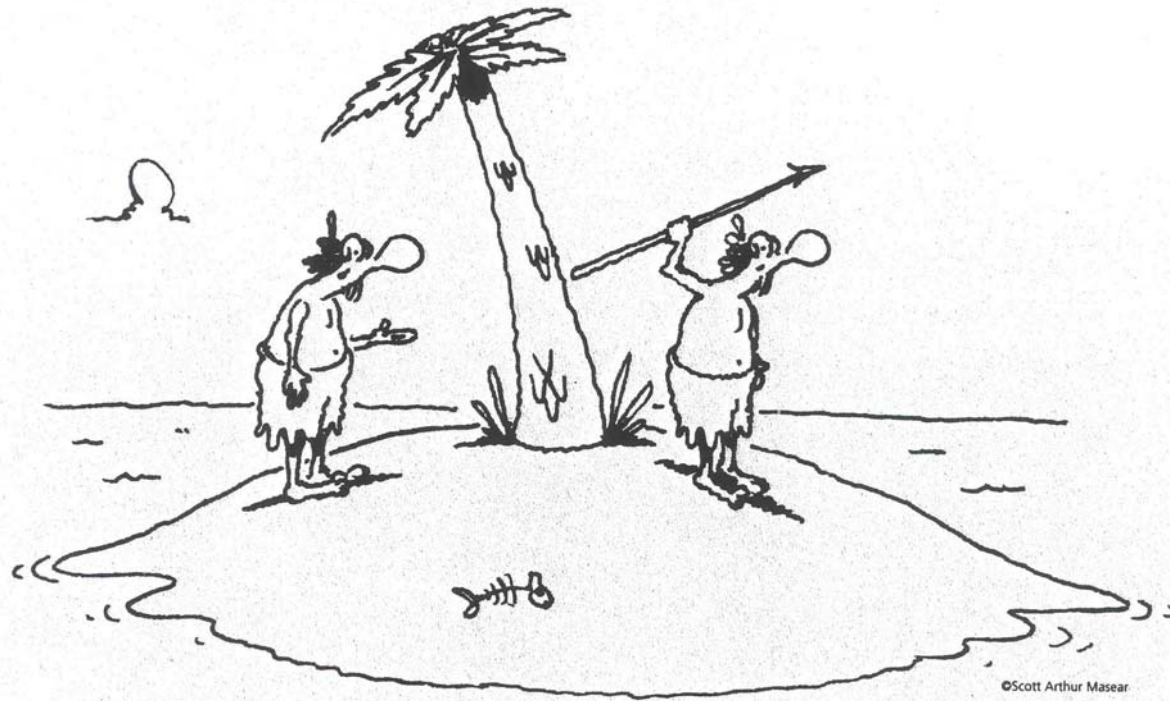


“Bread and Beauty Grow Best Together”

Richard L. Knight
Colorado State University



Indeed, if our military was in the shape agriculture is we'd be worried!!



"HOMELAND SECURITY IS THE LEAST OF OUR WORRIES, BILL."

