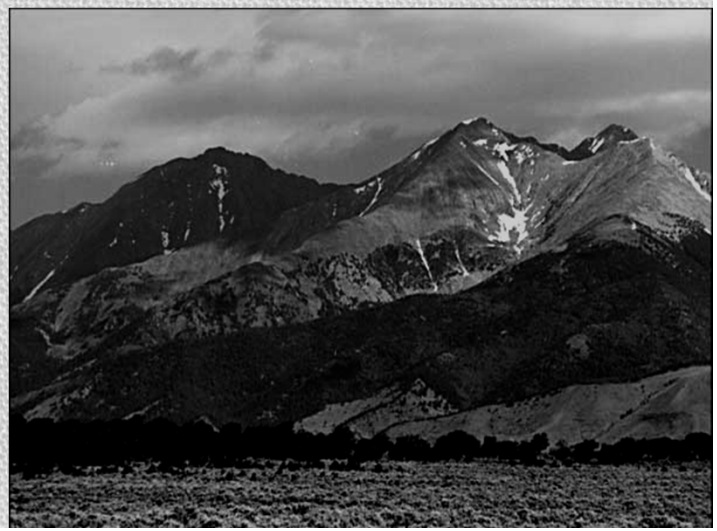
WATER RESOURCES REVIEW COMMITTEE

Land use and water efficiency



LAND USE AND WATER EFFICIENCY ON THE RURAL-URBAN INTERFACE

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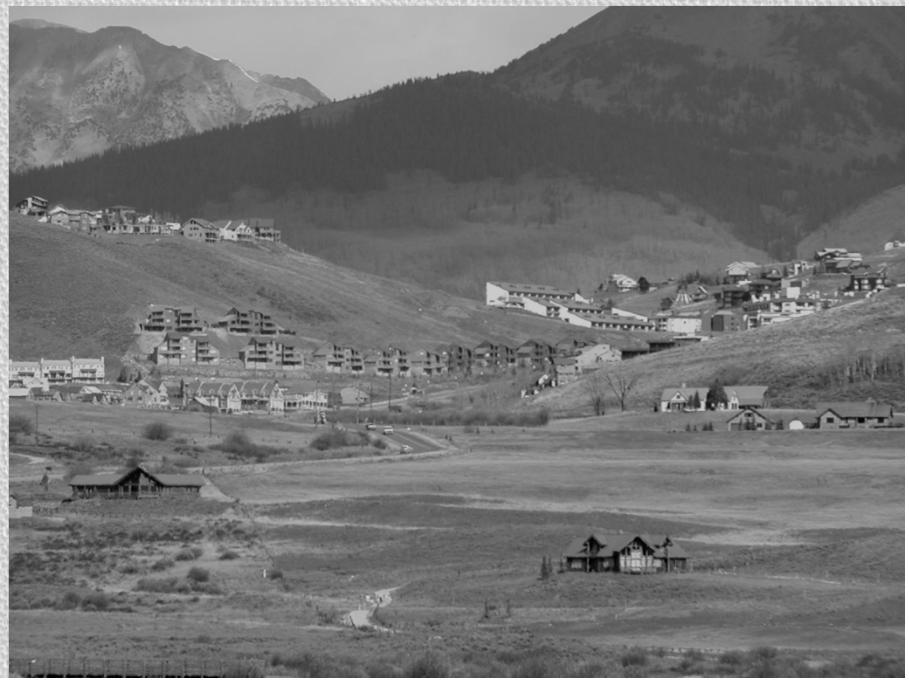
Land use & ag land conversion

- Why preserve agriculture/working landscapes?
- Why encourage higher density urban development?
- How is this happening at the farm, local, state and federal levels?

