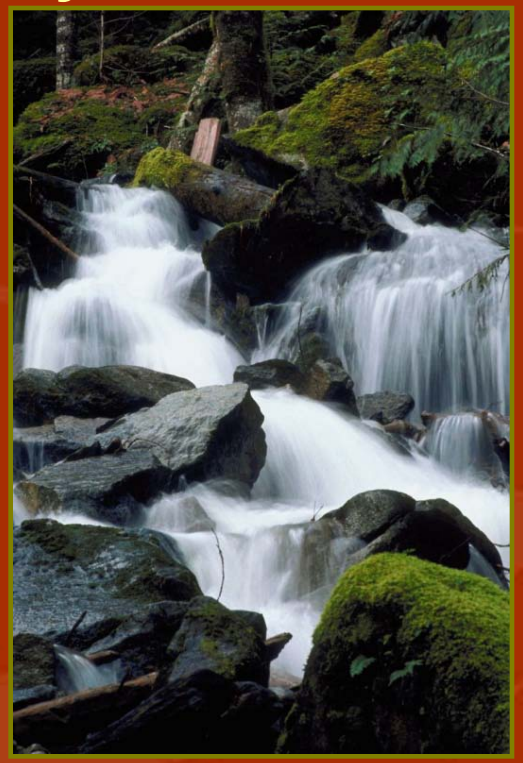
Conservation & Climate Adaptation

- Conservation role in climate adaptation
- Conservation in Sonoma County
- Upcoming analyses
- Data & other needs



Conservation & Climate Adaptation

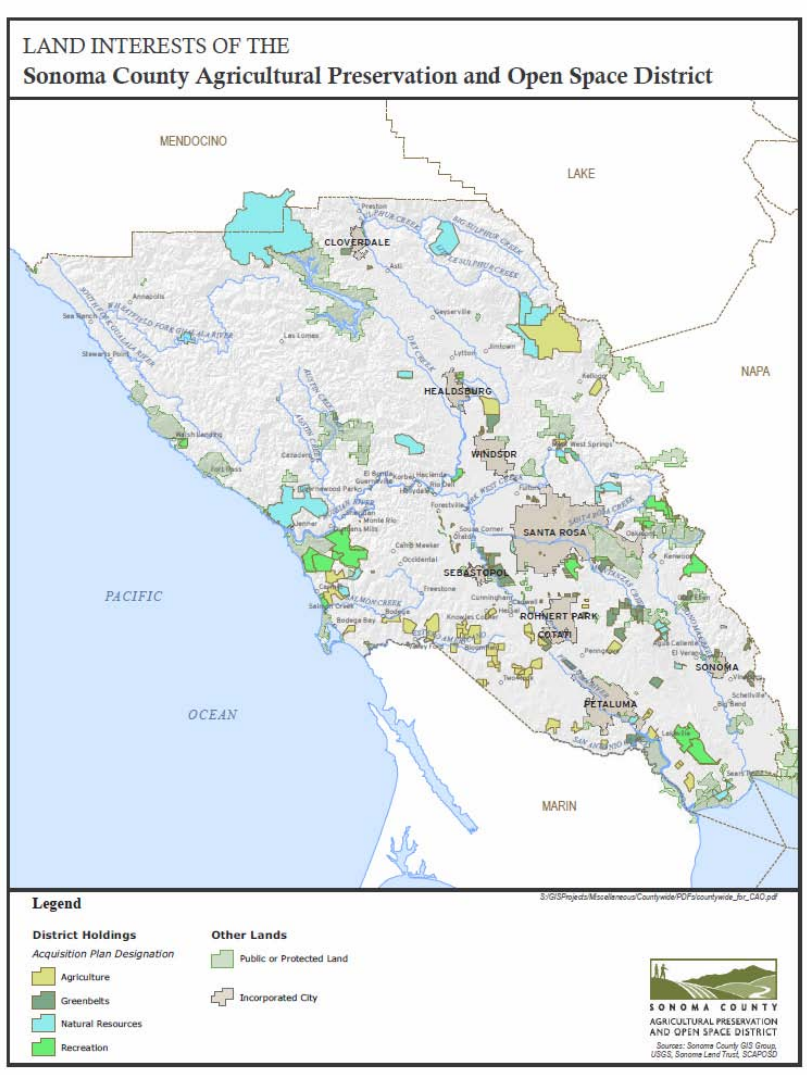
- Human well-being depends on intact "green infrastructure" (ecosystems/working landscapes):
  - Disaster resilient communities
  - Hazard mitigation
  - Services such as food, fiber, clean water, public health
- Cost-effective natural buffers against natural events and the impacts of climate change (prevention 7:1 more effective than response)
- Healthy and diverse landscapes are more resilient to extreme weather events.
- Ecosystem degradation reduces the ability of natural ecosystems to sequester carbon, increasing the impact of climate change