Farmer's
markets

Localvore
movement

Organic
food

Grass-
finished
beef



Natural
food

Free range chicken

CSA

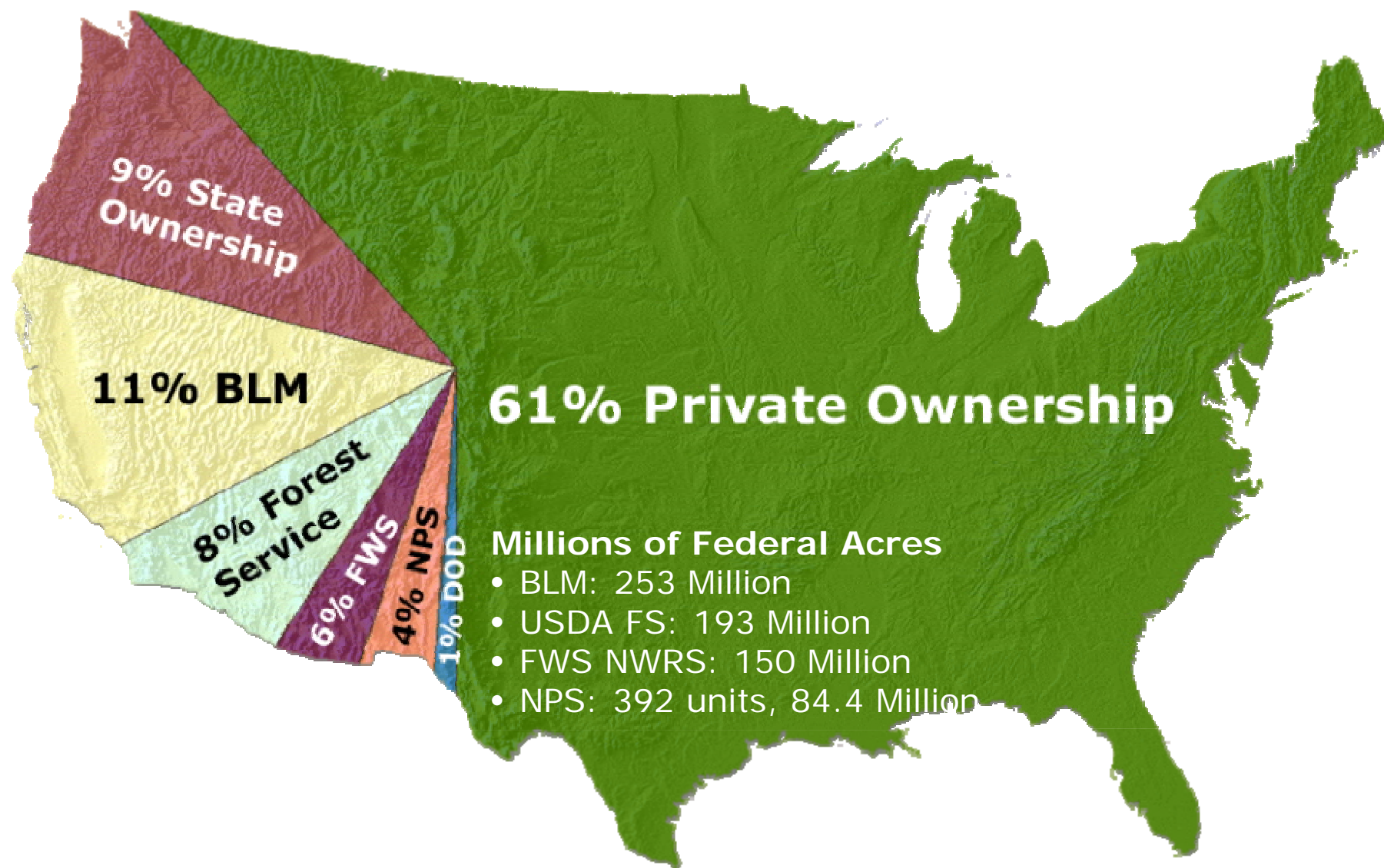
Local food

Cultures Matter

“As important a reason as any to support ranching, farming, irrigating, and logging is that our society will need them as teachers, mentors, and critics in the years to come.”