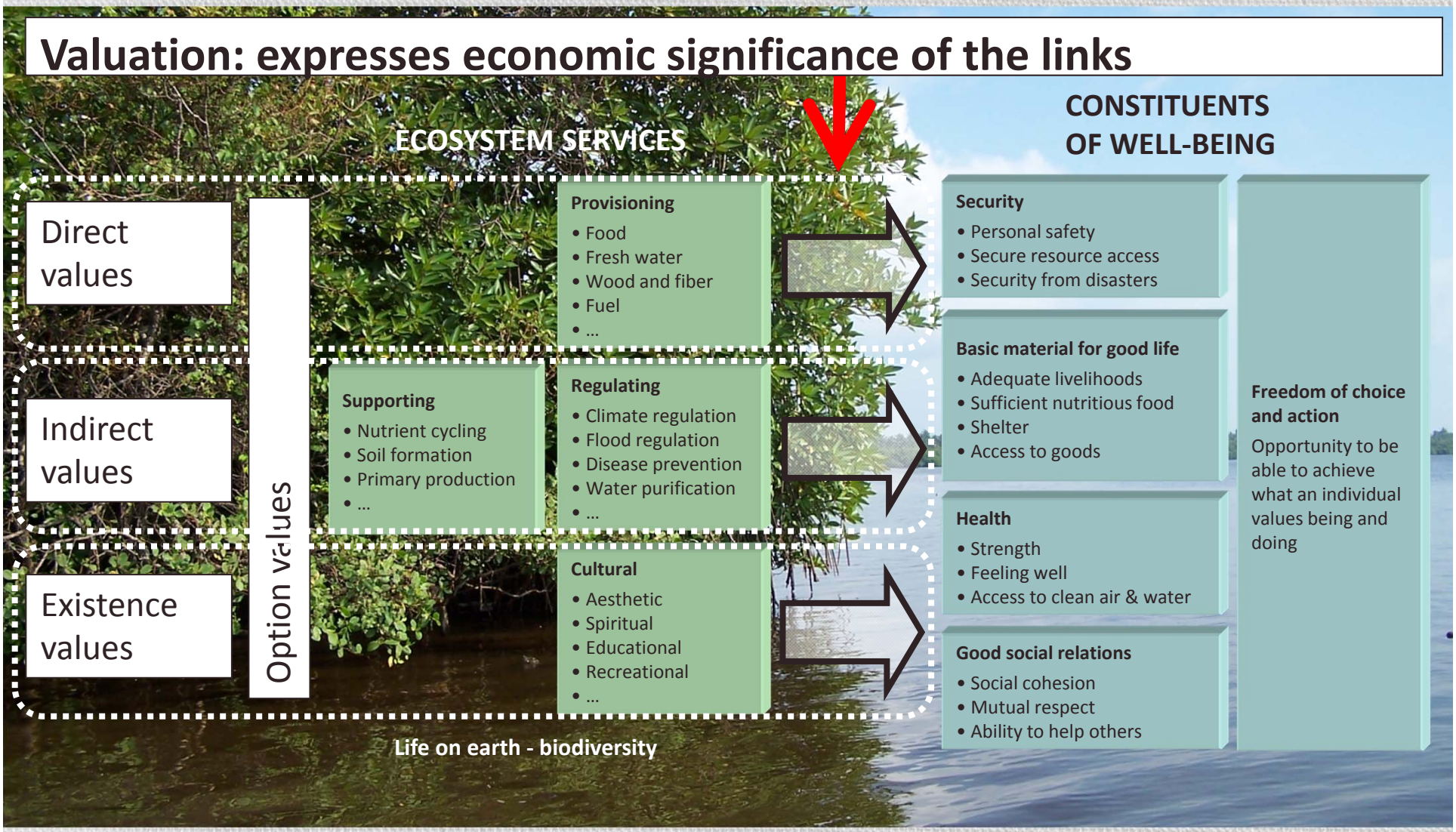


Why preserve agriculture and working landscapes?

