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Terrestrial Ecosystems Survey of the Carson National Forest

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Foreword

This Terrestrial Ecosystem Survey contains information that should be used in land planning and management programs on the Carson National Forest. It contains predictions and limitations of soil and vegetation behavior for selected land uses. This survey also highlights hazards or capabilities inherent in the soil and the impact of selected uses on the environment.

This survey is designed for use by various functions. Planners, foresters, range conservationists, biologists, recreation specialists, engineers, and watershed specialists, as well as other professionals or laypersons, can use it to evaluate the potential of the landscape within the Forest.

Many differences in ecosystem properties can occur, even within short distances. Some soils are too shallow or rocky for selected uses or too unstable for foundations, unsurfaced roads, or fill material. Some soils lend themselves better to reforestation or revegetation efforts than others. This survey report can point out ecosystems that may best fit the desired and, as such, should be used as a basis for many resource planning efforts.

Many other ecosystem properties that affect land use are described in this report. The location of each ecosystem or map unit is shown on the 1:24000 scale maps. Each soil in the survey area is described and information on specific uses is given. Additional help in using or applying this information is available from the Soil Scientist.

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Southwestern Region

Terrestrial Ecosystems Survey
of the
Carson National Forest

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The Carson National Forest (see figure 1) is located in northern New Mexico within Rio Arriba, Taos, and parts of Mora and Colfax Counties. The survey area encompasses, including the Valle Vidal Unit, approximately 1,591,144 acres (644,188 hectares) within the total Forest boundaries. Approximately 99,807 acres (40,408 hectares) of other lands within unit boundaries occur as private, state or otherwise alienated lands. An estimated 85,297 acres of wilderness areas and 2,065 acres of national wild and scenic rivers occur within the Forest. (See "Land Areas of the National Forest System, as of September 30, 1985," USDA, Forest Service, FS-383.)

Elevations range from 1830 meters along the Chama River near Abiquiu, to 4012 meters at the summit of Wheeler Peak (the highest point in New Mexico). Average annual precipitation ranges from 25 to more than 90 centimeters. Principle land forms encountered include mountains, hills, scarps, and plains. Vegetation ranges from shrub steppe to alpine tundra. The survey area drains into the Rio Grande, San Juan, Pecos, and Canadian River Basins.

The purpose of a Terrestrial Ecosystem Survey is to map and evaluate the terrestrial ecosystems in the survey area. It can be used to evaluate and adjust land uses to the limitations and potentials of natural resources and the environment. It is also useful for determining areas in which more detailed information is needed.

Climate

The survey area occurs within the northwestern plateau and the northern mountains climatological divisions of New Mexico. The climate is highly variable as a consequence of uneven topography and the wide range in elevation. The climate varies from cold steppe at the lower elevations to alpine tundra at the highest elevations. The information presented in this section is based upon climatic station data, and ranges given may be exceeded at either elevation extremes.

Average annual precipitation ranges from 25 to over 90 centimeters. Precipitation distribution is unimodal with the wet season extending from July through October in the northwestern plateaus and from April through October in the northern mountains. Approximately fifty percent of the average annual precipitation occurs during the low-sun half year period of 01 October through 31 March. Mean annual snowfall ranges from 50 to over 200 centimeters. However, at the lower elevations snow cover does not persist for more than a few days.

Average annual air temperatures ranges from 10 degrees Celsius at the lower elevations to about -3 degrees at higher elevations. For the month of January, mean minimum temperatures range from -18 to -11 degrees Celsius; mean maximum temperatures range from 0 to 4 degrees Celsius. For the month of July, mean minimum temperatures range from 7 to 11 degrees Celsius; mean maximum temperatures range from 24 to 33 degrees Celsius. The average date of the last spring killing freeze ranges from 15 May through 20 June. The average date of the first fall

killing freeze ranges from 10 September through 10 October. Thus the freeze-fr period ranges from approximately 140 days at the lowest elevations to less than days at the highest elevations.

How This Survey Was Made

Mapping was done on 1:24,000 scale aerial photographs. The information was transferred to 1:24,000 scale maps which are included in this report. Mapping u were delineated by steroscopic examination of aerial photographs. The basis of delineations were differences in topography, geology and vegetation. Field documentation was made to identify map unit components and to verify accuracy c the delineations. As a result, 168 terrestrial ecosystems are recognized and mapped. These contain various combinations of soils, miscellaneous land types vegetation communities. Due to the complexity of the survey area, soils are classified to the family level of Soil Taxonomy. This level of survey resulted 120 mapping units or 78 percent of the survey area. The remaining 48 mapping u are Level IV and Level V. Level IV and V mapping units differ from Level III i the classification of the soil component of the ecosystem. Level IV mapping un are classified to the subgroup level of Soil Taxonomy. Level V mapping units a classified to the great group level of Soil Taxonomy. Soils classified at thes levels are highly variable and thus limited in the interpretations made.

How to Use This Report

1. Locate your area of interest on the "Index to Map Sheets" (the last page of publication).

2. Note the number of the map sheet (quad) and turn to that sheet.

3. Locate your area of interest on the map.

4. Note the Map unit symbol(s) that occur in the area of interest.

5. Turn to "Table 1 Acreage, Proportionate Extent and Index to Map Units" which lists the names of each map unit and the page where that map unit is described interpreted.

6. Refer to specific pages for information pertaining to a map unit and its associated interpretations.

7. Use the report in the field and in the office. Add your own comments and observations about how the various map units perform under identified managemen practices.