Wendell Berry

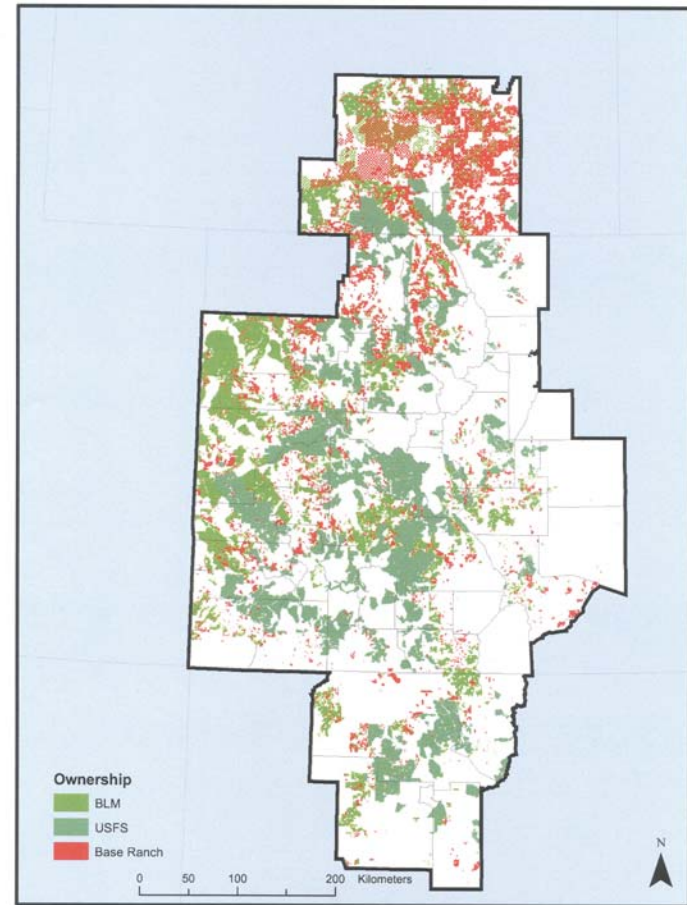




Private lands = Productive Lands

1. Soil
2. Water
3. Slope and elevation
4. Biodiversity

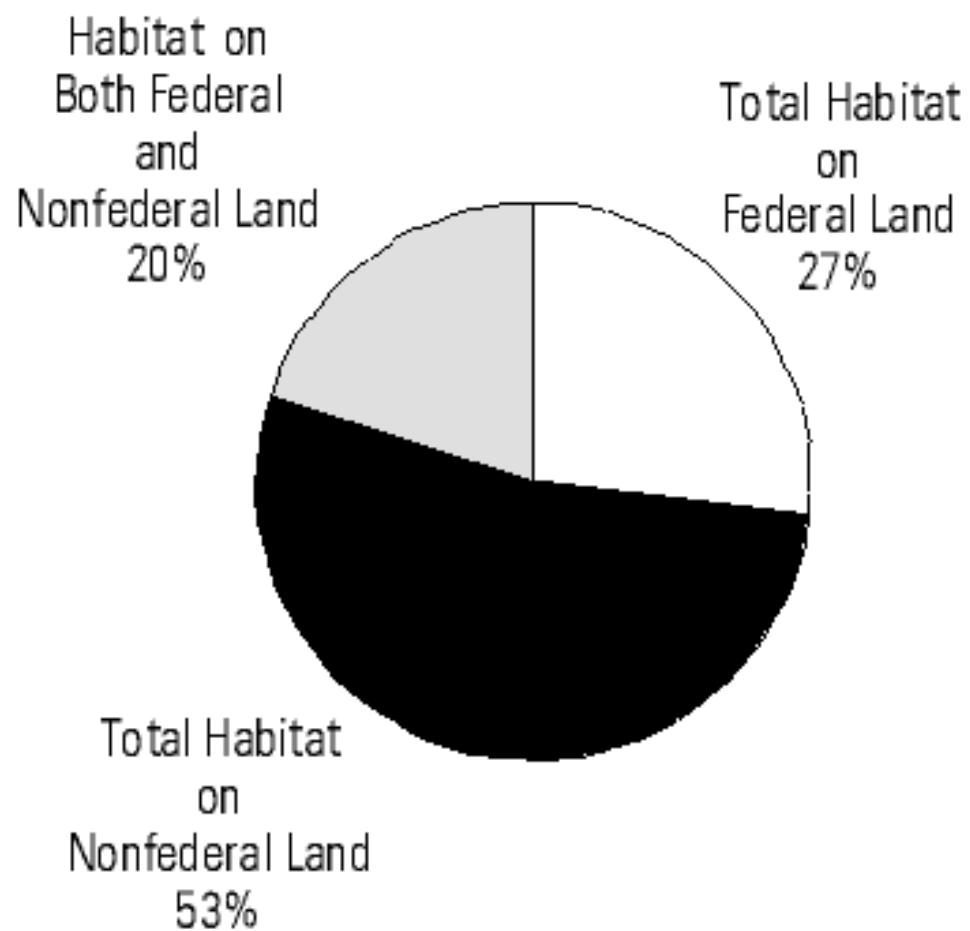
And significantly more spp.
of conservation value (Nat.
Heritage Programs)



Figures 3. Base ranches with associated USFS and BLM grazing allotments in the Southern Rockies

Talbert, C.B., R.L. Knight & J.E. Mitchell. 2007. Private ranchlands and public land grazing in the southern Rocky Mountains. *Rangelands* 29:5-8.

Figure 1 Habitat of Endangered Species



Private working lands make economic sense...

* For every \$1.00 of property taxes, exurban development requires \$1.65 county services/school costs. It's \$0.35 for lands in agriculture

(www.dare.agsci.colostate.edu/extension/pubs)

Consider 1,000 acres...