- The (real estate and commodity) market captures only part of agriculture's contribution to society.
- True value includes:
  - Lifestyle and community culture
  - Viewshed
  - Wildlife habitat
  - Recreational uses
  - Community separators
  - Water quality and quantity regulation
  - Air quality
  - Disaster risk reduction

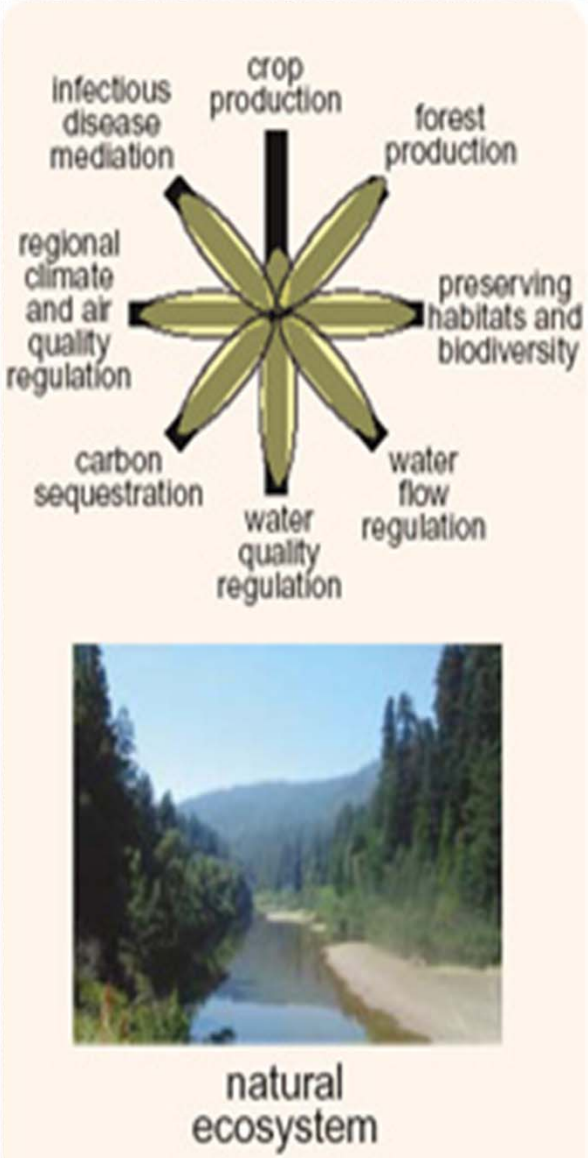
- In addition to food and fiber!