Use and Management of the Terrestrial Ecosystems

Information in this section of the report presents important properties pertain to the nature and behavioral characteristics of the terrestrial ecosystem. It the basis for making interpretations.

Information can be used for generating additional interpretations. Absence of entry (e.g., ---) indicates that: (1) information was not available, (2) not estimated, or (3) not a concern. The interpretations presented are limited to those currently receiving the most use. Information is presented as an ecological unit. This facilitates evaluation of impacts on the whole unit.

The form entitled "Map Unit Description, Properties and Selected Interpretations" is divided into six sections. These sections are as follows:

1.0 - This section lists information pertaining to the survey area, map symbol, name, and setting. The setting consists of a narrative description of the map unit. The map unit description in this section, along with the maps, can be used to determine the suitability and potential of a terrestrial ecosystem for specific uses. It also can be used to plan the management needed for those uses. Each map unit on the maps represents an area on the landscape and consists of one or more terrestrial ecosystems for which the unit is named.

Four kinds of map units are shown on the maps: consociations, complexes, associations, and undifferentiated groups.

A consociation is a map unit consisting of a single terrestrial ecosystem. An example is Typic Eutroboralfs, LSC, 5, 0, fine, mixed: Pipo/Quga, 15 to 40 percent slopes.

A complex is a map unit consisting of two or more terrestrial ecosystems so intermingled or so small that they cannot be shown separately on the maps at a scale of 1:24,000. Each area of a complex contains some of each of the two or more dominant terrestrial ecosystem, and the pattern and relative proportions are about the same in all areas. The name of a terrestrial ecosystem complex consists of the names of the dominant terrestrial ecosystems. An example is Typic Eutroboralfs, LSC, 5, 0, fine, mixed - Lithic Eutroboralfs, LSC, 5, 0, clayey, mixed: Pipo/Quga, 15 to 40 percent slopes.

An association is a map unit consisting of two or more terrestrial ecosystems that occur as areas large enough to be shown individually on the maps but are shown as one unit because use and management does not justify separation. There is a degree of uniformity in pattern and relative extent of the dominate terrestrial ecosystem, but they can differ greatly one from another. The name of an association consists of the names of the dominant terrestrial ecosystems. An example is Typic Eutroboralfs, LSC, 5, 0, fine, mixed - Lithic Eutroboralfs, LSC, 5, 0, clayey mixed: Pipo/Quga, association, 15 to 40 percent slopes.

An undifferentiated group is a map unit consisting of two or more terrestrial ecosystems that are not consistently associated geographically. They are included in the same map unit because use and management are the same or very similar for common uses. These units are often highly variable in properties. An example is Eutroboralfs and Dystrochrepts, LSC, 5 and 6, frigid: Pipo/Quga and Psmeg, 40 to 120 percent slopes.

Miscellaneous areas can occur as a component in any of the various kinds of map units. Examples are riverwash and rock outcrop.

2.0 - This section contains information by map unit components, characteristics and composition. Terrestrial ecosystems are recognized by the interaction of three major components. These components are soil, climate, and vegetation. Some land areas have little or no soil material and support little or no vegetation.

Examples are rock outcrop, riverwash, etc. Taxa for soil and vegetation are listed in the appropriate column. Miscellaneous areas are also listed in this column. Climate is indicated as a generalized class. Information listed for phase serves as a functional grouping created for a specific purpose. Designated soil phases reflect differences in soil or environmental features that are significant to use and management.

Climatic class locates the terrestrial ecosystem in one of four major climatic areas. These climatic classes are based on the following criteria:

Six month season with greater than one-half of the annual precipitation	Winter Soil Temp.Regime (Forest-Pipo)	
HSM-High sun (HS) 01 April to 30 Sept.	Mild(M)	Mesic
HSC-High sun (HS) 01 April to 30 Sept.	Cold(C)	Frigid
LSM-low sun (LS) 01 Oct. to 31 Mar.	Mild(M)	Mesic
LSC-low sun (LS) 01 Oct. to 31 Mar.	Cold(C)	Frigid

Climax class provides the best evaluation of properties controlling the terrestrial ecosystem. All terrestrial ecosystems must meet a threshold for climatic limits. Deviation from climatic climax is attributed to properties grouped within the following climax classes:

1. Edaphic
2. Topographic
3. Fire
4. Zootic

Often the controlling factor for a particular terrestrial ecosystem is a combination of properties. An example is topo-edaphic. An explanation of the controlling factors is given where appropriate.

Abbreviations

MAP	cm	- mean annual precipitation - centimeters
ME	m	- mean elevation - meters
MAST	deg.C	- mean annual soil temperature - degrees Celsius.
MSST	deg.C	- mean summer soil temperature - degrees Celsius.
Comp.	%	- Map unit composition - percent

The section on landform, slope characteristics, and parent material contains information relevant to a particular terrestrial ecosystem component.

Map unit composition is an indication of map unit purity. It is expressed as a percentage, by area, of the map unit.

3.0 - This section contains information on soil properties. A pedon representing the unit was selected for this use. The soil control section was used for determining soil engineering properties.

This information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced i design and construction of engineering projects.

Intended use is for planning, evaluating land use alternatives, and identification of areas needing specific investigation. Properties can vary significantly within a particular map unit.

Abbreviations

Wt.	-	weight
mm	-	millimeter
Pass.	-	passing
Plast.	-	plasticity
Class.	-	classification
Durat.	-	duration
Hard.	-	hardness
Pot.	-	potential
Tol.	-	tolerance
Cur.	-	current
Nat.	-	natural
RF	-	rock fragments
Veg.	-	vegetation
Lit.	-	litter
BA	-	basal area

Depth to the upper and lower boundaries of each control section is indicated.