Agriculture

\$1,000 property taxes

\$350 county services

\$650 surplus

Exurban Development

\$10,000 property taxes

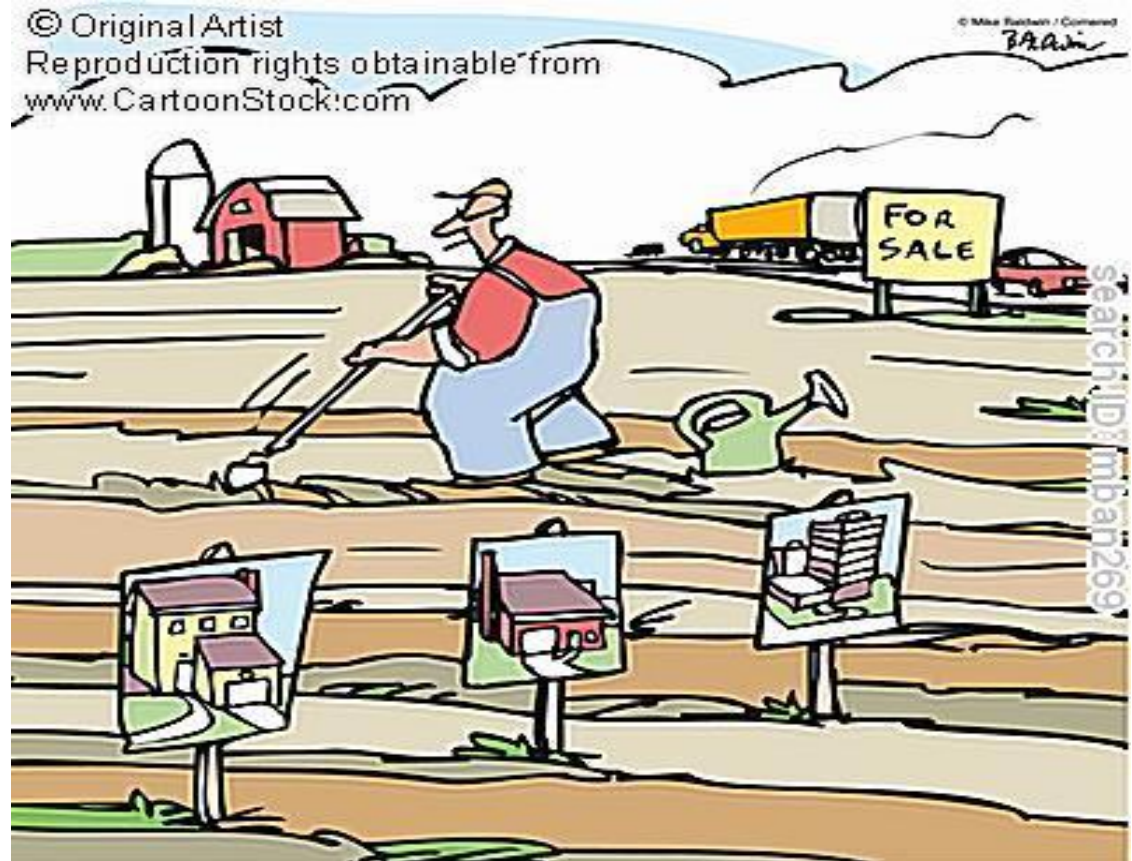
\$16,500 county services

\$6,500 deficit

**If it works economically, ecologically, and culturally
why do we lose so much private agricultural land
each year to sprawl?**

During the 1980s
we lost 1.4 million
acres/year

During the 1990s
we lost 3.2 million
acres/year



Working Wildlands

Ranchers Produce = Consumers Want

- Food
- Open Space

- Food
- Open Space



New revenue streams are needed to augment traditional agricultural economies...



to keep working lands in working hands!

The Public and Private Good

“The crux of the problem is that every land-owner is the custodian of two interests, the public interest and his own. What we need is a positive inducement or reward for the landowner who respects both interests in his land-practice...What should this reward be? What is a practical vehicle for it? These are the two basic questions in American conservation. An answer seems to require the collaboration of economists, jurists, regional planners, ecologists, and esthetes.”