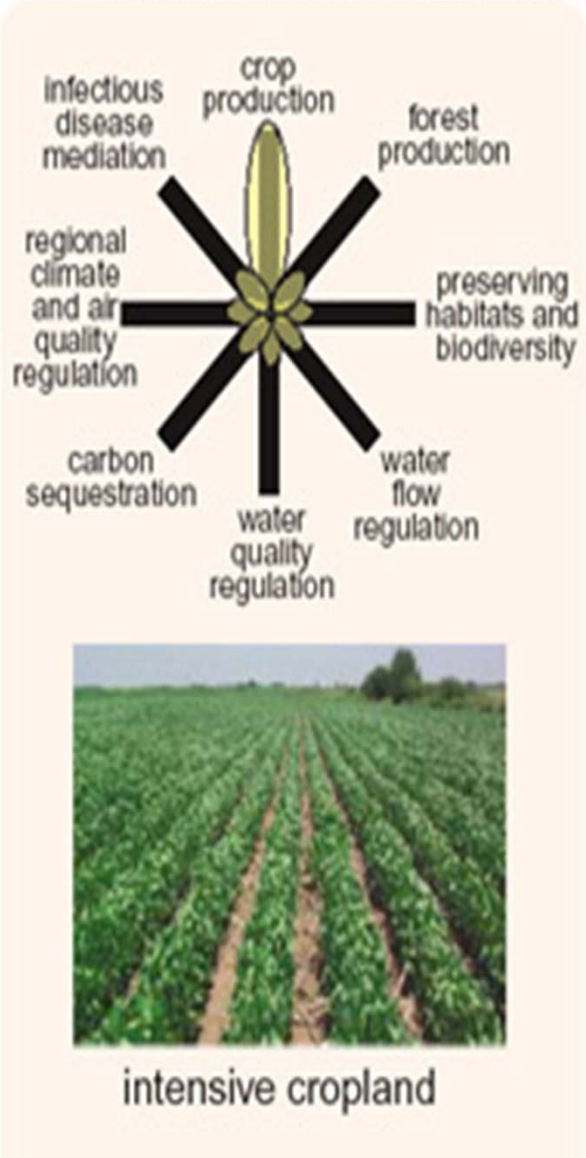
Valuing working landscapes & ecosystems

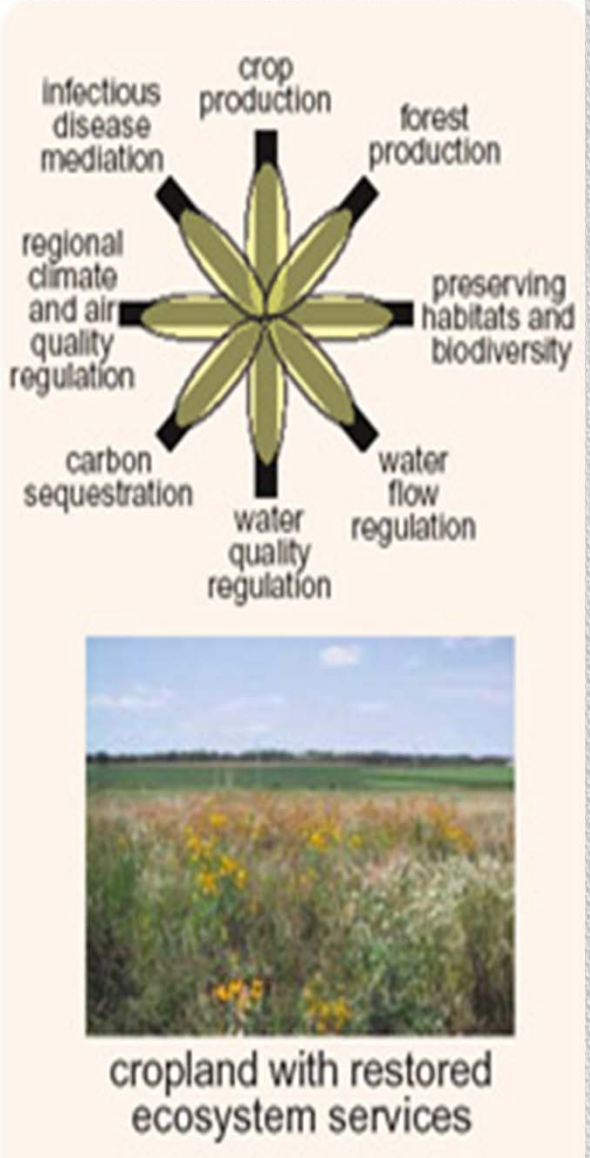


Source: Millennium Ecosystem Assessment 2005

Managing for a portfolio of ecosystem services







Growing consumer demand for 'green' products and services

- Global sales of organic food and drink = US$ 60 billion in 2009
- Sales of certified 'sustainable' forest products increased four-fold between 2005 and 2007
- The global market for eco-labeled fish products grew by over 50% from 2008 to 2009, to a retail value of US$ 1.5 billion
- Major consumer brand owners and retailers have added 'ecologically-friendly' attributes to key product lines:
  - Mars (Rainforest Alliance cocoa)
  - Cadbury (Fairtrade cocoa)
  - Kraft (Rainforest Alliance Kenco coffee)
  - Unilever (Rainforest Alliance PG Tips)

SOIL ASSOCIATION ORGANIC STANDARD

RAINFOREST ALLIANCE CERTIFIED

MARINE STEWARDSHIP COUNCIL

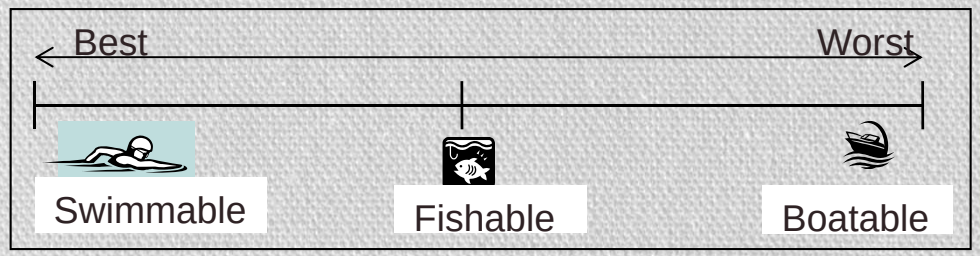
responsibletravel.com
Holidays that give the world a break