USDA texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to weight percentages of sand, silt, and clay in the fraction of soil that is less than 2 millimeters in diameter.

Percent by Wt. (size:mm) refers to the following three fractions of material:

1. less than .002 mm

This is a representation of the mineral soil within the clay fraction. The estimated clay content is given as a percentage, by weight, of the material that is less than 2 millimeters in diameter.

2. greater than 75 mm

3. 5 to 75 mm

Rock fragments are a percentage of the total soil on a dry-weight basis. The percentages are estimates determined by converting field volume estimates to weight percentages.

The percentage of material less than 75 millimeters in diameter that passes each of two sieves (U.S. standard) is estimated for the control section of each soil.

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates of grain-size distribution, liquid limit and plasticity index are rounded to the nearest 5 percent.

The unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 75 millimeters in diameter and according to plasticity index, liquid limit, and organic matter content.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The change is based on the fraction less than 2 millimeters in diameter.

Soil wetness contains information about the depth to the wet state, duration of the wet state and the probable month(s) of occurence of the wet state.

Bedrock is the consolidated material underlying the soil. The rock is described as either soft or hard. If the rock is soft it can be excavated by backhoe or small ripper. If the rock is hard, blasting and/or special equipment is needed for excavations. Rock fits within one of three broad groups (igneous, sedimentary or metamorphic). Where kind of rock is consistent it is listed (granite, limestone, etc.).

Erosion classes are based on estimated soil losses and are useful in evaluating the amount of degradation that has occurred to the soil resource. The two categories for erosion classes are water and wind.

Factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual soil loss by sheet and rill erosion. Soils having the highest K values are the most erodible.

Organic matter is the plant and animal residue in the soil at various stages of decomposition.

Sheet and rill erosion is the estimated rate of annual soil loss as predicted by th Universal Soil Loss Equation (USLE). Since litter can occur over rock fragments th total value for all surface components can exceed 100 percent of an area. Soil los rates are useful as an index, thus are not considered as absolute values. Soil losses are predicted for the four following categories:

1. Potential is the rate of soil loss that would occur under conditions of complete removal of the vegetation and the litter portion of ground cover (maximum rate).

2. Tolerance is the maximum rate of soil loss that can occur while sustainin inherent site productivity.

3. Current is the rate of soil loss occurring under existing conditions of ground cover.

4. Natural is the rate of soil loss that would occur under conditions associated with a climax category (minimum rate).

A value for vegetative ground cover is listed for each soil loss rate. Vegetative ground cover includes vegetation and litter.

Current surface components are represented by the following four major fractions:

Rock fragments (> 2 mm)
Vegetation (Basal area)
Litter (> 2.54 cm)
Soil

4.0 - This section contains interpretations for selected uses.

Explanation of the categories for interpretation follows.

Herbaceous/woody plant growth is an estimate in pounds per acre of the total annual yield (air-dry/normal year) of all plants from the soil surface to a height of 4 1/2 feet.

Forage is an estimate in pounds per acre of the annual yield (air-dry/normal year) of herbaceous/woody plants that may provide food for grazing animals. The zone of estimation is the same as for herbaceous/woody.

Forage maximum is an estimate in pounds per acre of the annual yield (air-dry/normal year) of forage assuming the removal of undesirable plants. This figure is used in evaluating projects where undesirable plants (juniper, etc.) are to be removed and forage production maximized.

The potential productivity of marketable or common trees on a terrestrial ecosystem is expressed as site index. This index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands.

The potential productivity of fuelwood is expressed as cords per acre.

Revegetation potential refers to the probable success and ease in establishment of native grasses. This rating is influenced by climate, kinds of soils, and terrain. The initial stratification by soil climax yields limitations that are not normally economical to mitigate. The rating system is for use with a rangeland drill, broadcast seeder (hand held) and aerial seeding with no consideration for site preparation (removal of trees, etc.).

A low or moderate rating alerts the land manager to potential problems for successful revegetation of an area. Soils associated with a "high" rating offer the best opportunity for success. Separation of the most limiting soil climates leaves a wide range of soil climates to deal with. The udic/frigid combination offers the optimum soil climate for establishment of vegetation.

Reforestation potential refers to the probable success (survival) and ease in establishment of trees (hand and machine planting). This rating is influenced by climate, kinds of soils and terrain. The initial stratification by soil climate separates climatic limitations from remaining variables.

The term "topsoil" describes soil material used to cover an area to improve soil conditions for establishment and maintenance of adapted vegetation. Generally, the organic rich upper part of the soil is most desirable; however, material excavated from deeper layers is also used. In this rating, the upper 100 centimeters of soil material is evaluated for its use as topsoil.

Roadfill suitabilities pertain to the use of soils in the construction of roadfill. Roadfill consists of soil material that is excavated from its original position and used in road embankments elsewhere.

Wildlife habitat classes are a subjective correlation between the importance of a terrestrial ecosystem for selected wildlife species.

Timber harvest limitations are limits to be considered when evaluating the impact o timber harvest with regard to maintenance of soil productivity. Limits relate to year-round or seasonal use of equipment as the result of climate, soil characteristics, and landform.