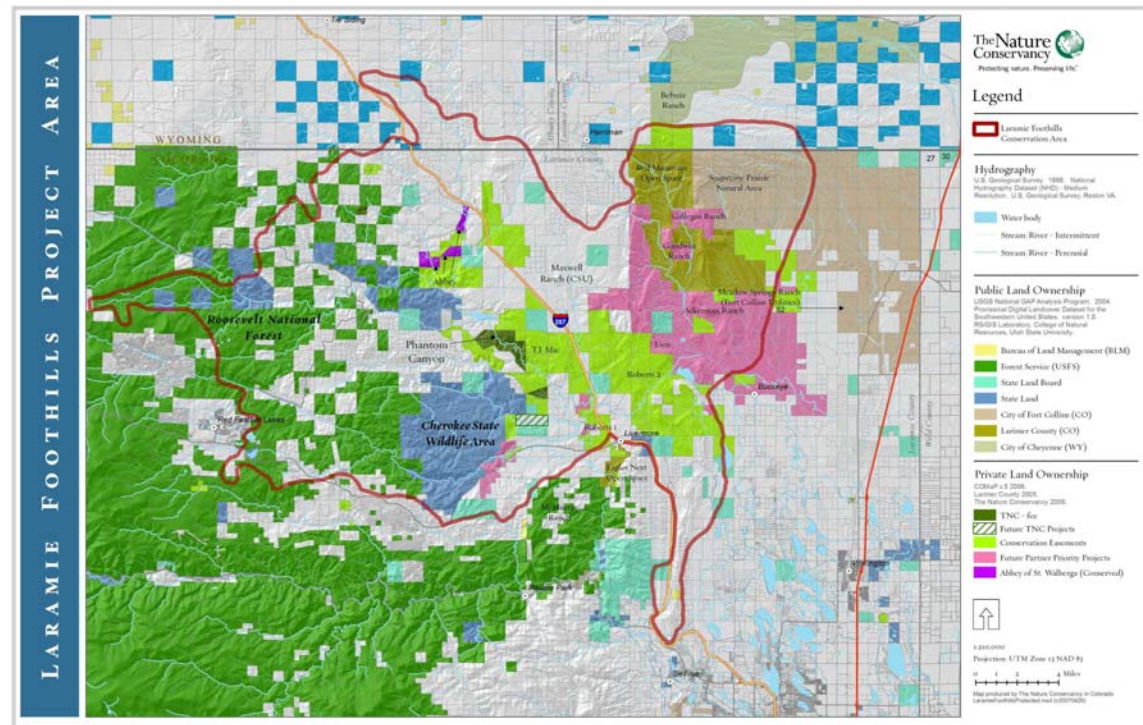
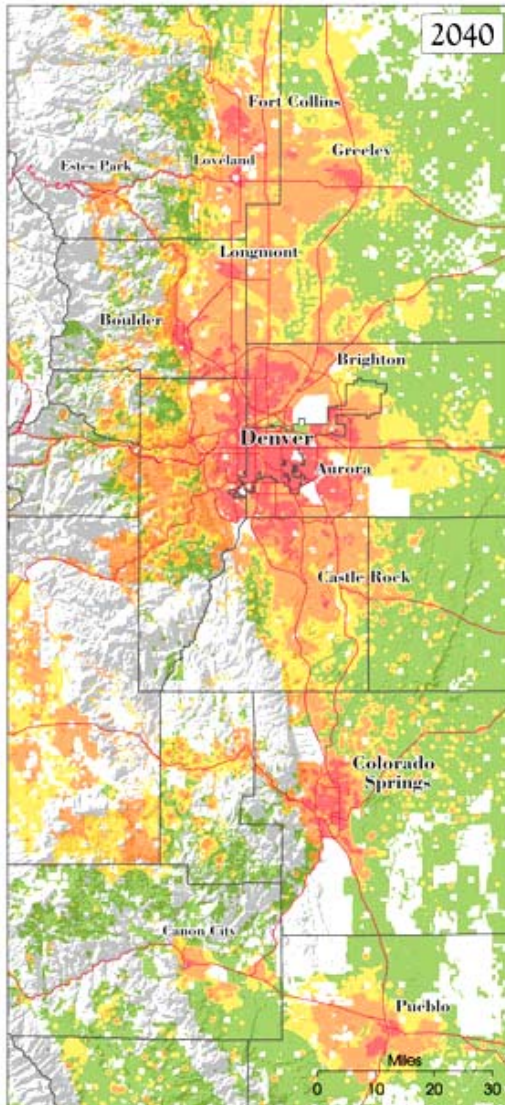
Aldo Leopold (1934)



Northern Colorado Ecosystem Services Working Group



Urbanizing landscapes Versus Conserved landscapes





- New Belgium Brewery (8th)
- Odells Brewery (45th)
- Fort Collins Brewery
- Big Horn Brewery
- Coopersmiths Brewing
- Budweiser

Water in a dry land!