FSC FOREST STEWARDSHIP COUNCIL
Because forests matter

Chaffee County:
Working landscapes and water quality

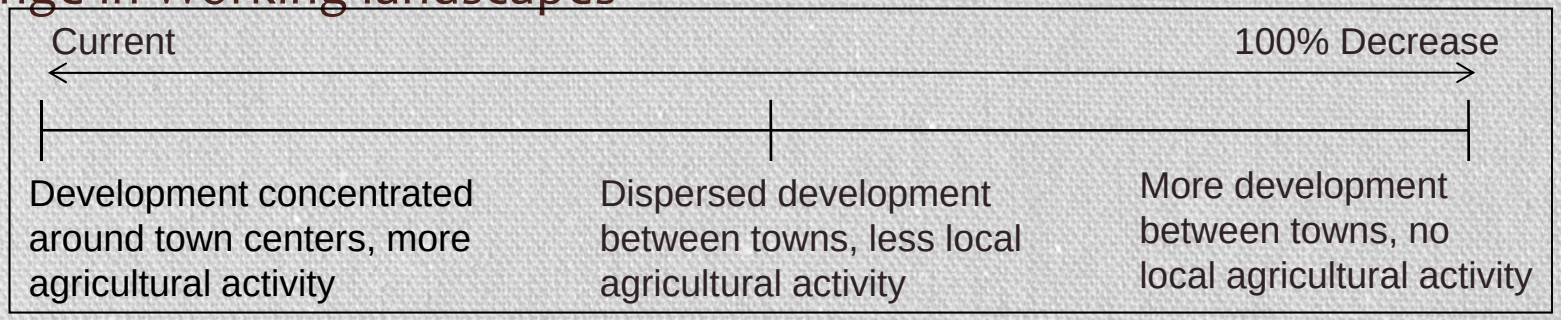
- **Farming and ranching have traditionally been an important part of the economy in Chaffee County**
- **Tourism has become an important economic driver as well**
- **Increasing population and tourism development have led to development pressure on area lands**
- **Increased development can impact local natural resources**
- **Residents and tourists may place positive values on the preservation of these natural resources**

- Change in Water Quality



- Results: Tourists are willing to pay about $5-7 million per year to retain water quality.

- Change in Working landscapes



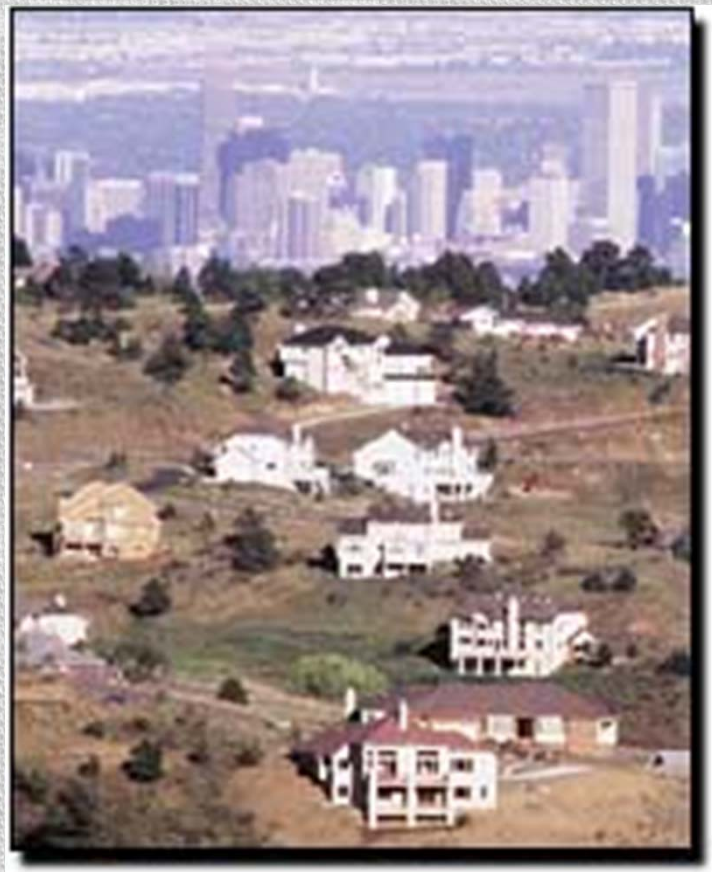
- Results: Tourists are willing to may about $4-6 million to retain working landscapes.

