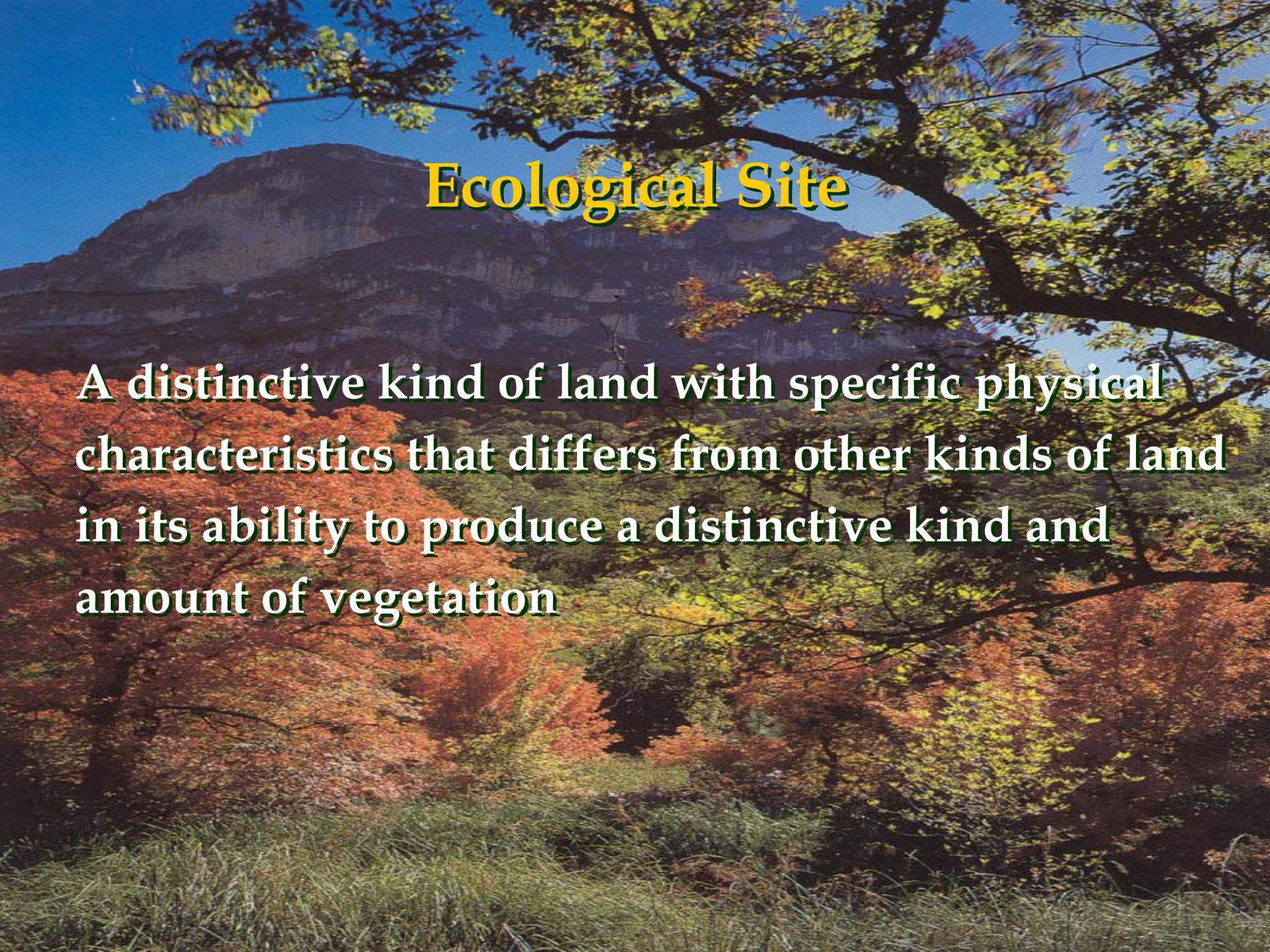


Ecological Site Descriptions:

Contents and Data Requirements

Presented by George Peacock

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Ecological Site

A distinctive kind of land with specific physical characteristics that differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation

Ecological Site

Product of all the environmental factors responsible for its development.