Multi-objective Approach to Climate Adaptation & Mitigation

- Conservation Based Adaptation
- Green Infrastructure: value appreciates
- Multiple benefits: public health, climate, biodiversity, clean drinking water, recreational tourism, flood control, wastewater
- Evaluate investments in an ecosystems services context

Conservation in Sonoma County

- District: 85,000 acres
  - Source watershed protection/biodiversity
  - Linked working landscapes
  - Habitat connectivity
  - Public access
- Sonoma County Water Agency, Regional Parks
- Corps of Engineers, BLM
- State Parks
- Sonoma Land Trust
- Pepperwood/LandPaths
- RCDs and private landowner conservation

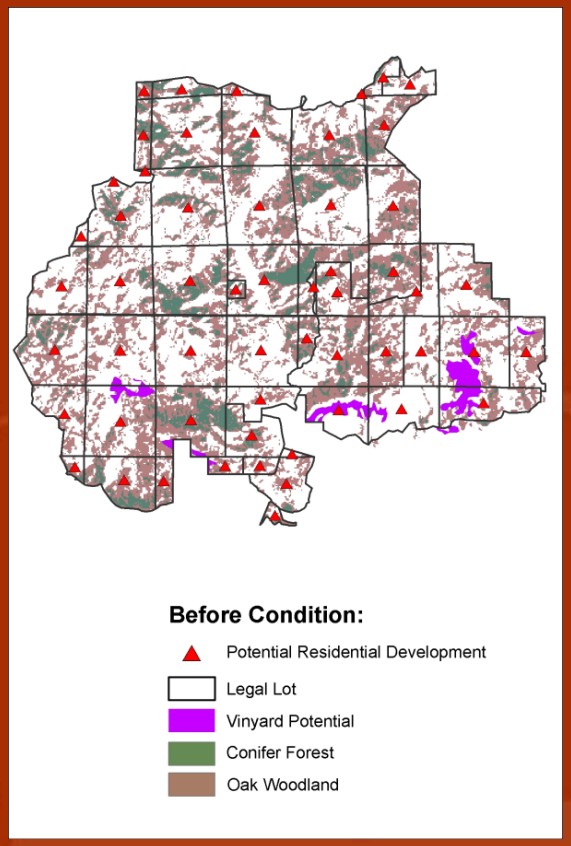


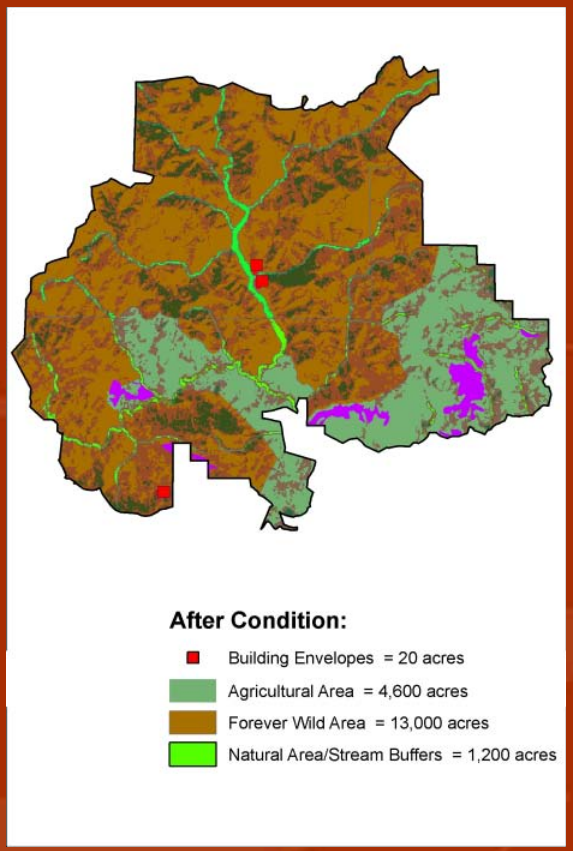
Local Example: Conservation & Climate Resiliency