A moderate or severe rating directs the land manager to areas that require some measure of mitigation in order to avoid impairment of soil productivity. Logging systems can be employed that will adequately overcome many limitations. Seasons of logging can often be used to mitigate soil moisture problems (dry season or frozen/snow cover). Restrictions on slopes over 40 percent can be mitigated by a system of cable logging. Rock fragment classes 6 or 7 on level slopes will restric access by tractor logging and probably cannot be overcome.

Cutbank stability (slumps) limits are for exposures of vertical cuts.

A rating for cutbank stability provides the land manager with information useful in the selection of road location and consequent use. An important assumption is that the rating is associated with the most limiting condition.

Unsurfaced road limitations pertain to the use of soils in place for roads. These roads are of low design and minimum construction cost (e.g., haul roads, etc.).

A moderate or severe rating alerts the land manager to problems in construction and maintenance of this category of roads. The majority are temporary, therefore, will receive a minimum of maintenance. Use of this information will allow for consideration of alternate routes avoiding mitigating problems and/or severe damage to the soil resource.

Trail limitations pertains to the use of soils in the construction of trails.

Campground limitations pertains to the use of soils in the construction and maintenance of developed campgrounds.

Wheeled off-road vehicle (ORV) limitations are limits on the use of this type of recreational activity.

Erosion hazard is predicted on the basis of relative susceptibility to erosion upor removal of vegetation and litter. Three classes are used.

Mass wasting is a general term for a variety of processes by which large masses of earth material are moved by gravity, either slowly or quickly from one place to another. This rating provides the land manager with information dealing with inherent stability.

Windthrow hazard is based on the probability of trees being up-rooted by the wind a a result of insufficient depth and strength of the soil to give adequate root anchorage.

Plant competition is based on the probability of the invasion or growth of undesirable plant species when openings are made in the woodland or forest canopy.

5.0 - Vegetation is described in this report as canopy coverage. Each species is assigned an average cover value representing the mean coverage of the modal vegetation associated with the mapping unit component. Modal vegetation is a synthetic description of vegetation representing the center of its sample variability. The sample variability for a particular vegetation type includes the range of coverage values for each species. The coverage values are therefore abstract generalities about vegetation potential over the mapping unit.

Vegetation reported as canopy coverage is a criterion of the relative dominance of each species, of potential productivity, of the influence of plants on precipitation interception and soil temperatures, and of the value of vegetation to animals.

Canopy coverage is applicable to all terrestrial ecosystems because of the importance of sunlight coming from above. The use of canopy coverage permits all plants ranging in size from small herbs to large trees to be compared on a common basis, whether or not different sized plots are used to measure plants of different stature. Evaluations precise enough for research or inventory purposes usually do not require lengthy field time.

6.0 - This section contains additional information relevant to management of the terrestrial ecosytem component. Unique natural features are also listed in this section.

TERRESTRIAL ECOSYSTEM SURVEY — USDA-FS R3

Map Unit Description, Properties and Selected Interpretations

1.0 Date: December , 1984
Survey Area: Carson National Forest
Map Symbol and Name: 70 - Pachic Argiborolls, LSC, 5, -1, fine-loamy, mixed - Pachic Argiborolls, LSC, 5, -1, fine, mixed, deep, loams: Artr2/Bogr2, 0 to 15 percent slopes

Setting: This map unit consists of multitaxa Terrestrial Ecosystem components. Components .1 and .2 occur in an intricate patter and are not separable. It occurs on valley plains with concave slopes. Mean annual precipitation ranges from 40 to 60 centimeters; mean annual air temperature ranges from 5 to 7 degrees Celsius. Approximately 55 percent of the mean annual precipitation occurs during the period of 01 October to 31 March and winters are cold (LSC). Continuous snow normally occurs on this map unit from November 1 to April 15. This map unit has a mean annual snowfall of 110 centimeters and a mean annual snow accumulation of 30 centimeters. The freeze free period is 110 days. Elevations range from 2100 to 2350 meters. Delineations are irregular and vary in size from 8 to 1000 hectares. Ephemeral streams are present within the map unit. This map unit is characterized by a dendritic drainage pattern.

2.0 Map Unit Components, Characteristics and Composition.

Soil	Phase	Clim. Class	Vegetation	Climax Class Edaph.	MAP cm / ME m / MAST deg.C / MSST deg.C	Landform; Slope Characteristics; Parent Material.	Map Unit Comp %
2.1 Pachic Argiborolls --- fine-loamy,mixed ---	deep --- loam ---	LSC 5 -1	Artr2/Bogr2	Edaph. zootic	50 cm 2300 m 7 deg.C 13 deg.C	Valley plains; simple concave slopes, average slope length of 30 meters, average gradient of 2 percent; mixed alluvial parent material derived from sandstone and shale.	50
2.2 Pachic Argiborolls --- fine, mixed ---	deep --- loam ---	LSC 5 -1	Artr2/Bogr2	Edaph. zootic	50 cm 2300 m 7 deg.C 13 deg.C	Valley plains; simple concave slopes, average slope length of 30 meters, average gradient of 2 percent; mixed alluvial parent material derived from sandstone and shale.	50
2.3					cm m deg.C deg.C		
2.4					cm m deg.C deg.C		
2.5					cm m deg.C deg.C		
2.6					cm m deg.C deg.C		

3.0 Estimated Soil Properties.

3.1 Pachic Argiborolls, fine-loamy, mixed

Depth cm	USDA Texture	% by Wt. (size: mm) <.002	>75	5-75	% Pass. Sieve No 4	No 200	Liquid Limit	Plast. Index	Unified Class.	Shrink Swell
5-36	SCL	22	0	5	95	35-55	30	10	SC-CL	Low