Why encourage higher density urban development?

- Some public infrastructure increases in cost with increases in distance/reductions in density
  - E.g., schools, emergency services, water/sewer, roads, gas/electric
- Air and water quality decrease with reductions in density
- Community health decreases with commuter times.
- Population growth increases conversion
- Income growth increases conversion
- Higher proportion of public to private land increases conversion, but public open lands can substitute for private open lands.

COCS Literature Says

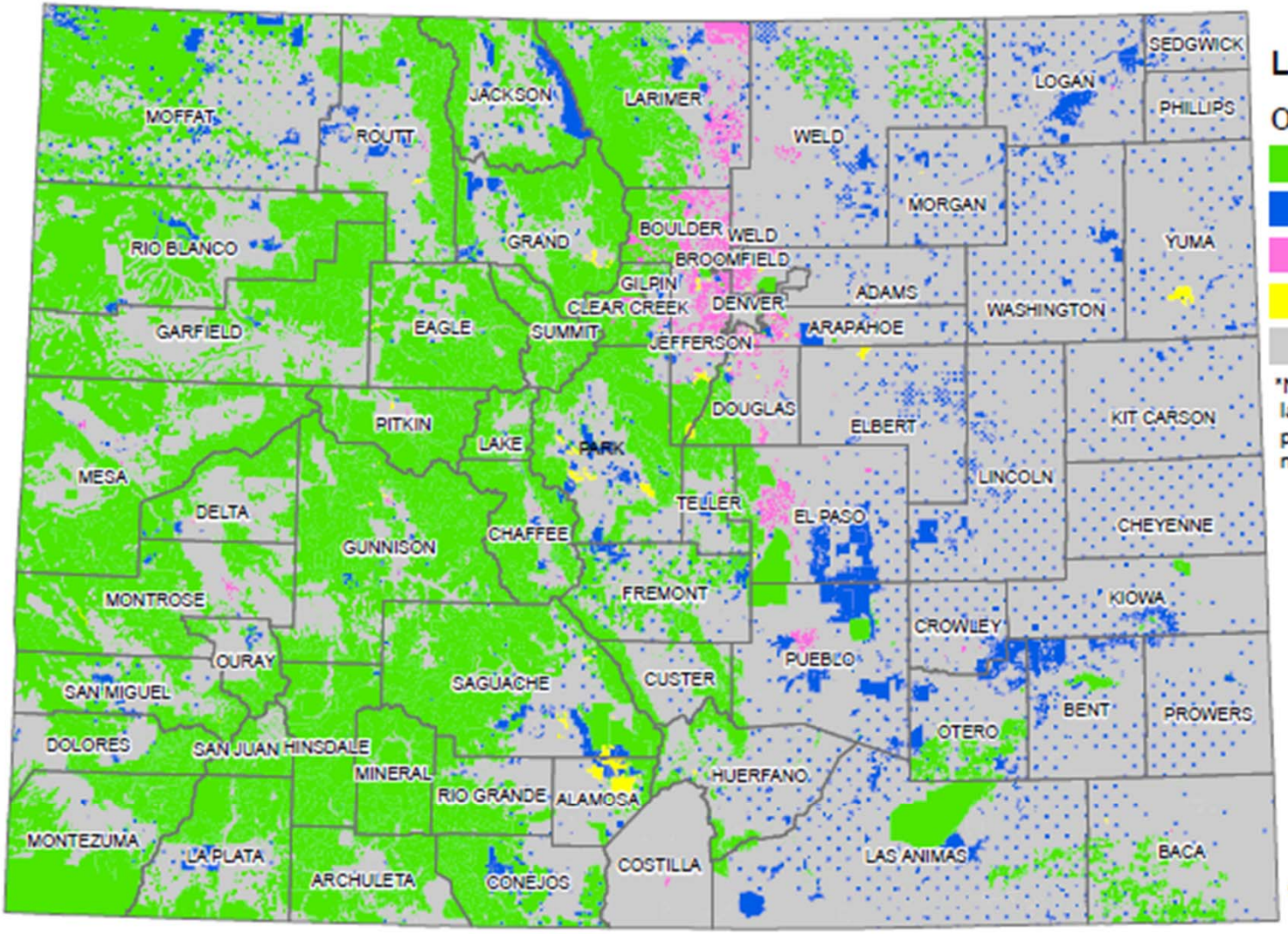
- Residential:
  - $1.15 to $1 (AFT)
  - $1.24 to $1 (USDA)
- Farm & Forest:
  - $0.35 to $1 (AFT)
  - $0.38 to $1 (USDA)
- Commercial:
  - $0.27 to $1 (AFT)