- Fort Collins highest per capita breweries in Colorado and...
- Colorado second in the U.S. in craftsman breweries

Beer:Water
1:5



EPA water quality standards to be enforced

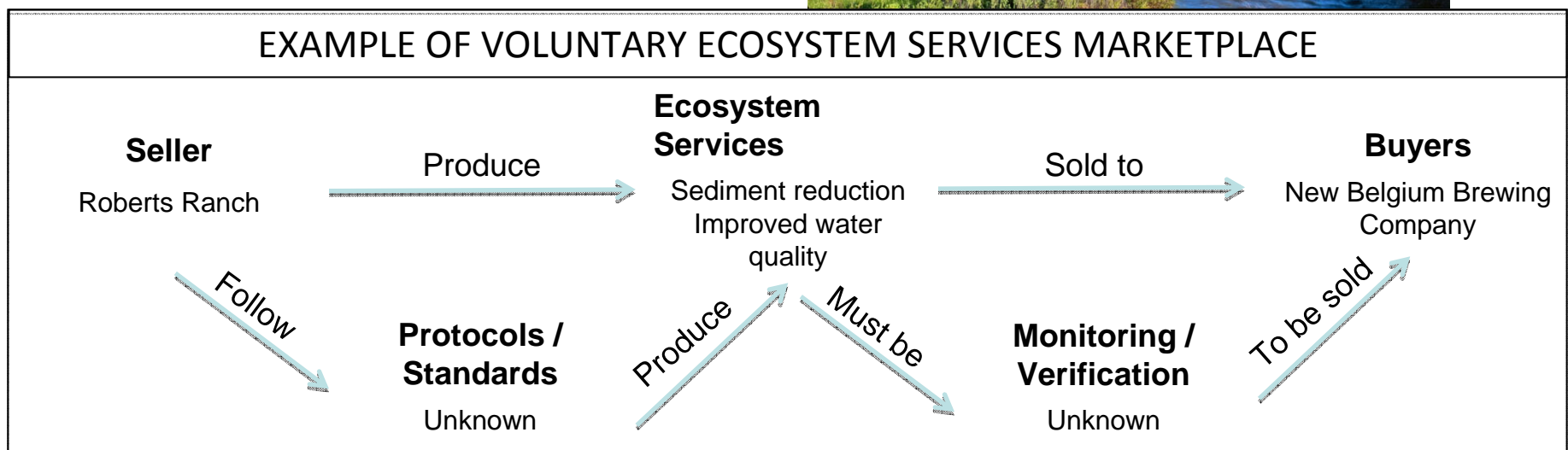
- Fort Collins will spend \$4-40 million to meet these standards



Voluntary and Compliance-Based Payments for Ecosystem Services



EXAMPLE OF VOLUNTARY ECOSYSTEM SERVICES MARKETPLACE





“< 10% of U.S. ecosystems remain healthy
...restored lands offer 31-93% of healthy
land benefits within a decade after
restoration.” Dodds et al. 2008. BioScience 58:837-845