- Soils
- Topography
- Climate
- Hydrology
- Vegetation
- Natural Disturbances
 - Animal Community
 - Fire Regime



Ecological Site Description NRCS Guidance Documents

National Range and Pasture Handbook – Chapter 3,
Section 1 (Rev. 1) – guidance and procedures for development of ESDs

National Range and Pasture Handbook – Chapter 4, Part
600.0402 – procedures for evaluating and rating ecological sites

National Forestry Manual - Part 537.3 – policy, definition,
requirements for forestland ESDs

National Forestry Handbook - Part 637.3 – methodology and
procedures for development of forestland ESDs

Ecological Site Description NRCS Guidance Documents

National Biology Manual – Part 512.3 – concepts and principles used in ESD interpretations

National Soil Survey Manual - Chapter 6 - concepts and principles used in ESD interpretations

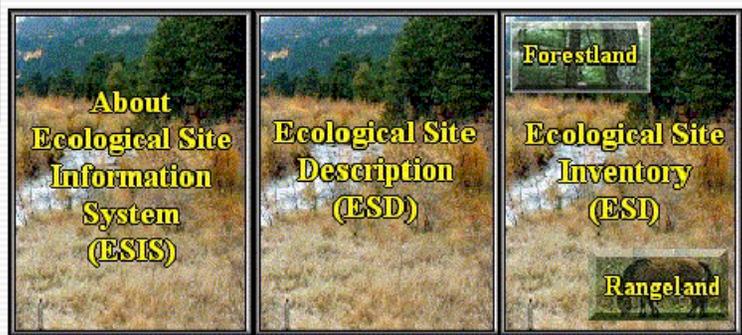
National Soil Survey Handbook – Part 622.07 – policies and responsibilities for soil-ecological site correlation

Agricultural Handbook 296 - Major Land Resource Regions and Major Land Resource Areas of the United States

United States Department of Agriculture
NRCS Natural Resources Conservation Service
Ecological Site Information System

Plants **ESIS** ESD ESI Forestland ESI Rangeland

- Quick Access**
- > About ESIS
 - > ESD Home
 - > ESI-Forestland
 - > ESI-Rangeland



Please address all comments and suggestions about the contents of this Web page to esis@plants.usda.gov

If you are having problems with this Web page, please let us know at plantswebmaster@plants.usda.gov

Last Updated: 11/12/2003

Ecological Site Name

- Brief – Easily Understood
- Based on readily identifiable physical features
 - Soil Features
 - Climate
 - Topography
 - Combinations of these features