Soil Wetness Depth	Durat.	Months	Sheet/Rill Erosion Pot.	Tol.	Cur.	Nat.
3	C	Feb-Apr	Rate - t/ha/yr			
Bedrock Hard.	Kind	Factor K	4.2	9.0	1.1	0.1
---	---	.37	% Veg. Ground Cover 0	---	30	80

Management Implications: These soils generally respond well to seeding/plowing and fertilization. Construction of roads may require fill material due to localized wetness.	Erosion Class Water	Wind	Organic Matter %	% Cur. Surface Comp. RF >2mm	Veg. BA	Lit.	Soil
	1	---	4.0	5	15	15	65

3.2 Pachic Argiborolls, fine, mixed

Depth cm	USDA Texture	% by Wt. (size: mm) <.002	>75	5-75	% Pass. Sieve No 4	No 200	Liquid Limit	Plast. Index	Unified Class.	Shrink Swell
6-56	CL	38	0	5	95	70-80	45	15	CL	Mod.

Soil Wetness Depth	Durat.	Months	Sheet/Rill Erosion Pot.	Tol.	Cur.	Nat.
3	C	Feb-Apr	Rate - t/ha/yr			
Bedrock Hard.	Kind	Factor K	4.2	9.0	1.1	0.1
---	---	.37	% Veg. Ground Cover 0	---	30	80

Management Implications: These soils generally respond well to seeding/plowing and fertilization. Construction of roads may require fill material due to localized wetness.	Erosion Class Water	Wind	Organic Matter %	% Cur. Surface Comp. RF >2mm	Veg. BA	Lit.	Soil
	1	---	4.0	5	15	15	65

3.3

Depth cm	USDA Texture	% by Wt. (size: mm) <.002	>75	5-75	% Pass. Sieve No 4	No 200	Liquid Limit	Plast. Index	Unified Class.	Shrink Swell
---	---	---	---	---	---	---	---	---	---	---

Soil Wetness Depth	Durat.	Months	Sheet/Rill Erosion Pot.	Tol.	Cur.	Nat.
---	---	---	Rate - t/ha/yr			
Bedrock Hard.	Kind	Factor K	---	---	---	---
---	---	---	% Veg. Ground Cover ---	---	---	---

Management Implications: ---	Erosion Class Water	Wind	Organic Matter %	% Cur. Surface Comp. RF >2mm	Veg. BA	Lit.	Soil
	---	---	---	---	---	---	---

3.4

Depth cm	USDA Texture	% by Wt. (size: mm) <.002	>75	5-75	% Pass. Sieve No 4	No 200	Liquid Limit	Plast. Index	Unified Class.	Shrink Swell
---	---	---	---	---	---	---	---	---	---	---

Soil Wetness Depth	Durat.	Months	Sheet/Rill Erosion Pot.	Tol.	Cur.	Nat.
---	---	---	Rate - t/ha/yr			
Bedrock Hard.	Kind	Factor K	---	---	---	---
---	---	---	% Veg. Ground Cover ---	---	---	---

Management Implications: ---	Erosion Class Water	Wind	Organic Matter %	% Cur. Surface Comp. RF >2mm	Veg. BA	Lit.	Soil
	---	---	---	---	---	---	---

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TERRESTRIAL ECOSYSTEM SURVEY
Interpretations

Map Symbol: 70
Present Major Uses: Pipelines, roads, wildlife, range, stock tanks
Potential Forseeable Uses: Pipelines, roads, wildlife, range, stock tanks

Interpretations for Selected Uses:				
Unit Components	4.1	4.2	4.3	4.4
Potential Productivity				
Grazing		lb/ac/yr - Dry Weight		
Herbaceous/woody	2500	2500		
Forage	2000	2000		
Forage (maximum)	2500	2500		
Timber		Site Index		
	---	---		
Fuelwood		cd/ac		
	---	---		
Potential for:		Rating		
Revegetation	High	High		
Reforestation	High	High		
Source Suitability:				
Topsoil	Good	Fair		
Roadfill	Fair	Poor		
		Low Str.		
Wildlife Habitat Suit:				
Elk	Important	Important		
Mule deer	Important	Important		
Turkey	Used	Used		
Limitations For:				
Timber Harvest	---	---		
Cutbank Stability	---	---		
Unsurfaced Roads	Moderate	Severe		
		Low Str.		
Trails	Slight	Severe		
		Low Str.		
Campgrounds	Severe	Severe		
	Wet	Wet		
Wheeled O.R.V.	Severe	Severe		
	Low Str.	Low Str.		
Management Problems:				
Erosion(Sheet & Rill)	Severe 1/	Severe 1/		
Mass Wasting	---	---		
Windthrow	---	---		
Plant Competition	Severe	Severe		
	Artr2	Artr2		

5.0 Composition of Plant Community:						
Map Unit Components		5.1	5.2	5.3	5.4	
Scientific Name	Symbol	% Canopy Cover				
Pinus ponderosa	Pipo	tr.	tr.			
Juniperus scopulorum	Jusc2	tr.	tr.			
Artemisia tridentata	Artr2	50	50			
Chrysothamnus nauseosus	Chna2	1.0	1.0			
Gutierrezia sarothrae	Gusa2	tr.	tr.			
Quercus gambelii	Quga	P	P			
Achillea millefolium lan.	Acml1	3.5	3.5			
Antennaria rosea	Anro2	tr.	tr.			
Artemisia frigida	Arfr4	1.0	1.0			
Erigeron flagellaris	Erfl	0.5	0.5			
Hymenoxys richardsonii	Hyri	0.2	0.2			
Lupinus argenteus	Luar3	tr.	tr.			
Taraxacum officinale	Taof	0.5	0.5			
Vicia americana	Viam	tr.	tr.			
Agropyron intermedium	Agin2	---	---			
A. cristatum	Agcr	---	---			
Carex	Carex	1.0	1.0			
Bouteloua gracilis	Bogr2	20.	20.			
Koeleria cristata	Kocr	2.0	2.0			
Poa pratensis	Popr	tr.	tr.			
Sitanion hystrix	Sihy	1.0	1.0			

