

Upper Green River Conservation Exchange

Market-based Conservation Mechanism



Kristi Hansen
Agricultural & Applied Economics
University of Wyoming
April 2, 2013

PES Definitions

Ecosystem Services The benefits that people derive from ecosystems, including (Millennium Ecosystems Assessment 2003):

Commodities	Food
	Fresh water
Regulating services	Flood regulation
	Water purification
Cultural services	Spiritual
	Recreational

Payments for Ecosystem Services An innovative, market-based approach to providing financial incentives or compensation to private landowners for engaging in environmentally or socially beneficial activities that might not otherwise be undertaken or continued



PES Taxonomy

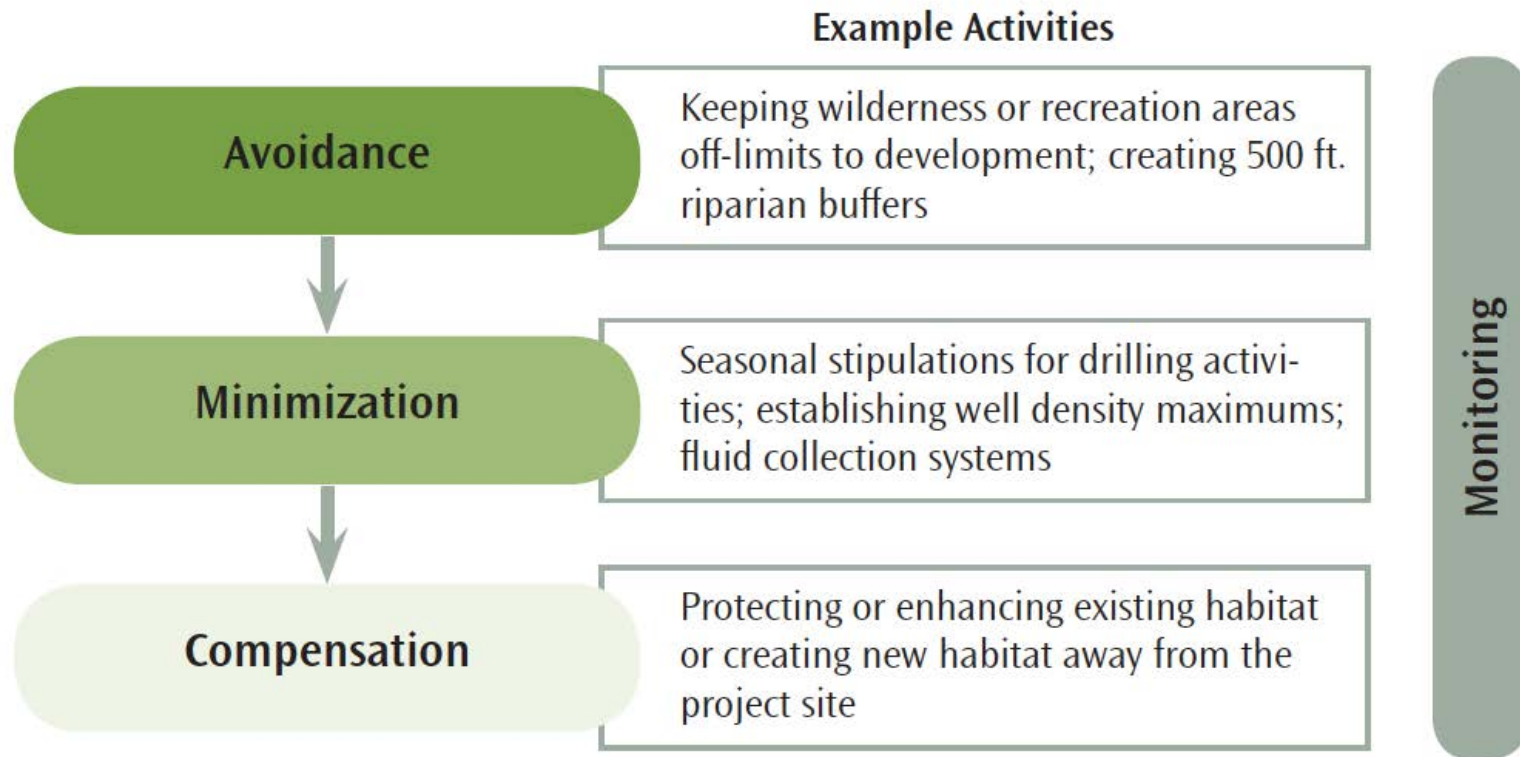
Carbon Markets Reward the stewardship of an ecosystem's atmospheric regulation services

Water Markets Provide payments for nature's hydrological services.

