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**Ecological Values of Conservation Practices & Investments:
PRBO Conservation Science's Rangeland Watershed Initiative**

Presentation to the 2nd California Rangeland Science Symposium
Wendell Gilgert January 24th, 2013

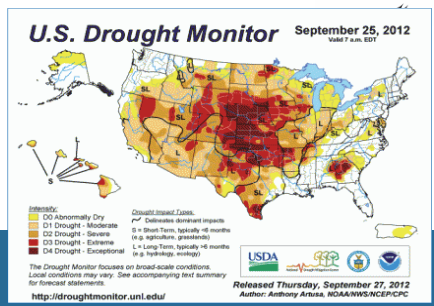
Advance conservation through biological system studies, education and partnerships

- Founded in 1965
- 140+ staff and seasonal biologists
- 2013 Budget: ~\$10m

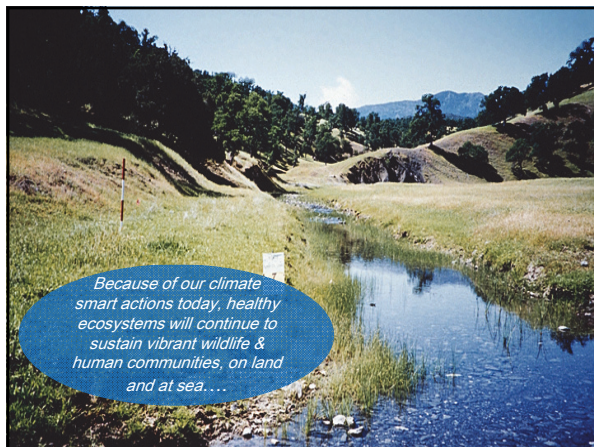

CLIMATE CHANGE

2012 epic drought 2/3 of country



U.S. Drought Monitor September 25, 2012
V4M7 a.m. EDT

Epic Dust Bowl of 2012 Expands Again Sep 30 2012



Because of our climate smart actions today, healthy ecosystems will continue to sustain vibrant wildlife & human communities, on land and at sea....


Acknowledgments



Anonymous (2)
Audubon California
Bay Area Ecosystems Climate Change Consortium
S.D. Bechtel, Jr. Foundation
Bernice Barbour Foundation
Barbara M. Richardson
Barbara M. Land Management
California Coastal Conservancy
California Department of Fish and Game
California Department of Water Resources
California Bay Delta Authority
California Landscape Conservation Cooperative
Central Valley Joint Venture
Faucett Family Foundation
Richard Grand Foundation
Marin Community Foundation
Giles Mead Foundation
Moore Family Foundation
David and Lucile Packard Foundation
National Park Service
National Science Foundation
NOAA National Marine Sanctuaries
Natural Resource Conservation Service
Resource Legacy Fund Foundation
San Francisco Foundation
San Francisco Bay Joint Venture
The Nature Conservancy
U.S. Fish and Wildlife Service
USDA Forest Service
USDA Natural Resources Conservation Service
US Geological Survey
and PRBO Board, Members and Staff

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2009 NABCI Report



Delivering Fish and Wildlife Conservation:
Building Farm Bill Capacity
NABCI Private Lands Subcommittee
August 2009

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2009 NABCI Private Lands Subcommittee Report

Biologists accelerate Fish and Wildlife conservation through Farm Bill programs by:

- Bringing specialized fish and wildlife knowledge and habitat management skills into conservation planning.
- Marketing the fish and wildlife aspects of the Farm Bill programs and benefits of practices to ranchers, farmers, and other private landowners.
- Facilitate timely implementation of planning, contracting, and practice implementation necessary to bring habitat projects to fruition.
- Being locally involved and maintaining landowner trust.



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PRBO Working Lands Programs

Wetlands (below 300 ft) – rice, riparian, etc.

- Sacramento Valley
- San Joaquin Valley
- Bay Delta

Watersheds (above 300 ft) – rangelands, forest, meadows

- Sacramento Valley
- Northern Sierra
- San Joaquin Valley
- Coast ranges



Sagebrush –

- Modoc Plateau

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Rangeland Watershed Initiative (RWI)

Goal:
Improve watershed by enhancing water retention on grazing lands and connecting with valley wetlands, with a focus on the foothills around the Central Valley.