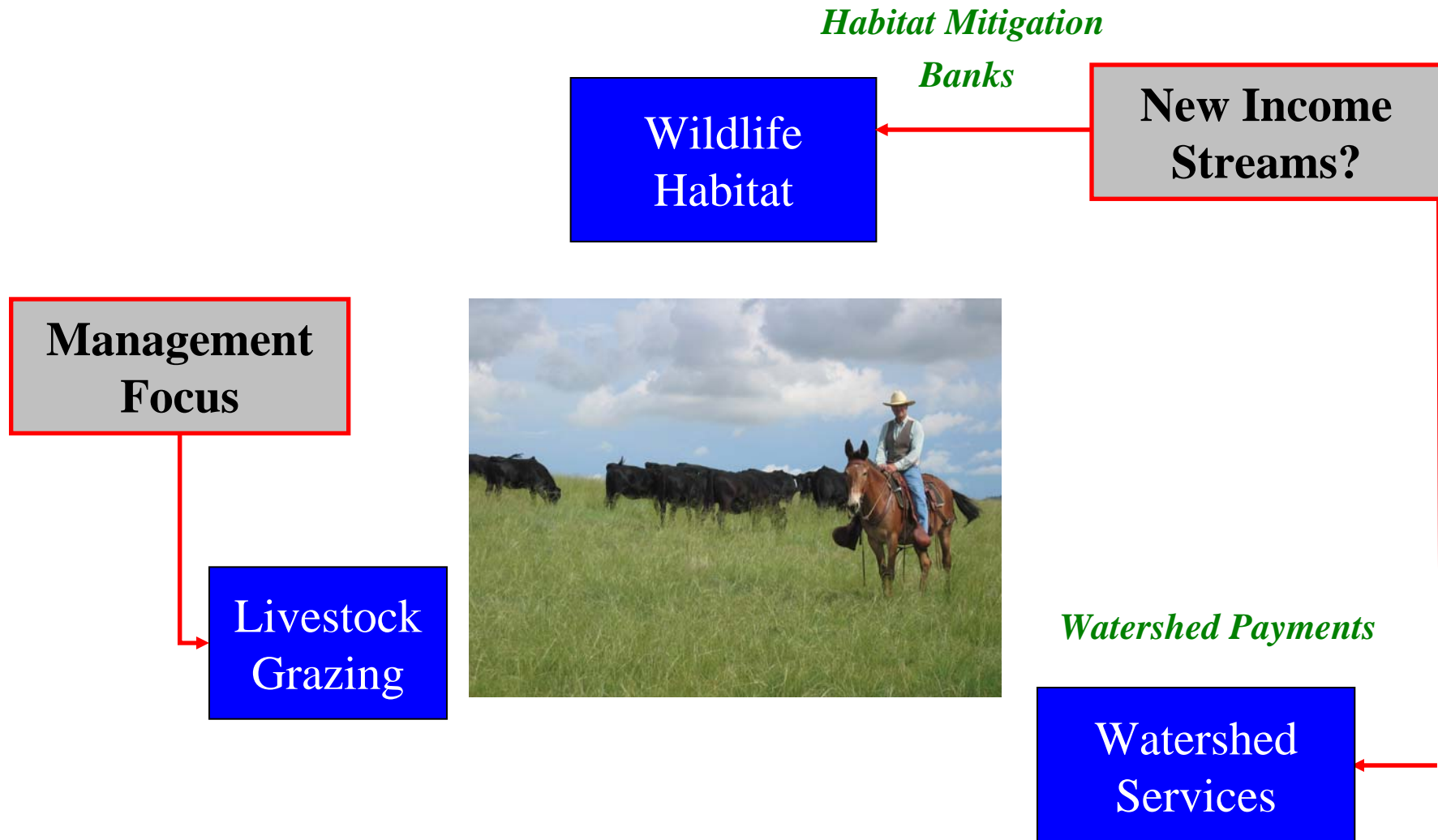


New Partners, New Bridges and New Economies

- Wildlands Restoration Volunteers
- The Nature Conservancy
- Society for Conservation Biology
- Society for Ecological Restoration
- Breweries
- City government
- Ranch families