Biodiversity Markets Create an incentive to pay for the management and preservation of biological processes, habitat, and species

Bundled Payments Payment secures all or a combination of carbon, water, and biodiversity services (includes certified timber, certified product)

Mitigation Hierarchy

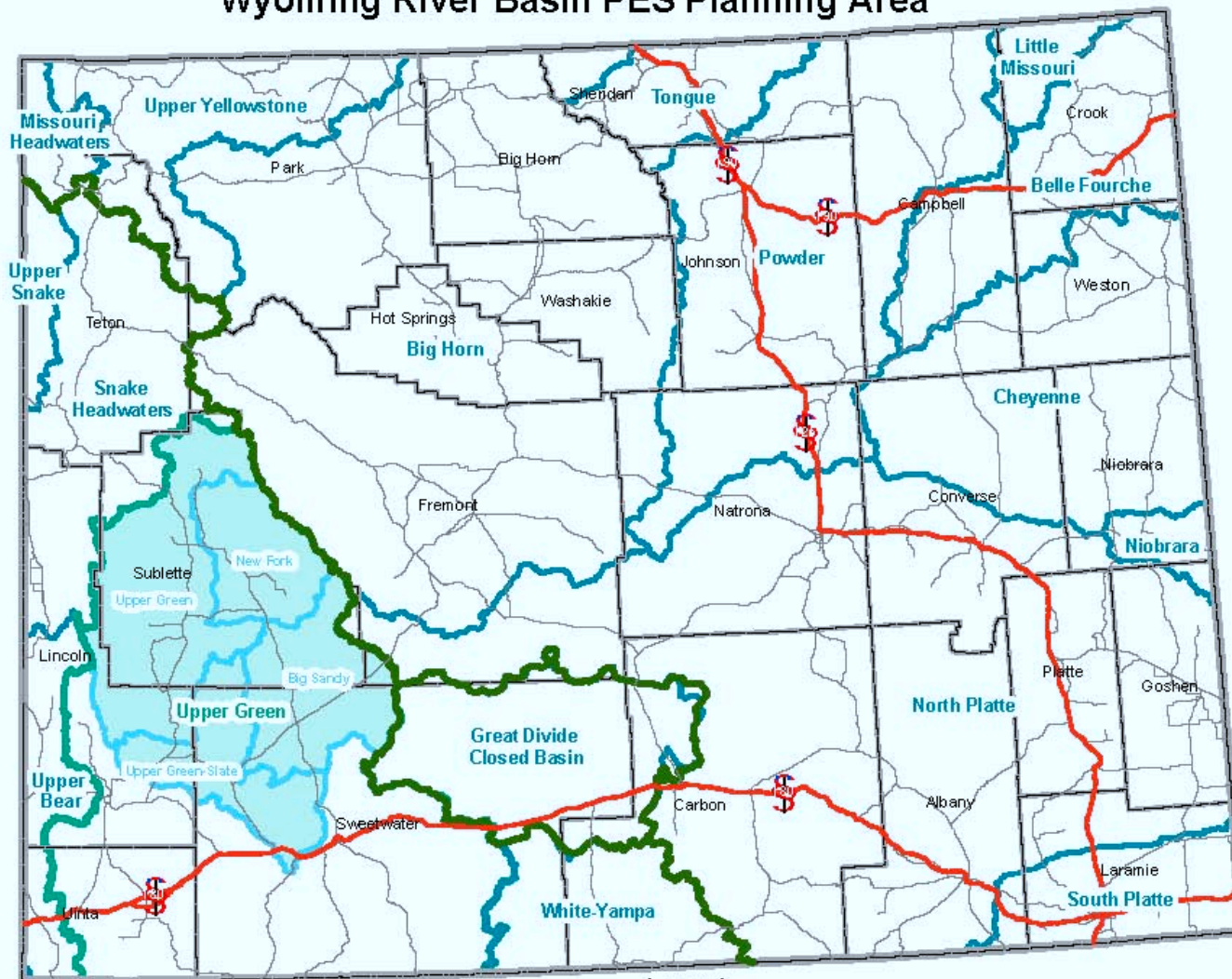


A. Jakle, Ruckelshaus Institute (2012)

- On-site mitigation is generally preferred to off-site mitigation
- Off-site mitigation nearby and within the same ecological region is generally preferred to mitigation farther away

