

RECLAMATION 101: COMPONENTS OF SUCCESSFUL RECLAMATION

RECLAMATION PLANNING



Pete Stahl

WYOMING RECLAMATION AND RESTORATION CENTER



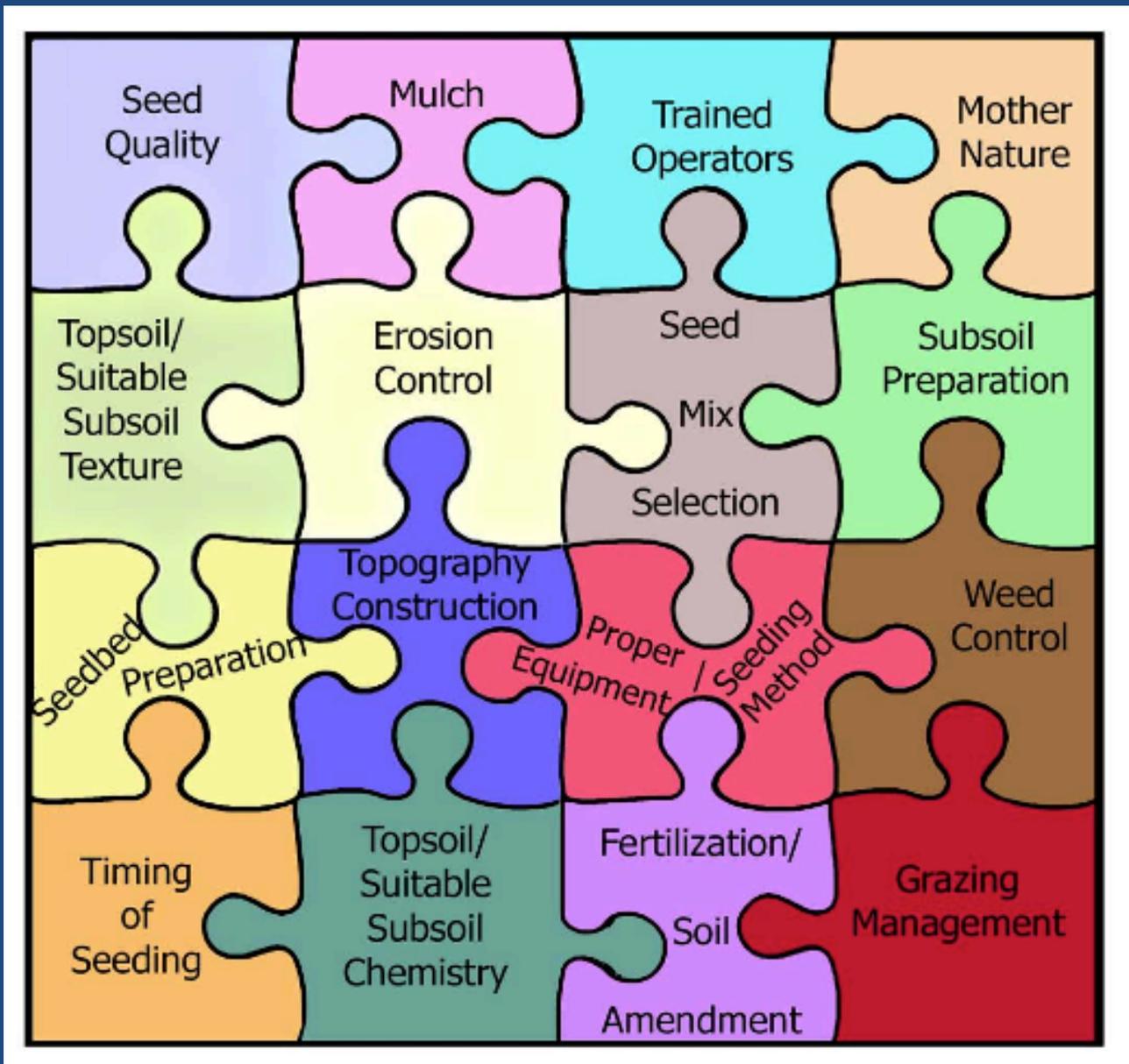
NATURAL RESOURCE DEVELOPMENT PROCESS

- 1. Obtain lease from rights holder**
 - Land Owner
 - Government (state or federal)

- 2. Apply for Resource Development Permit**
 - Baseline studies of environmental conditions
 - Approval of resource development plan
 - Post Reclamation Bond

- 3. Begin resource extraction followed by reclamation**
 - periodic regulatory inspections

- 4. Management, monitoring, and evaluation period**
 - approval and bond release



Successful Reclamation Puzzle



Reclaimed/Restored landscape in central Wyoming

BLM Wyoming Reclamation Policy:

A reclamation plan shall be developed for all surface disturbing activities and will become part of the proposed action in the NEPA document.

The reclamation plan shall address short term stabilization to facilitate long Term reclamation.

