# Development of an Ecosystem Services Marketplace in Northern Colorado

## Center for Collaborative Conservation Seminar Series

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## What are Ecosystem Services?

The processes and conditions that are mediated by ecosystems and their biodiversity and that sustain and enhance human life

Things that natural systems do for people

## The benefits humans receive from nature that sustain and enhance human life

#### **Examples:**

- Water purification
- Productive agricultural soils
- Crop pollination
- Biodiversity habitat

- Climate regulation
- Waste decomposition
- Nutrient cycling
- Recreational experiences

## What are Ecosystem Services Markets?

A system that provides positive incentives to manage ecosystems to produce environmental services

Economic tool to reward the conservation of ecosystem services

An economic structure that allows those who benefit from ecosystem services to pay resource managers whose stewardship promotes the provision of ecosystem services

Various types of ES markets:

- Water quality
- Wetland mitigation banking
- Conservation banking
- Carbon markets

## What do Ecosystem Service Markets do?

Internalize the external costs or benefits to society of the production, consumption or destruction of ecosystem services

Ecosystem services are externalities

ES markets are an attempt to correct a market failure to properly value and incorporate ecosystem services



## **Natural Capital**

A stock of natural resources that yields a flow of valuable goods and services into the future



## **Examples of Ecosystem Markets**

Willamette Partnership

Great Miami River Watershed Water Quality Trading Program

Florida Rangeland Env. Services Program

Denver Water – USFS: Forest to Faucet program

McKenzie River Watershed - Brewshed

TNC Water Funds – Latin America

## **Colorado Conservation Exchange**

Our Vision: A Colorado where rural and urban communities join to enhance the natural resources, wildlands, and agricultural areas on which our quality of life depends.

Our Mission: To create a marketplace where community members support land stewards who conserve and enhance nature's ability to provide clean and abundant water, healthy food, productive soils, carbon storage, wildlife habitat, and inspiring open spaces.

## Why Develop the Exchange?

# Our quality of life depends on the ecosystem services we receive from rural landscapes

Northern Colorado depends on natural resources to provide us:

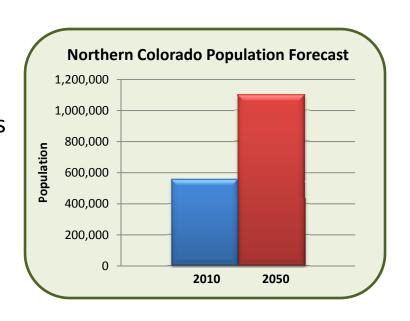
- Clean & Abundant Water
- Productive Soils & Healthy Food
- Open Space & Recreational Opportunities
- Wildlife Habitat
- Carbon Storage



## **Natural Resources Issues**

## 1. Population doubling by 2050

 Increase demand for natural resources such as clean water, open space for recreation, and agricultural lands





## 2. Loss of land stewardship knowledge

 Family ranchers, foresters & farmers who steward our natural resources face increasing development pressure, low profitability and scarce water resources

## **Natural Resources Issues**

#### 4. Pine beetle epidemic

 Wildfire in national forests can impact drinking water

#### 3. Decrease in stewardship funding

 Federal funding for public & private land management

## 5. Future water quality regulations

 Increased regulation can impact cost of providing drinking water



## **Our Goals**

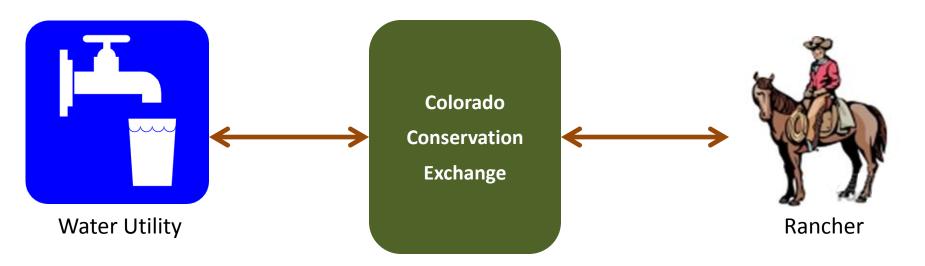
- 1. To preserve and enhance our quality life by raising the awareness of rural-urban interdependence on the benefits of healthy wildlands and working agricultural lands, and the threats to those benefits
- 2. To create a marketplace that enables beneficiaries ("buyers") to support land stewards ("sellers") who enhance nature's benefits
- 3. To develop the transaction functions necessary for marketplace transparency and effectiveness

## What Does the Exchange do?

Connects the beneficiaries of nature's benefits with the landowners and natural resource managers who produce them