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Rangeland Watershed Initiative: Vision

- Rangelands hold and store more water, release water more slowly throughout the year
- Watersheds linked to valley floor riparian and wetland habitats
- Increased groundwater recharge
- Ranchers and farmers active partners in eco-friendly management
- Ranching remains a viable enterprise
- Improved landscape resilience to predicted extension of dry season conditions



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Progress to date

- NRCS Bay Delta & Migratory Bird Initiatives: \$347k (\$170k for watersheds).
- Secured nearly 2.3 million dollars in private matching funds.
- Hired 5 Partner Biologists: Redding, Willows, Susanville, Grass Valley Mariposa (Feb 2013), who are already working with over 50 land owners
- Trained 24 PRBO and Audubon staff on NRCS planning and assessment techniques.
- Developing plans for a total of 21 Partner Biologists over the next 5 years (2012-16).

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On the Ground

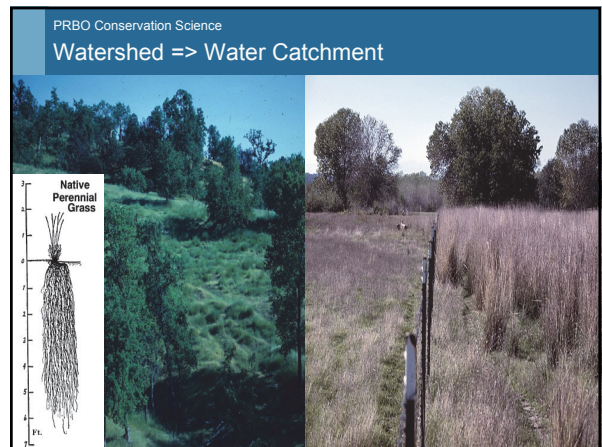
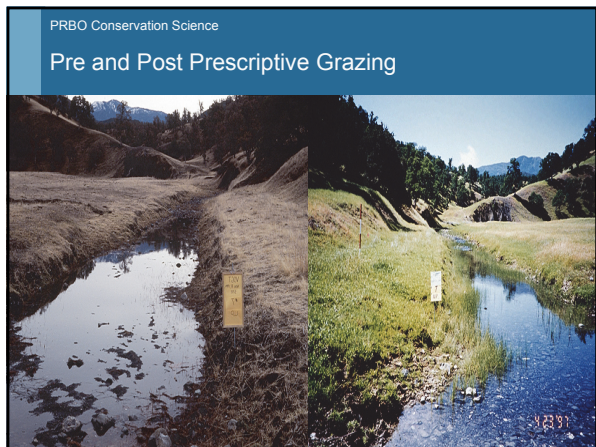
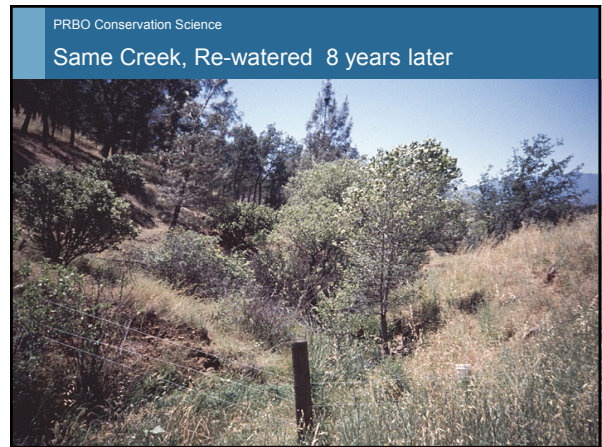
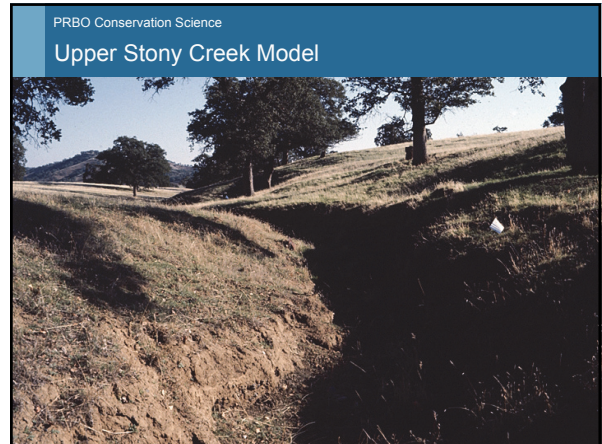
Alicia Young