EXAMPLE: **GYP UPLAND**

- Not Acceptable
 - Plant names by themselves

Ecological Site Identification Number

EXAMPLE - **R042XC006NM**

R – identifies site type as Rangeland

042X – MLRA - Southern Desertic Basins, Plains, and Mountains

C – Land Resource Unit assigned by state

005 – Unique number assigned by state

NM – Postal code for responsible state – New Mexico

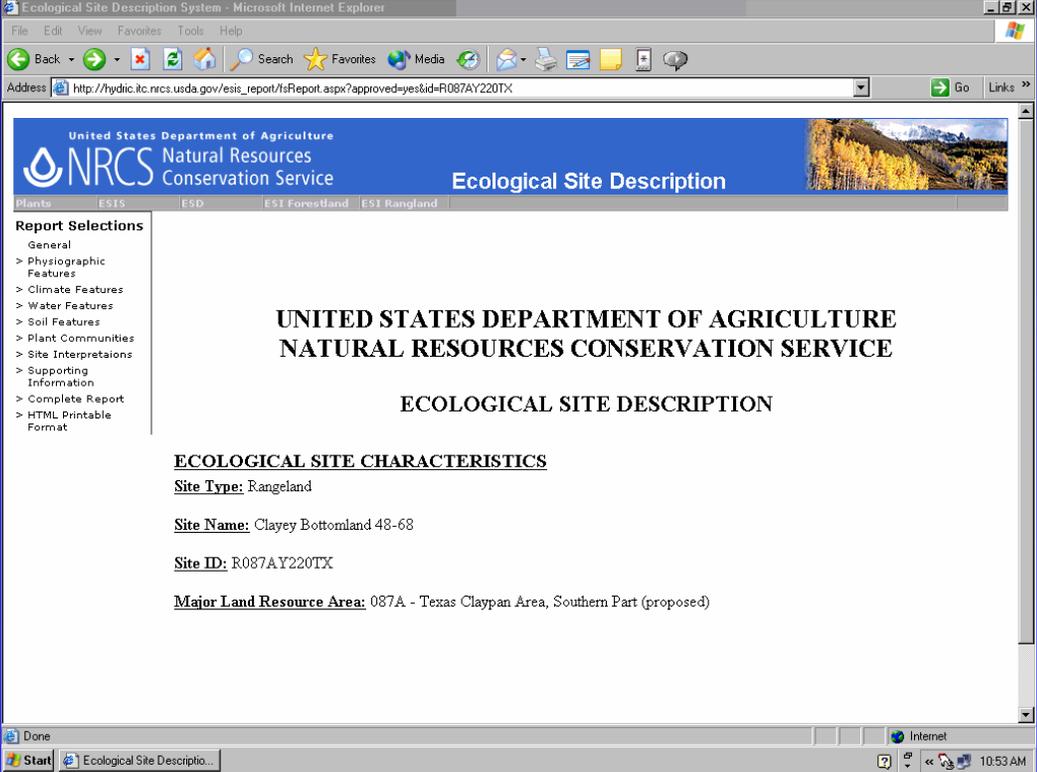
Ecological Site Description

comprehensive reference document containing :

- **Ecological Site Characteristics**
 - Physiographic Features
 - Climatic Features
 - Water Features
 - Soils
- **Plant Communities**
- **Site Interpretations**
- **Supporting Information**

Ecological Site Description Components

- Heading
 - Site Type
 - Site ID Number
 - Site Name
 - MLRA



Ecological Site Description System - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://hydric.itc.nrcs.usda.gov/esis_report/1sReport.aspx?approved=yes&id=R087AY220TX

United States Department of Agriculture
NRCS Natural Resources Conservation Service Ecological Site Description

Plants ESIS ESD ESI Forestland ESI Rangeland

Report Selections

- General
- > Physiographic Features
- > Climate Features
- > Water Features
- > Soil Features
- > Plant Communities
- > Site Interpretations
- > Supporting Information
- > Complete Report
- > HTML Printable Format

**UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE**

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site Name: Clayey Bottomland 48-68

Site ID: R087AY220TX

Major Land Resource Area: 087A - Texas Claypan Area, Southern Part (proposed)

Done Internet

Start Ecological Site Descriptio... 10:53 AM

Ecological Site Description Components

■ Physiographic Features

- Land Form
- Elevation
- Aspect
- Slope
- Water Table Depth
- Flooding (frequency and duration)
- Ponding (depth and duration)
- Runoff Class

Ecological Site Description Components

■ Climatic Features

- Frost-Free Period

- Freeze-Free Period

- Precipitation - Mean Annual

- Precipitation - Monthly Minimum/Maximum

- Temperature - Monthly Minimum/Maximum

Ecological Site Description Components

■ Water Features

- Cowardin Wetland Classification
- Rosgen Stream Classification



Ecological Site Description Components

■ Representative Soil Features

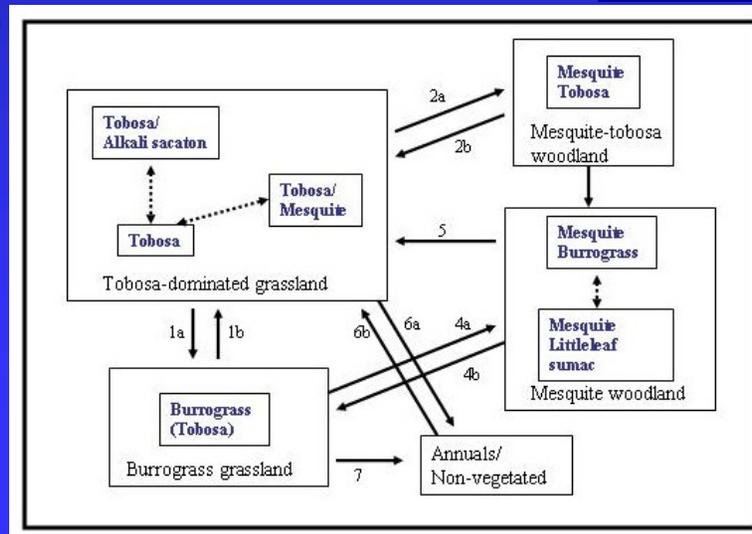
- Parent Materials, Soil Depth
- Texture, Fragments
- Drainage, Permeability
- Available Water Capacity
- Soil Reaction (pH)
- Calcium Carbonate Equivalent
- Electrical Conductivity