6.0 Mangement Implications:
6.1 1/ Unit is susceptible to gullying where adaquate ground cover is removed (compare to unit 71);

6.2 1/ Unit is susceptible to gullying where adaquate ground cover is removed (compare to unit 71);

6.3

6.4

Notes: Pinus ponderosa occurs as trace amounts in this unit; no site index given.
This unit is commonly seeded with Agropyron cristatum and Trifolium sp.

TERRESTRIAL ECOSYSTEM SURVEY — USDA-FS
Map Unit Description, Properties and Selected Interpretations — R3

1.0 Date: December , 1984
Survey Area: Carson National Forest
Map Symbol and Name: 721 - Typic Eutroboralfs, LSC, 5, -1, fine-loamy, mixed - Typic Eutroboralfs, LSC, 5, -1, fine, mixed, and Lithic Ustorthents, LSC, 5, -1, frigid, sandy loam soils: Pipo/Pied/Quga/Artr2 and Rock outcrop, 0 to 40 percent slopes.
Setting: This map unit consists of multitaxa Terrestrial Ecosystem components. Components occur in a random pattern and are not separable. Map unit composition is variable, and any particular component may or may not occur in a single delineation. It occurs on plains, scarps, and hills with simple convex slopes. Mean annual precipitation ranges from 45 to 55 centimeters; mean annual air temperature ranges from 5 to 6 degrees Celsius. Approximately 55 percent of the mean annual precipitation occurs during the period of 01 October to 31 March and winters are cold (LSC). Patchy snow cover normally occurs on this map unit from November 1 to April 15. This unit has a mean annual snowfall of 110 centimeters and a mean annual snow accumulation of 30 centimeters. The freeze free period is 110 days. Elevations range from 2200 to 2500 meters. Delineations are irregular and vary in size from 8 to 1500 hectares. Ephemeral streams are present within the map unit. This map unit is characterized by a dendritic drainage pattern.

2.0 Map Unit Components, Characteristics and Composition.

Soil	Phase	Clim. Class	Vegetation	Climax Class	MAP / ME / MAST / MSST	Landform; Slope Characteristics; Parent Material.	Map Unit Comp %
2.1 Typic Eutroboralfs, --- fine-loamy,mixed ---	--- sandy loam ---	LSC 5 -1	Pipo/Pied/ Quga/Artr2	Edaph.	50 cm 2300 m 7 deg.C 13 deg.C	Plains, hills, and scarps; simple convex slopes, average slope length of 15 meters, average gradient of 18 percent; residuum parent material derived from sandstone and shale.	---
2.2 Typic Eutroboralfs, --- fine, mixed ---	--- sandy loam ---	LSC 5 -1	Pipo/Pied/ Quga/Artr2	Edaph.	50 cm 2300 m 7 deg.C 13 deg.C	Plains, hills, and scarps; simple convex slopes, average slope length of 15 meters, average gradient of 18 percent; residuum parent material derived from sandstone and shale.	---
2.3 Lithic Ustorthents, --- --- frigid	--- --- sandy loam ---	LSC 5 -1	Pipo/Pied/ Quga/Artr2	Edaph.	50 cm 2600 m 7 deg.C 13 deg.C	Plains, hills, and scarps; simple convex slopes, average slope length of 10 meters, average gradient of 10 percent; residuum parent material derived from sandstone and shale.	---
2.4 Rock Outcrop	---	---	Barren	---	--- cm m deg.C deg.C	Sandstone and shale of the San Jose Formation.	---
2.5					cm m deg.C deg.C		
2.6					cm m deg.C deg.C		

3.0 Estimated Soil Properties.

3.1 Typic Eutroboralfs, LSC, 5, -1, fine-loamy, mixed, sandy loam

Depth	USDA	% by Wt. (size: mm)			% Pass. Sieve		Liquid	Plast.	Unified	Shrink	Soil Wetness			Sheet/Rill Erosion			
cm	Texture	<.002	>75	5-75	No 4	No 200	Limit	Index	Class.	Swell	Depth	Durat.	Months	Pot.	Tol.	Cur.	Nat.
8-30	SCL	30	0	T	100	85	35	10	CL	Low	---	---	---	Rate - t/ha/yr			
											Bedrock		Factor	33	6.7	1.4	1.0
											Hard.	Kind	K	% Veg. Ground Cover			
											Hard	Ss.	.24	0	40	75	80

Management Implications:

Erosion Class		Organic Matter	% Cur. Surface Comp.			
Water	Wind	%	RF >2mm	Veg. BA	Lit.	Soil
1	---	.5	0	15	60	25