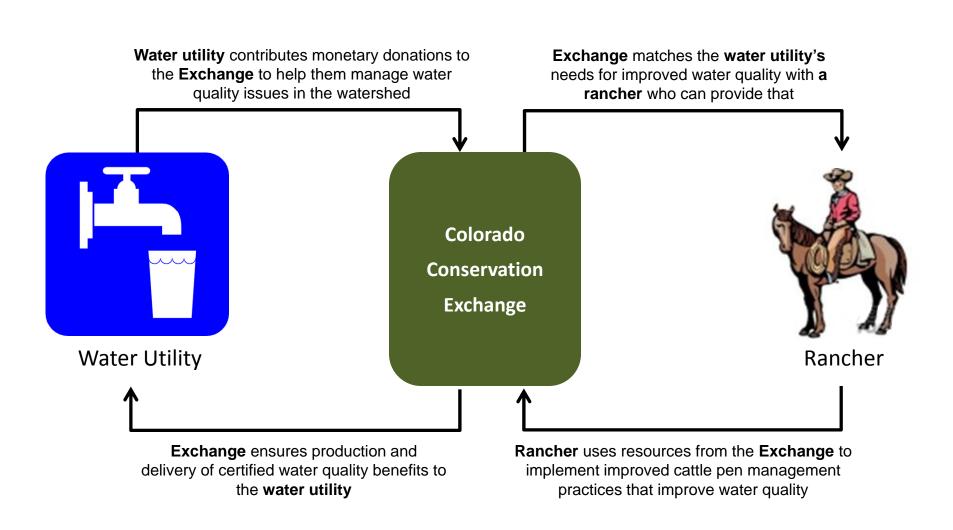
#### **Example**

A water utility needs improved water quality and a rancher can provide that



## **Pilot Project Model**

## **Nature's Benefit: Improved Water Quality**



## **Exchange Overview**

**Ecosystem services** targeted will include *improved*:

Water Quality & Supply • Productive Soils & Healthy Food •

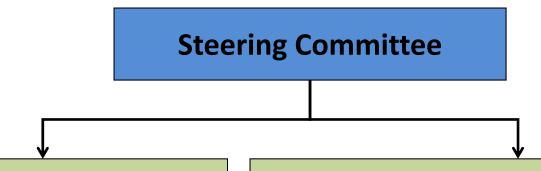
Wildlife Habitat • Open Space & Recreation • Carbon Storage

Beneficiaries contribute monetary, in-kind, and other **Exchange** matches the **Beneficiaries**' donations to the **Exchange** to help them manage their needs for nature's benefits with Stewards needs related to nature's benefits who can provide them. **Beneficiaries** Fund Administration: **Technical Assistance:** Professional financiers, foundations Technical experts work with **Stewards** ("Buyers") and endowment managers provide Stewards to determine best ("Sellers") assistance to the Exchange management and restoration Colorado practices to produce nature's benefits Utilities, Businesses, Breweries, Local Food Farm, ranch and logging Conservation Consumers, families; natural **Intermediaries** Intermediaries Households, resource managers, Developers, **Exchange** public land managers; Registry: Recreationists, Monitoring / Verification: small acreage Independent third party registry Nonprofits, Universities, landowners; NGOs and Independent third party monitors records production and transfer Public Agencies, Private verify the production of nature's volunteer groups of certified nature's benefits Foundations, Visitors benefits **Exchange** ensures production and delivery of **Stewards** use resources from the **Exchange** to

implement practices that enhance nature's benefits desired by **Beneficiaries** 

certified nature's benefits to Beneficiaries

## **Institutional Structure**



#### **Exchange Development**

#### **Engaging Key Community Partners**

- Determine demand for nature's benefits
- Provide support for initiative and refine our approach
- Help us raise resources
- Cultivate future Exchange Leadership Team

#### **Design Team for the Exchange**

- Develop exchange structure and business plan
- Develop outreach materials for broader stakeholder engagement

#### **Pilot Projects**

#### **Water Quality**

#### **Sylvan Dale Ranch**

• Nutrient Reduction

#### **Roberts Ranch**

• Sediment Reduction

#### Water Supply?

#### **Water Sharing**

- ATMs
- Cities & Agriculture
   & Environment

#### Others?

Water Quality-N & P

#### **Public lands**

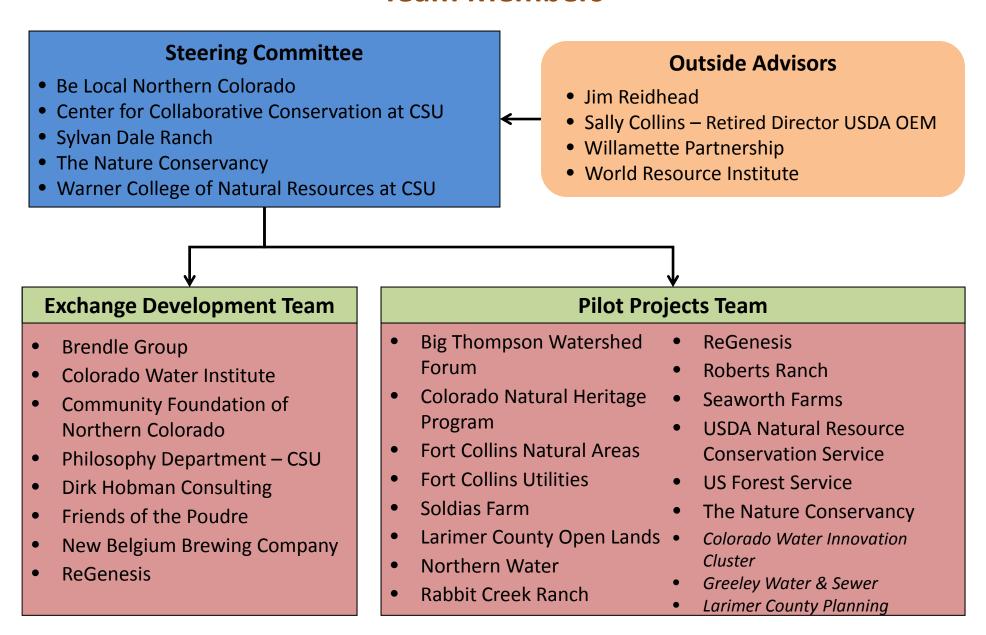
Forestry and recreation

#### **Pilot Projects Work Plan**

- Create a process for identifying, approving, and establishing pilot projects
- Set conservation priorities
- Establish best practices that produce nature's benefits
- Develop measurement systems to assess project outcomes
- Build support by engaging stakeholders, raising resources, developing outreach materials and activities
- Demonstrate proof of concept and determine how to scale up pilot projects

## **Colorado Conservation Exchange**

#### **Team Members**



## **Work Plan and Timeline**

