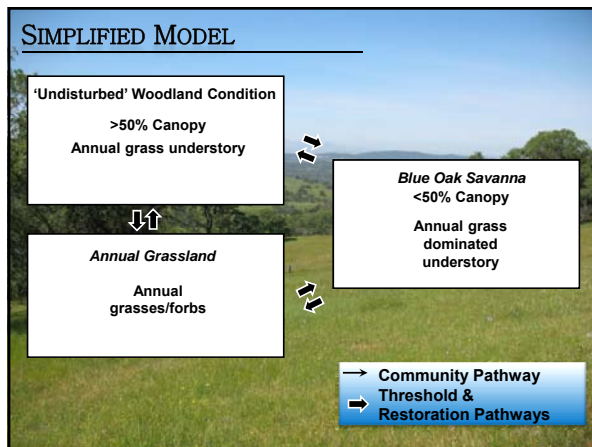
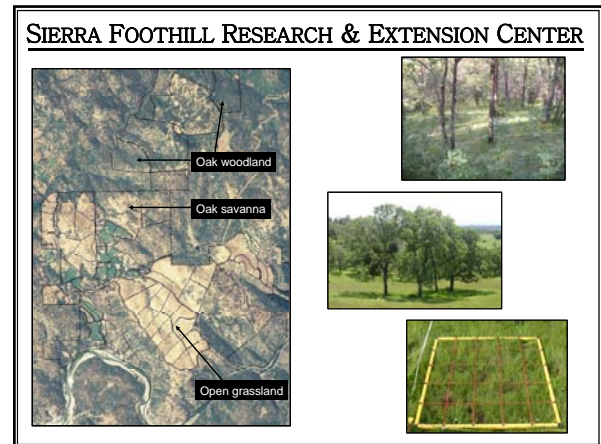
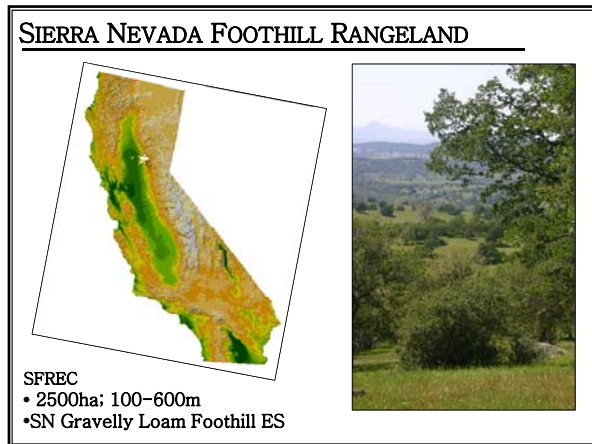
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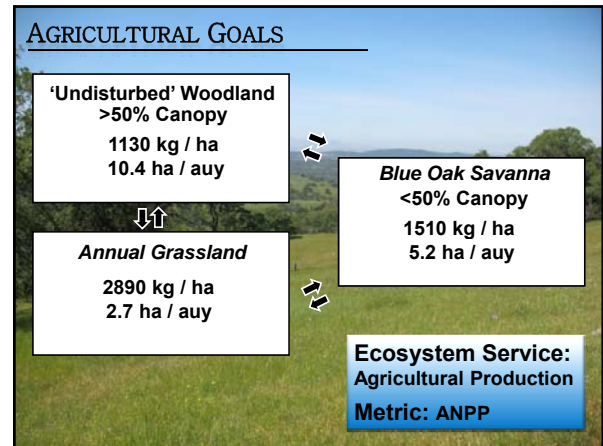
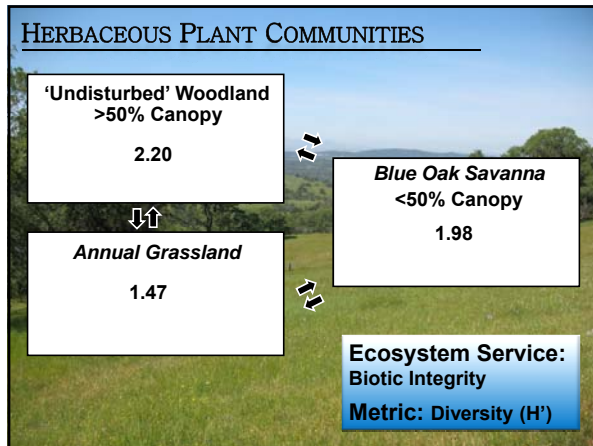


State & Transition Models



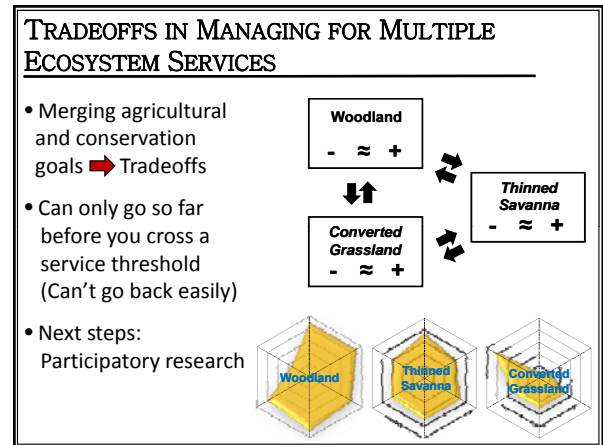






MERGING AGRICULTURAL & CONSERVATION GOALS

| Metric | Oak Woodland | Grassland |
|-------------------|--------------|------------|
| Total N | 3.6 g/kg | 2.5 g/kg |
| Total C | 48 g/kg | 30 g/kg |
| Infiltration | 95 cm/hr | 20 cm/hr |
| Diversity | 2.10 | 1.47 |
| Forage production | 1300 kg/ha | 2900 kg/ha |



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CALIFORNIA RANGELAND WATERSHED LABORATORY

UC DAVIS DEPARTMENT OF PLANT SCIENCES

Kearney Foundation of Soil Science