Wyoming River Basin PES Planning Area

11



Legend

- | | | |
|--------------------|-----------------------------------|-------------------------|
| State of Wyoming | Interstate Highways | Other Wyoming Basins |
| Wyoming Counties | Main Roads | Upper Green River Basin |
| Continental Divide | Upper Green PES Focus Area (HUC8) | |

0 25 50 100 Miles

1:2,750,000

Upper Green River Conservation Exchange: Objectives, History, Partners

Initial Project Partners University of Wyoming, Sublette County Conservation District, The Nature Conservancy

Grant Support USDA-NRCS Conservation Innovation Grant (2011-2013); UW Agricultural Experiment Station (2011-2013);

Objectives

- To scope the feasibility of developing a payment for ecosystem services market in the upper Green River Basin;
- To set up a market if the feasibility assessment indicates potential

Additional Partners Environmental Defense Fund, Environmental Incentives (market development), Parametrix (quantification tool)

UGRCE: Collaborative Effort



© Keith Szafranski



Tom Reichner/Shutterstock.com



Kristiana Hansen/uwyo.edu

UGRCE: Key Features

Voluntary Participation by Buyers/Sellers Likely buyers are energy companies, environmental NGOs/foundations, amenity buyers, and downstream water users. Sellers are landowners.

Term Lease Focus Contracts will be for set terms (e.g., 10-20 years).

Focus on Metrics and Measurable Results Practices undertaken will be optimal from an economic and ecological perspective.

Activities so far Focus groups and interviews;
Bilateral transactions;
Planning for full market

UGRCE: Overview

A mechanism for market-based, financial transactions for voluntary or mandatory compensatory mitigation whereby a quantified and verified unit of ecosystem service (called a credit) is purchased by an investor from a willing producer.