3.2 Typic Eutroboralfs, LSC, 5, -1, fine, mixed, sandy loam

Depth	USDA	% by Wt. (size: mm)			% Pass. Sieve		Liquid	Plast.	Unified	Shrink	Soil Wetness			Sheet/Rill Erosion			
cm	Texture	<.002	>75	5-75	No 4	No 200	Limit	Index	Class.	Swell	Depth	Durat.	Months	Pot.	Tol.	Cur.	Nat.
7-57	CL	38	0	T	100	80	40	15	CL	Mod.	---	---	---	Rate - t/ha/yr			
											Bedrock		Factor	33	6.7	1.4	1.0
											Hard.	Kind	K	% Veg. Ground Cover			
											---	---	.24	0	40	75	80

Management Implications:

Erosion Class		Organic Matter	% Cur. Surface Comp.			
Water	Wind	%	RF >2mm	Veg. BA	Lit.	Soil
		.5	0	15	60	25

3.3 Lithic Ustorthents, LSC, 5, -1, frigid

Depth	USDA	% by Wt. (size: mm)			% Pass. Sieve		Liquid	Plast.	Unified	Shrink	Soil Wetness			Sheet/Rill Erosion			
cm	Texture	<.002	>75	5-75	No 4	No 200	Limit	Index	Class.	Swell	Depth	Durat.	Months	Pot.	Tol.	Cur.	Nat.
	---										---	---	---	Rate - t/ha/yr			
											Bedrock		Factor	---	---	---	---
											Hard.	Kind	K	% Veg. Ground Cover			
													.24				

Management Implications: Component too variable for specific engineering analysis. These are shallow soils - less than 50 centimeters to bedrock. Erosion rates are not included for this component, but meet or exceed the tolerance level.

Erosion Class		Organic Matter	% Cur. Surface Comp.			
Water	Wind	%	RF >2mm	Veg. BA	Lit.	Soil
1-2						

3.4 Rock outcrop

Depth	USDA	% by Wt. (size: mm)			% Pass. Sieve		Liquid	Plast.	Unified	Shrink	Soil Wetness			Sheet/Rill Erosion			
cm	Texture	<.002	>75	5-75	No 4	No 200	Limit	Index	Class.	Swell	Depth	Durat.	Months	Pot.	Tol.	Cur.	Nat.
														Rate - t/ha/yr			
											Bedrock		Factor				
											Hard.	Kind	K	% Veg. Ground Cover			

Management Implications: ---

Erosion Class		Organic Matter	% Cur. Surface Comp.			
Water	Wind	%	RF >2mm	Veg. BA	Lit.	Soil

2550-6
11/17/83

TERRESTRIAL ECOSYSTEM SURVEY
Interpretations

Map Symbol: 721
Present Major Uses: Wildlife, pipelines, road location, grazing
Potential Forseeable Uses: Wildlife, pipelines, road location, grazing

4.0 Interpretations for Selected Uses:

Map Unit Components	4.1	4.2	4.3	4.4
Potential Productivity				
Grazing		lb/ac/yr - Dry Weight		
Herbaceous/woody	800	800	700	---
Forage	175	175	75	---
Forage (maximum)	2000	2000	1200	---
Timber		Site Index		
Pipo	55	55	45	---
Fuelwood		cd/ac		
Pied; Juniperus	4	4	3	
Potential for:		Rating		
Revegetation	Moderate	Moderate	Moderate	
Reforestation	Low	Low	Low	
	Too Dry	Too Dry	Too Dry	
Source Suitability:				
Topsoil	Fair	Fair	Fair	
Roadfill	Poor	Poor	Poor	
	Low str.	Low str.	Shallow	
Wildlife Habitat Suit:				
Elk	Important	Important	Important	
Albert's squirrel	Important	Important	Important	
Plains titmouse	Used	Used	Used	
Turkey	Important	Important	Important	
Limitations For:				
Timber Harvest	Moderate	Moderate	Severe	
			Shallow	
Cutbank Stability	Moderate	Moderate	Slight	
Unsurfaced Roads	Moderate	Moderate	Severe	
	Low Str.	Low Str.	Shallow	
Trails	Moderate	Moderate	Moderate	
	Slope	Slope	Slope	
Campgrounds	Severe	Severe	Severe	
	Slope	Slope	Slope	
Wheeled O.R.V.	Severe	Severe	Slight	
	Low Str.	Low Str.		
Management Problems:				
Erosion(Sheet & Rill)	Severe	Severe	Severe	
Mass Wasting	---	---	---	
Windthrow	Slight	Slight	Slight	
Plant Competition	Severe	Severe	Severe	
	Quga	Quga	Quga	

5.0 Composition of Plant Community:

Map Unit Components		5.1	5.2	5.3	5.4
Scientific Name	Symbol	% Canopy Cover			
Juniperus osteosperma	Juos	5.0	5.0	2.0	---
Juniperus scopulorum	Jusc2	5.0	5.0	3.0	
Pinus edulis	Pied	15.	15.	15.	
P. ponderosa	Pipo	30.	30.	20.	
Arctostaphylos uva-ursi	Aruv	0.2	0.2	0.1	
Artemisia tridentata	Artr2	5.0	5.0	5.0	
Berberis repens	Bere	tr.	tr.	tr.	
Ceanothus fendleri	Cefe	tr.	tr.	tr.	
Cercocarpus montanus	Cemo2	tr.	tr.	tr.	
Gutierrezia sarothrae	Gusa2	tr.	tr.	tr.	
Purshia tridentata	Putr5	4.0	4.0	2.0	
Quercus gambelii	Quga	3.0	3.0	2.0	
Yucca glauca	Yugl	tr.	tr.	tr.	
Achillea millefolium lan.	Acmil	1.0	1.0	1.0	
Antennaria rosea	Anro2	tr.	tr.	tr.	
Castilleja occidentalis	Caoc4	tr.	tr.	tr.	
Eriogonum jamesii	Erja	0.2	0.2	0.2	
Chrysopsis villosa	Chvi6	0.1	0.1	0.1	
Erigeron flagellaris	Erfl	1.0	1.0	1.0	
Hymenoxys richardsonii	Hyri	0.1	0.1	0.1	
Blepharoneuron trichoplepsis	Bltr	0.1	0.1	0.1	
Bouteloua curtipendula	Bocu	0.1	0.1	0.1	
B. gracilis	Bogr2	3.0	3.0	3.0	
Carex	Carex	1.0	1.0	0.5	
Festuca arizonica	Fear2	1.0	1.0	0.2	
Koeleria cristata	Kocr	1.0	1.0	1.0	
Oryzopsis hymenoides	Orhy	tr.	tr.	0.2	
Poa fendleriana	Pofe	1.0	1.0	0.5	
Sitanion hystrix	Sihy	1.0	1.0	0.5	