Colorado Results

- Crop & Rangeland are net contributors to county revenues.
- Ag land acres & Urban population are net contributors to school district revenues.
- 35 acres of ag land converted to residential use costs $1.65 in services for each $1 in tax revenues generated.
- Thresholds found at 6X increase in residential value.
- 62 Colorado counties show this negative fiscal impact of dispersed development.

Statewide General Ownership



Legend

OWNER

- Federal Government
- State Government
- Local Government
- Land Trust/NGO
- Private*

*No public access on private lands, including GOCO funded properties, unless otherwise noted

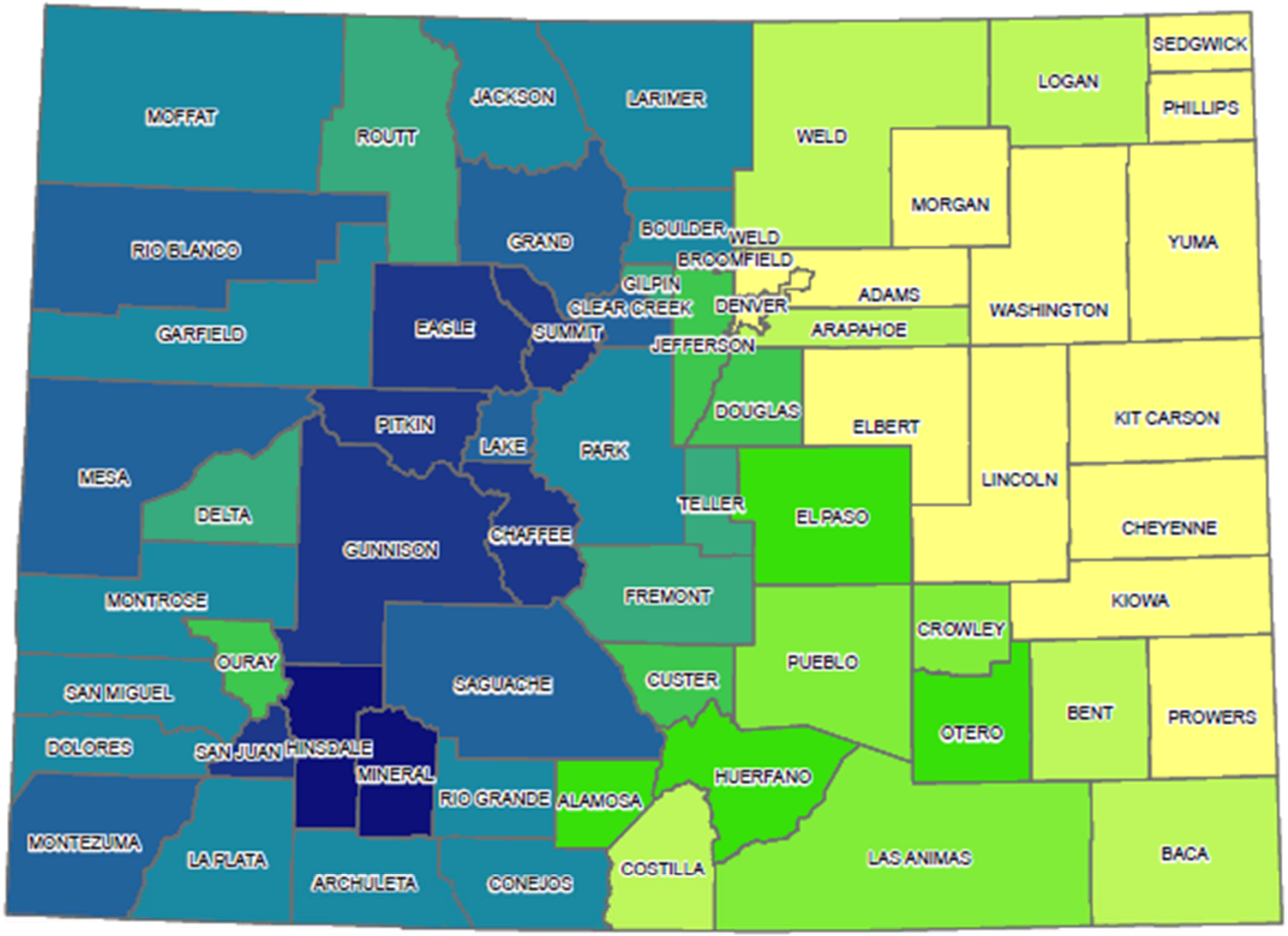
0 12.5 25 50 75 100 Miles

COMaP v6 data prepared by Grant Wilcox and Dr. David Theobald at the:

Natural Resource Ecology Laboratory

Colorado State University
and Janis Whisman, Southpaw Consulting
Map Date: 3/4/2007

Publicly Owned and Privately Owned Protected Lands per County



Legend

0.0% - 10.0%	50.1% - 60.0%
10.1% - 20.0%	60.1% - 70.0%
20.1% - 30.0%	70.1% - 80.0%
30.1% - 40.0%	80.1% - 90.0%
40.1% - 50.0%	90.1% - 100.0%

0 12.5 25 50 75 100 Miles

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Federal policy: Likely direction of effect (for discussion)

- Farm Bill programs decrease conversion
- Farm Bill increasingly encourages diversification & portfolio management, so decreases conversion
- Conservation easement right offs decrease conversion
- Disaster policies decrease conversion
- Energy policies decrease conversion, but can cause labor, so ag profitability, challenges.
- Inheritance taxes are ambiguous w.r.t. conversion
- DOT funds are ambiguous w.r.t. conversion
- Home mortgage interest right offs increase conversion

State policies: Likely direction of effect (for discussion)