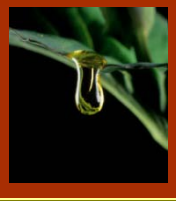
- Cooley Ranch easement:19,000 acres
- 17,000 acres grazed/1000 vineyard
- Protects ¼ of Lake Sonoma water supply
- 40 miles of sensitive riparian (protected from cattle/human impacts)
- Habitat connectivity/species movement
- Public outings

Conservation & Climate Resiliency

- Values:
- water supply
- flood control
- biodiversity
- carbon sequestration
- food security
- ag viability



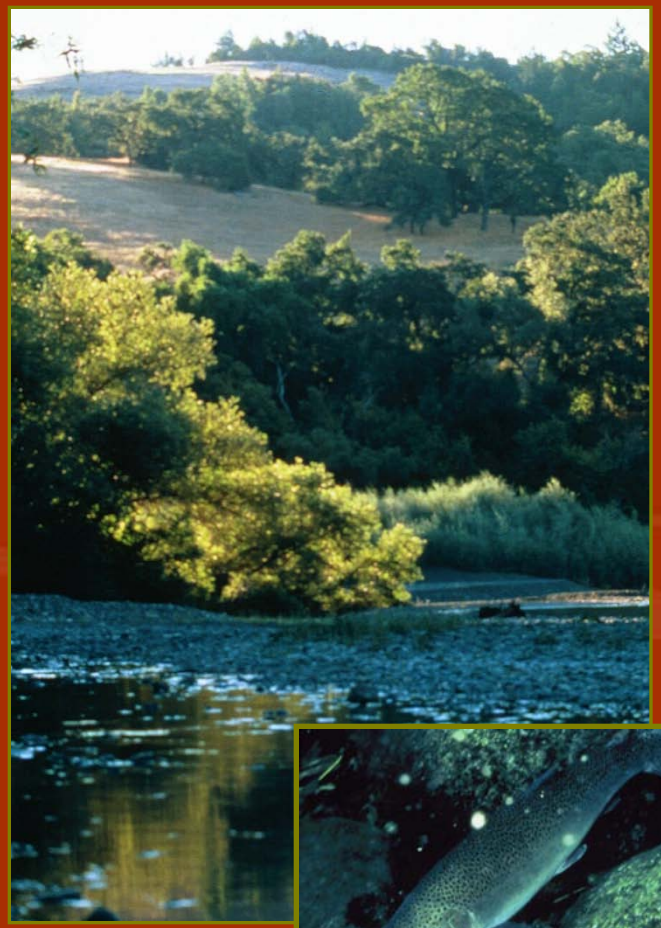




Mark West Watershed Case Study

Watershed Protection
+
Agricultural Preservation
+
Habitat Restoration

- Healthy Fish Populations
- Functional Green Infrastructure
  - Sustainable Water Supply
  - Land for recreation and learning
  - Climate Change
  - Flood attenuation



Upcoming Analyses

- Valuation of conservation
- Mapping/analysis of carbon sequestration potential
- Mapping/analysis of adaptation opportunities
- Fine scale vegetation and habitat map
- LiDAR (hopefully)

Data & Analysis Needs

- LiDAR and high resolution imagery
- Test assumptions re: green infrastructure
  - set up experimental frameworks
  - implement long term integrated ecological and economic analyses
  - evaluate return on investment/economic value of conservation
  - evaluate role of conservation in mitigating extreme events, helping communities and ecosystems adapt to climate change

Other Needs

- Funding partnerships for data development and analysis
- Emphasis on integrated planning and collaboration
- Capacity building
- Sustainable sources of funding for long term data development & analyses