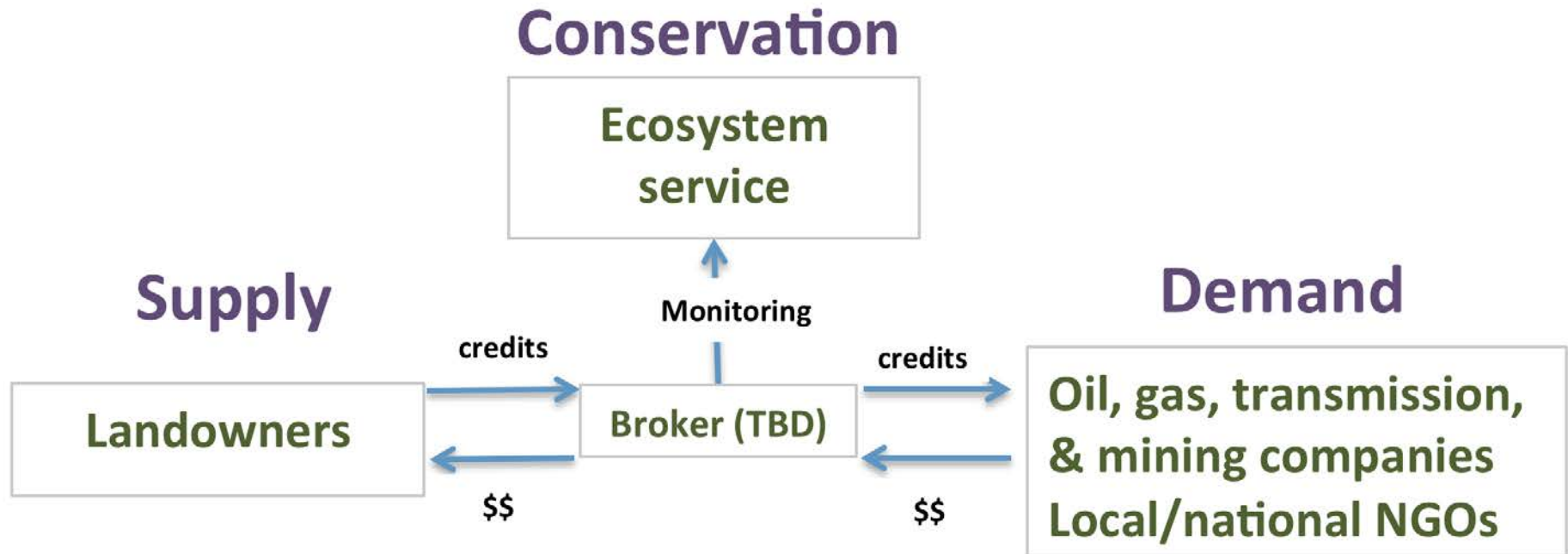
UGRCE: Overview

Key features

1. Market protocols
2. Quantification tools
3. Assurances



UGRCE: Market Protocols



UGRCE: Quantification Tools

The quantification tools:

- Measure ecological value of impacts (debits) and offsets (credits) to the habitat or natural resource system
- Quantify a unit of benefit equivalent to a unit of impact
- Facilitate a financial transaction by defining a unit of trade (credit). A credit is, for example, a functional (high-quality) stream mile or acre of habitat
- Outcome-based, to the extent feasible given current science

Science committees are currently working on separate tools for the Greater sage-grouse, mule deer, and riparian function

UGRCE: Assurances/Credit

Example ecosystem service: Greater sage-grouse habitat

Can we set up PES markets for candidate species
BEFORE listing occurs?

Pre-Listing Habitat Exchanges

- Voluntary, pre-listing conservation improves habitat as early as possible.
- Habitat improvements resulting from voluntary conservation agreements may eliminate the need for a listing at all.

UGRCE: Assurances/Credit

For example:
Greater sage-grouse

Conservation

Greater sage-grouse habitat

Supply

Landowners

credits

Broker (TBD)