Ecological Site Description Components

- Plant Communities
 - Ecological Site Dynamics
 - Narrative Description
 - State and Transition Diagram
 - Narrative
 - Diagram

Deep Redland Ecological Site - Draft
MLRA 81C



Ecological Site Description Components

- **Plant Communities**
 - **Historic Climax Plant Community**
 - **Narrative Description**
 - **Photo**
 - **Plant Species Composition and Production Table**
 - **Production By Plant Type**
 - **Growth Curve Information**
 - **Cover and Structure**

Ecological Site Description Components

- Plant Communities
 - Narrative Description
 - Photo(s)
 - Production By Plant Type
 - Growth Curve Information
 - Cover and Structure



Ecological Site Description Components

- Ecological Site Interpretations
 - Animal Community
 - Plant Preference By Animal Kind
 - Wildlife
 - Livestock



Ecological Site Description Components

■ Ecological Site Interpretations

- Hydrologic Functions
- Recreational Uses
- Wood Products
- Forest Site Productivity
- Other Products
- Other Information



Ecological Site Description Components

- **Supporting Information**
 - **Associated Sites**
 - **Similar Sites**
 - **State Correlation**
 - **Inventory Data References**
 - **Type Locality**
 - **Relationship to Other Classification**
 - **Other References**
 - **Site Description Approval**
 - **Author & Date, Approval & Date**

Data Sources

- **Vegetation Transects**
 - **NRCS, NPS, FS, BLM, ARS, DOD, USFWS, State Agencies, Organizations, etc.**
- **Research Data**
- **Historical records/accounts/journals**
- **Expert knowledge**

Determining Characteristic States of an Ecological Site

- Determine HCPC for site where possible
- Determine other known vegetation states
- Reference sites identified and evaluated
- Productivity and species composition of each plant community evaluated

Descriptions are an approximation – subject to modification as additional knowledge is acquired.

Differentiation Between Ecological Sites

- Significant Differences
 - plant species or groups in HCPC.
 - relative proportion of plant species or groups in HCPC.
 - total annual production of HCPC.

Differentiation Between Ecological Sites

Guidelines for determining significant differences

- Presence or absence of one or more species that make up 10% or more of HCPC by air-dry weight.
- 20% change in composition, by air-dry weight, between any two species in HCPC.

Differentiation Between Ecological Sites

Guidelines for determining significant differences

- Difference in average annual production
 - 50% at 200-500 lb./ac.
 - 30% at 500-1000 lb./ac.
 - 20% at more than 1000 lb./ac.

Guidelines are not absolute...
differences may be greater or less than guidelines indicate

Ecological Site Descriptions Provide

- **State-of-the-science technical information**
- **Common framework for communication of resource information among disciplines, agencies, and organizations**
- **Comprehensive descriptions of interactions among soils, vegetation, and management**

Ecological Site Descriptions Provide

- Benchmark to assess the current condition of natural resources and monitor changes
- Framework to assess management opportunities and predict the outcome of management decisions
- Framework for transfer of experience and knowledge

Ecological Site Descriptions Provide

- Databases for essential data to populate computerized conservation planning tools
 - ArcGIS (Toolkit)
 - Soil Data Viewer
 - Web Soil Survey
 - Grazingland Spatial Analysis Tool (GSAT)

Potential Uses for ESDs and FSGDs

- Standard reference for natural resource information
- Training tool and information source for all NRCS field personnel
- Tool to assess lands for potential values or resource specific concerns
 - wildlife habitat
 - carbon sinks
 - vulnerability to loss or degradation
- Tool to prioritize and target limited program dollars



THANKS

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