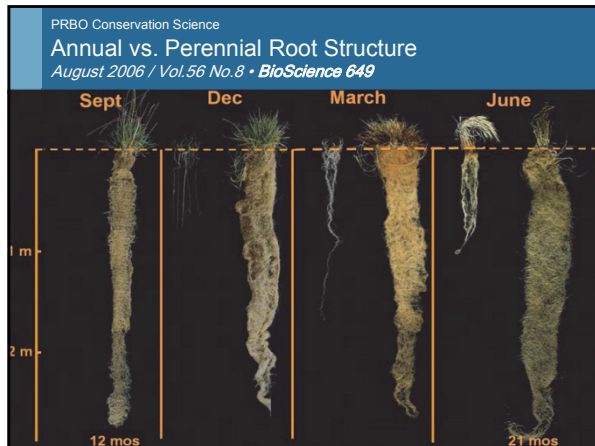
Melany Aten

Melissa Odell

Tiffany Russell

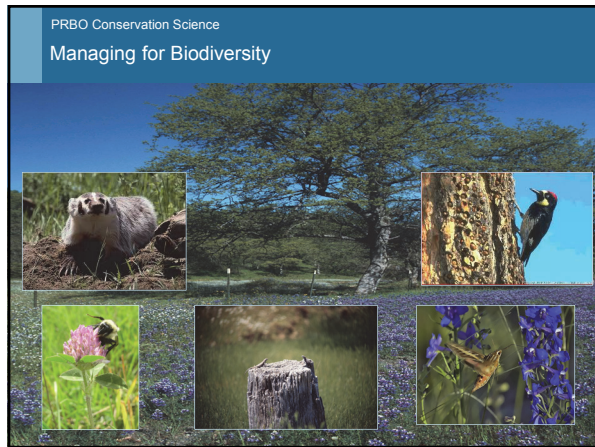
Kelly Weintraub





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Managing for Productivity

- Increased calving percent
- Improved calf health
- Animal thriftiness and weight gain
- Increase in biomass production:
 - ↑ forage availability
 - ↓ hay costs
 - ↓ water transportation costs
- Increase herd size



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Projected Outcomes

- 1) Enhanced soil, water and habitat values on 1.13 million acres.
- 2) Increased soil water storage by 15% to yield the equivalent of 2 Hetch Hetchy reservoirs in the subsequent 5 years.
- 3) Increased soil carbon sequestration capacity by 15%, an additional 1,130,000 tons of carbon sequestered per year going forward (8.4 million metric tons total after 10 years).
- 4) Leveraged Farm Bill habitat improvement funds.
- 5) Encourage 45 Leopoldian watershed land stewards.
- 6) Improved ranching operations for 110 ranchers.

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Research Support

UC Davis Rangeland Watershed Lab

Dr. Ken Tate

Dr. Leslie Roche

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Research Support

Benchmark and Implementation Metrics

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Field Metrics-Soils & Vegetation

Soil Characteristics:		Rangeland Vegetation:	
Soil bulk density	Soil samples	% cover of perennial species	Line-intercept transects
Soil organic matter	Soil samples	% cover of annual species (e.g., smooth brome, rye, fescue)	Line-intercept transects
Soil carbon	Soil samples	% cover of noxious/invasive weeds (e.g.,	Line-intercept transects
Soil infiltration	Soil samples		

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Hydrologic Characteristics

Stream Flow:		Visual survey of seepage wells	
Presence / absence of base flow on 1 st and 2 nd order streams (1 st of days, dated)	Photo-points, stream gauges		
Change in flow volume on sample dates	Line-intercept transects		
Stream macro-invertebrates (e.g., caddisflies, mayflies)			

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Biological Characteristics

Birds and Wildlife:	
Number of species detected	Point count surveys
Number of species breeding on site	Area search surveys
Stream macro-invertebrates (e.g., caddisflies, mayflies)	Line-intercept transects

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Leopoldian Land Stewards

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RWI-Spring 2013 Rancher Field Days

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THANK YOU!

Questions?