credits

\$\$

\$\$

Monitoring

Demand

Oil, gas, transmission,
& mining companies
Local/national NGOs

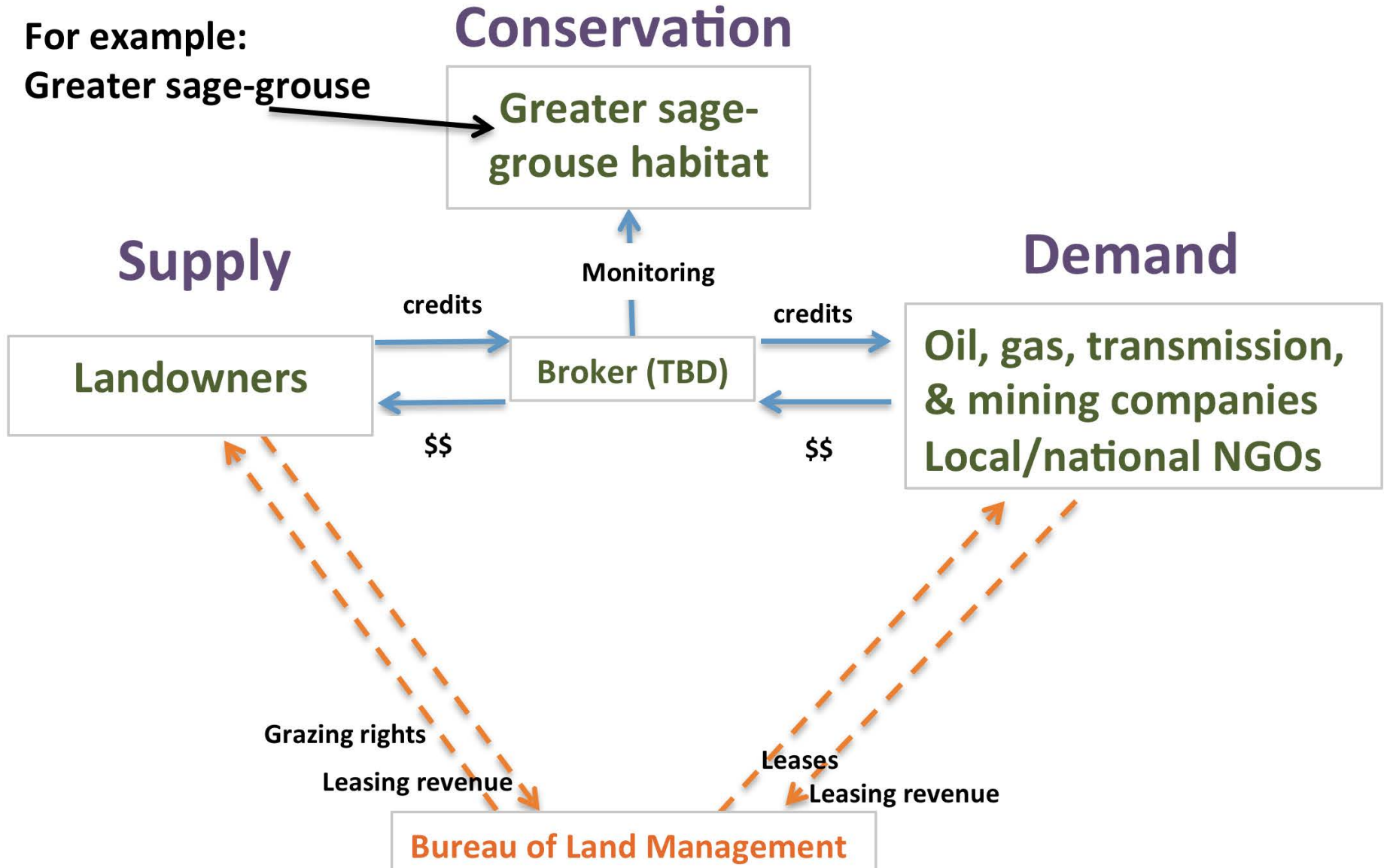
Grazing rights

Leasing revenue

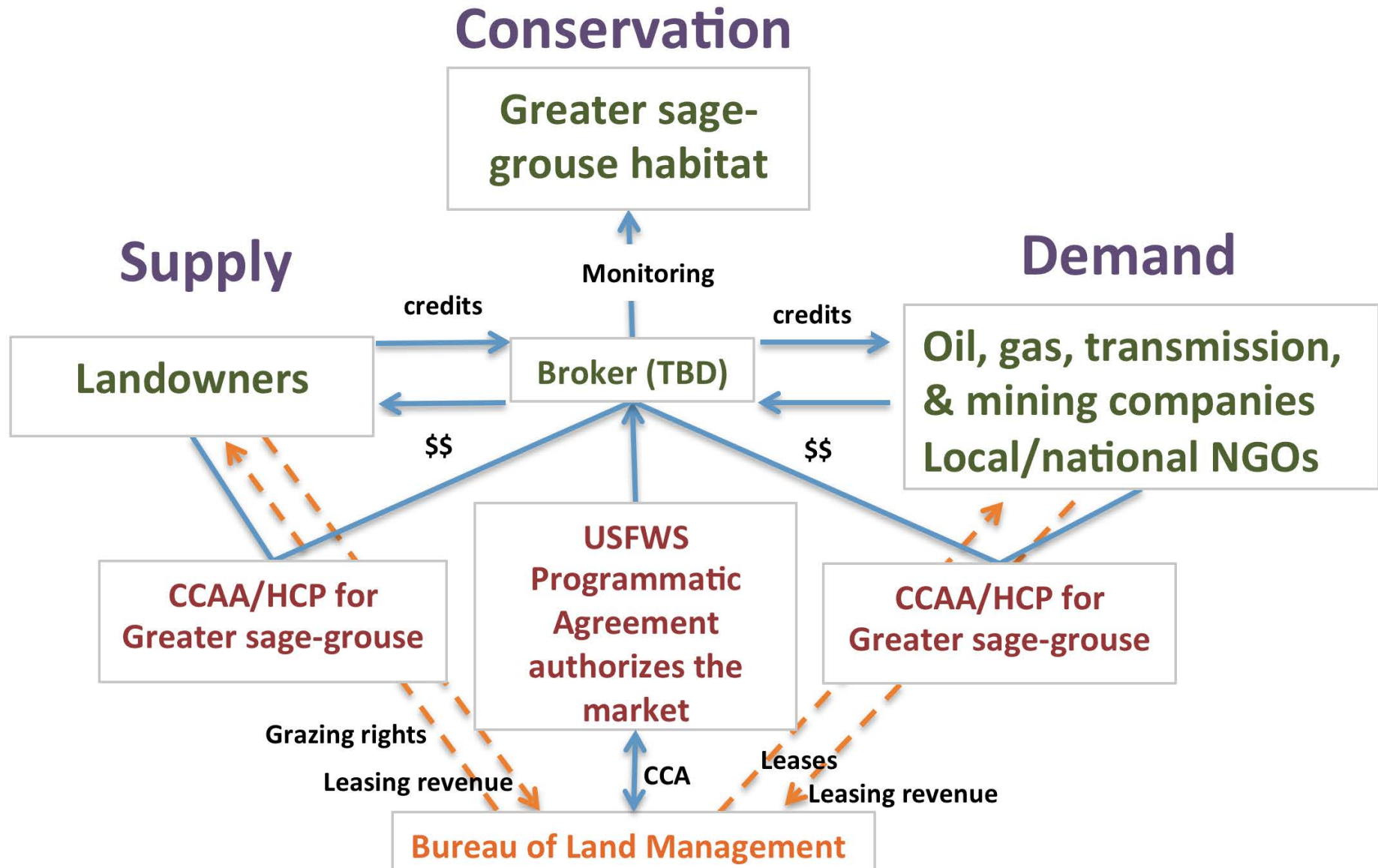
Leases

Leasing revenue

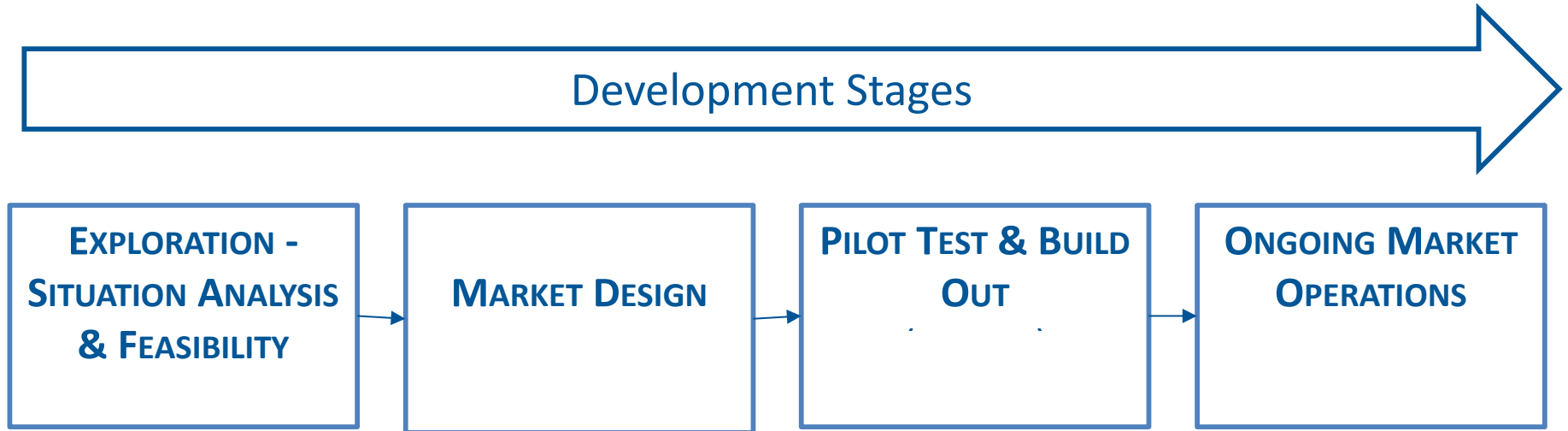
Bureau of Land Management



UGRCE: Assurances/Credit



UGRCE: Next Steps



UGRCE: Transactions in Development

Transaction	Ecosystem Service	Status
1. Cheatgrass treatment, Boulder Lake area	Upland sagebrush habitat	Spraying occurred in October 2013; planning underway for additional spraying in fall 2014.
2. Water improvements, Little Sandy River	Riparian habitat/water resource	Product is in development.
3. Paper transaction; no money changes hands	Riparian habitat/water resource	Assess impacts of changes in flood irrigation practices such as timing and return flow.
4. Regulatory approvals	Upland sagebrush habitat	Working on product, price, and regulatory approvals.

UGRCE: Species & Ecosystem Services

Current Focus



Others?



Questions/comments about the Upper Green River Conservation Exchange?

Melanie Purcell	mpurcell@sublettecd.com	(307) 367-2257
Kristi Hansen	kristi.hansen@uwyo.edu	(307) 766-3598
Ted Toombs	ttoombs@edf.org	(970) 682-2259