- Differential (land in use) taxation decreases conversion
- Right-to-farm legislation decreases conversion
- Conservation easement secondary market decreases conversion
- GOCO decreases conversion
- Enabling conditions for land trusts decrease conversion
- Predictable access to adequate water decreases conversion, and will increase ag profitability
- Mobility of water is ambiguous w.r.t. conversion, but will reduce ag profitability.
- 35 acre rule increases conversion

Local policies

- PDR, PACE, Cluster, Conservation Development and TDR programs decrease conversion.
- Zoning & regulatory programs decrease conversion, but reduce ag land values.
- Parks, green space, (rails to) trails and open space programs reduce conversion
- Big box and 'cherry stem' development increase conversion and hurt smaller local businesses
- Unplanned & ad hoc development increase conversion

Local action

- Agritourism, local food markets, local procurement, diversify product portfolios, increase local support for agriculture and reduce conversion.

- New or emerging markets for carbon, biodiversity, organics, etc., diversify product portfolios and reduce conversion.

- In brief, working to increase profits, diversify production, mitigate risk and take advantage of opportunities as they present themselves

Land use and water efficiency

Out of crisis (fire, flood, financial, fiscal) comes an opportunity to seek out innovative solutions to Colorado's economic development and resource management challenges.

In general, we need to measure better so that we can manage better.

Integrated policy approach is needed that:

- Respects local context,
- Properly values the resource base,
- Dynamically reveals opportunities,
- Punishes waste and inefficiency,
- Streamlines the policy milieu, and
- Rewards stewardship