Reclamation Goals:

1. Short term goal: Immediately stabilize disturbed area and provide conditions necessary to achieve long term goals.
2. Long Term Goals: Facilitate eventual ecosystem reconstruction to maintain a safe and stable landscape and meet the desired outcomes of the land use plan.

PREDISTURBANCE SITE ASSESSMENT

Location

Land and Mineral Ownership

Land Use Status

Climate (i.e., precipitation, growing season)

History, Archeology, etc.

Air Quality

Hydrology (surface and subsurface)

Geology

Soils Inventory

- identification of all soils series
- distribution of soil types

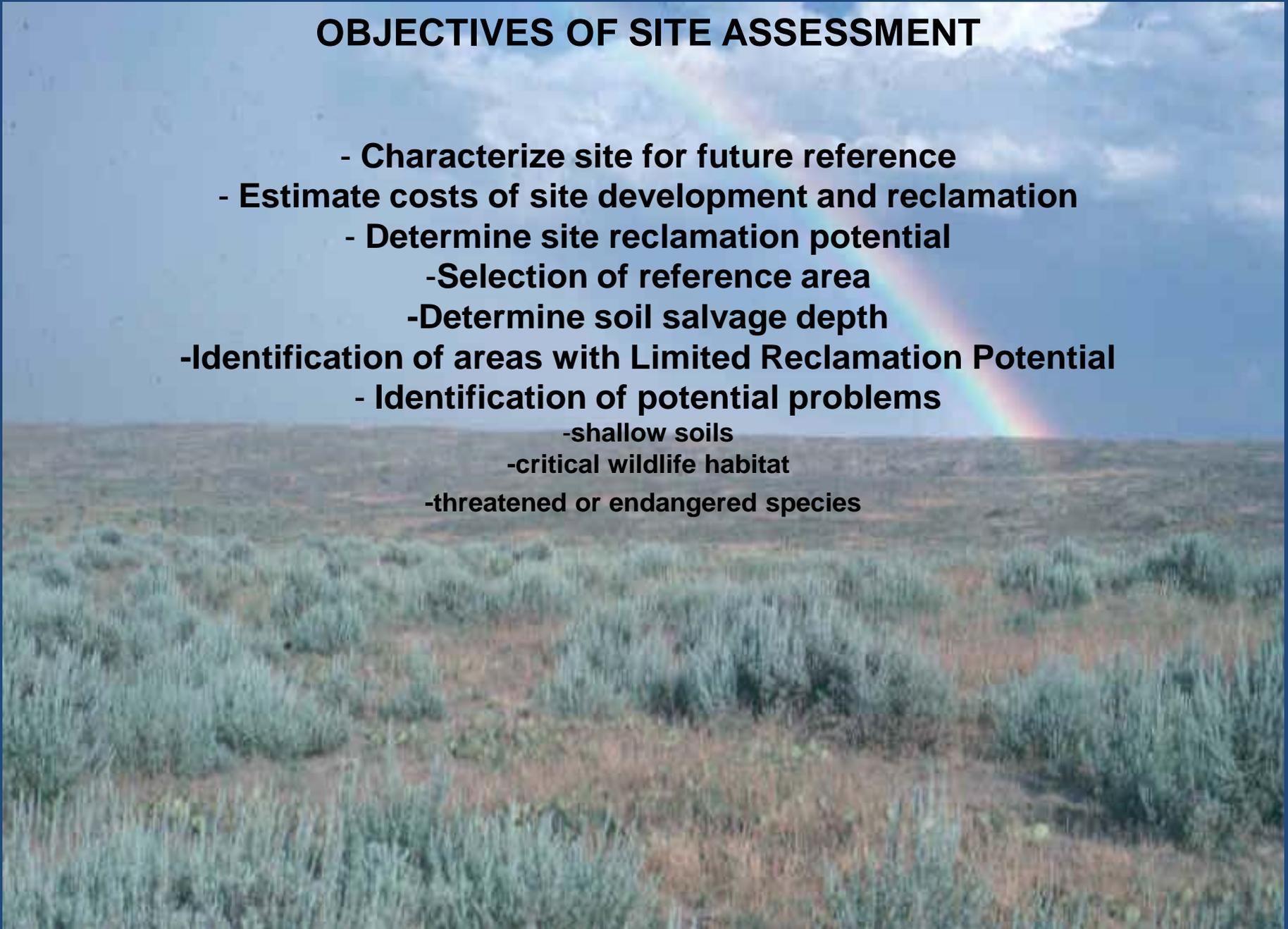
Vegetation Inventory

- mapping of veg types
- characterization of vegetation types
- production, cover, density
- species composition, diversity

Wildlife and Habitat

OBJECTIVES OF SITE ASSESSMENT

- Characterize site for future reference
- Estimate costs of site development and reclamation
 - Determine site reclamation potential
 - Selection of reference area
 - Determine soil salvage depth
- Identification of areas with Limited Reclamation Potential
 - Identification of potential problems
 - shallow soils
 - critical wildlife habitat
 - threatened or endangered species



IMPORTANT SOIL INFORMATION

A photograph of a soil profile showing different layers of soil and vegetation on top. The top layer is dark brown, followed by a lighter brown layer, and then a darker, more textured layer. The background shows a line of green bushes under a blue sky with some clouds.