Ecosystems as Capital Assets



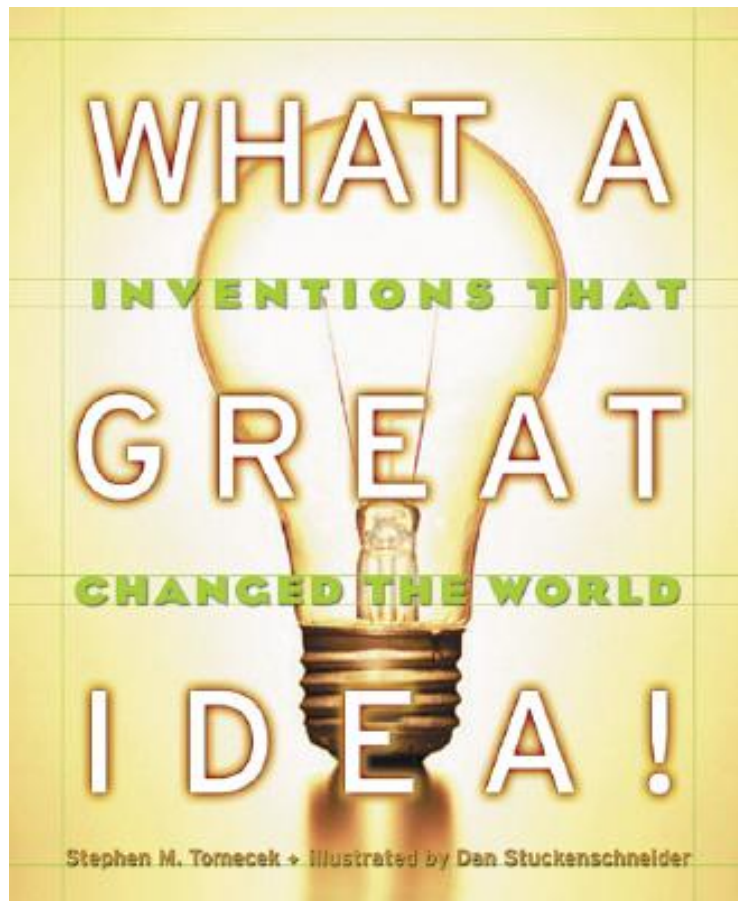


“I plead for public encouragement, economic and moral, for the landowner that conserves the **public values** of which he is the custodian. The search for practicable vehicles to carry that encouragement is a soluble one...Those charged with the search

for such a vehicle must first seek to intellectually encompass the whole situation. It may mean something far more profound than I have foreseen. A. Leopold, 1935, Land Pathology



“When a farmer owns a rarity he should feel some obligation as its custodian, and a community should feel some obligation to help him carry the economic costs.” Aldo Leopold



OR...



For every \$ spent on land conservation in Colorado, there is a \$6 return on investment based on the value of the ecosystem services conserved. **\$3.52 billion so far.**

A Return on Investment: The Economic Value of Colorado's Conservation Easements. 2009. The Trust for Public Land, Denver, Colorado.



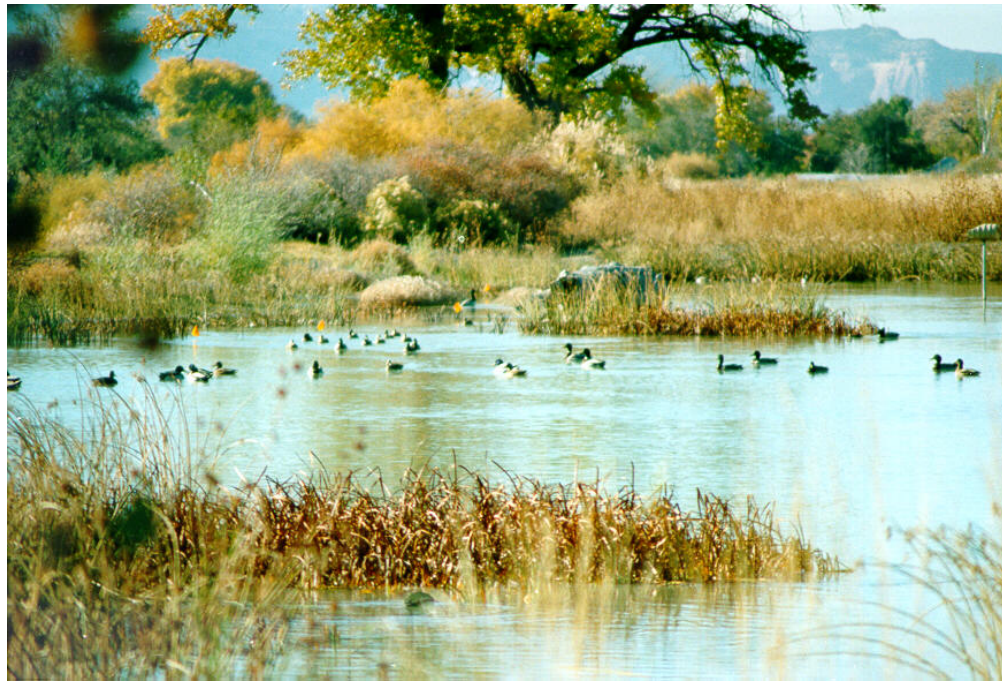
Wetlands

North Park, CO

76% wetlands
from irrigation

Laramie Basin, WY

65% wetlands from
irrigation



Biodiversity + Hay for cows + Open space + Inefficiencies

“Flood irrigation is critical to the existence, hydrology, and community types of most wetlands...” Peck et al. 2001. Wetlands 21:370-378