Soil Mapping or Survey Information (NRCS)

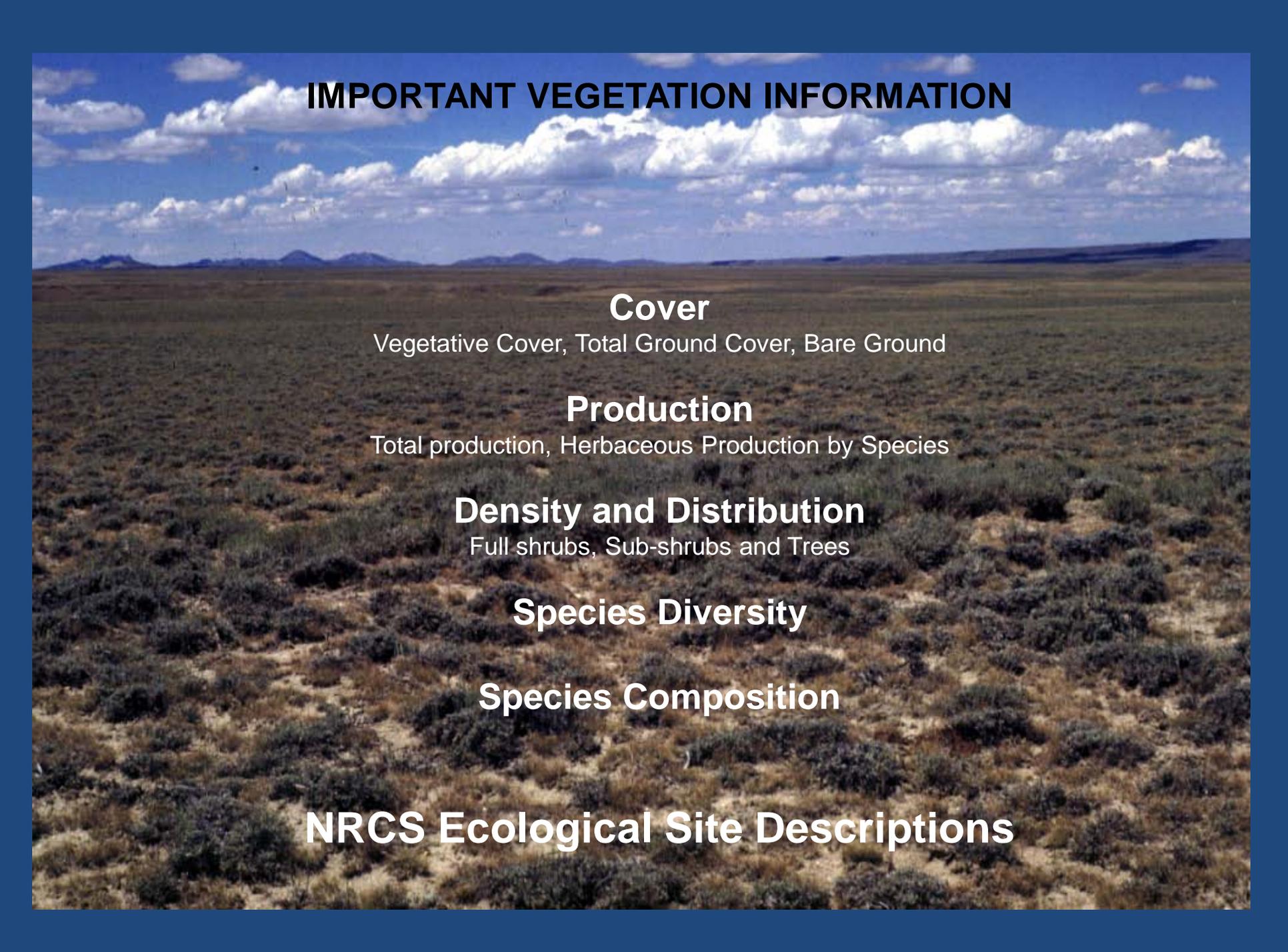
Soil types and distribution

Soil Analyses from samples collected on site

Texture, pH, EC, Organic Matter Content

Depth of suitable plant growth material

(soil salvage depth)



IMPORTANT VEGETATION INFORMATION

Cover

Vegetative Cover, Total Ground Cover, Bare Ground

Production

Total production, Herbaceous Production by Species

Density and Distribution

Full shrubs, Sub-shrubs and Trees

Species Diversity

Species Composition

NRCS Ecological Site Descriptions

RECLAMATION PLAN

Landscape Reconstruction

Topography, stream channels, drainages, impoundments

Topsoil Salvage, Storage and Replacement

approach and schedule

depth of salvage

stockpiling method

tillage

soil amendments

Revegetation

approach and schedule

plant species selection (seed mix)

seedbed preparation

seeding methods

Erosion Control Practices

Weed Control Plan

Site Monitoring Schedule



Reclaimed surface coal mine site east of Rawlins