6.0 Mangement Implications:

6.1

6.2

6.3

6.4

Notes: This map unit occurs primarily on the Jicarilla R.D.

TERRESTRIAL ECOSYSTEM SURVEY — USDA-FS
Map Unit Description, Properties and Selected Interpretations — R3

1.0 Date: December , 1984
Survey Area: Carson National Forest
Map Symbol and Name: 731 - Typic Eutroboralfs, LSC, 5, -1, fine-loamy, mixed - Udic Ustochrepts, LSC, 5, -1, frigid, and Typic Ustorthents, LSC, 5, -1, frigid, bouldery loam soils: Pipo/Pied/Quga/Artr2, and Rock outcrop, 15 to 80 percent slopes.

Setting: This map unit consists of multitaxa Terrestrial Ecosystem components. Components occur in a random pattern and are consistantly associated geographically. Map unit composition is variable, and any particular component may or may not occur in a single delineation. It occurs on scarps and hills with complex slopes. Mean annual precipitation ranges from 45 to 55 centimeters; mean annual air temperature ranges from 5 to 7 degrees Celsius. Approximately 55 percent of the mean annual precipitation occurs during the period of 01 October to 31 March and winters are cold (LSC). Continuous snow cover normally occurs on this unit from November 1 to April 15. This unit has a mean annual snowfall of 110 centimeters and a mean annual snow accumulation of 30 centimeters. The freeze free period is 110 days. Elevations range from 2150 to 2500 meters. Delineations are irregular and vary in size from 8 to 1900 hectares. Ephemeral streams are present within the map unit. This map unit is characterized by a dendritic drainage pattern.

2.0 Map Unit Components, Characteristics and Composition.

Soil	Phase	Clim. Class	Vegetation	Climax Class	MAP / ME / MAST / MSST	Landform; Slope Characteristics; Parent Material.	Map Unit Comp %
2.1 Typic Eutroboralfs, --- fine-loamy, mixed ---	--- bouldery loam ---	LSC 5 -1	Pipo/Pied/ Quga/Artr2	Edaph.	50 cm 2300 m 7 deg.C 13 deg.C	Scarps and hills; complex slopes, average slope length of 15 meters, average gradient of 38 percent; residual parent material derived from sandstone.	---
2.2 Udic Ustochrepts, --- --- frigid	--- bouldery loam ---	LSC 5 -1	Pipo/Pied/ Quga/Artr2	Edaph.	50 cm 2300 m 7 deg.C 13 deg.C	Scarps and hills; complex slopes, average slope length of 15 meters, average gradient of 38 percent; residual parent material derived from sandstone and shale.	---
2.3 Typic Ustorthents, --- --- frigid	--- bouldery loam ---	LSC 5 -1	Pipo/Pied/ Quga/Artr2	Edaph.	50 cm 2300 m 7 deg.C 13 deg.C	Scarps and hills; complex slopes, average slope length of 15 meters, average gradient of 38 percent; residual parent material derived from sandstone and shale.	---
2.4 Rock Outcrop	---	---	Barren	---	--- cm m deg.C deg.C	Sandstone Rock outcrop of the San Jose Formation.	---
2.5					cm m deg.C deg.C		
2.6					cm m deg.C deg.C		

3.0 Estimated Soil Properties.

3.1 Typic Eutroboralfs, fine-loamy, mixed

Depth cm	USDA Texture	% by Wt. (size: mm) <.002	>75	5-75	% Pass. Sieve No 4	No 200	Liquid Limit	Plast. Index	Unified Class.	Shrink Swell
14-56	CB-CL	33	40	0	100	75	40	15	CL	Low

Soil Wetness Depth	Durat.	Months
---	---	---
Bedrock Hard.	Kind	Factor K
Hard	Ss.	.37

Sheet/Rill Erosion Pot.	Tol.	Cur.	Nat
Rate - t/ha/yr			
90.	6.7	5.0	3.0
% Veg. Ground Cover			
0	65	70	80

Management Implications:

Erosion Class Water	Wind	Organic Matter %	% Cur. Surface Comp. RF >2mm	Veg. BA	Lit.	Soi
1	---	0.5	20	15	55	10

3.2 Udic Ustochrepts, LSC, 5, -1, frigid

Depth cm	USDA Texture	% by Wt. (size: mm) <.002	>75	5-75	% Pass. Sieve No 4	No 200	Liquid Limit	Plast. Index	Unified Class.	Shrink Swell
	---									

Soil Wetness Depth	Durat.	Months
Bedrock Hard.	Kind	Factor K

Sheet/Rill Erosion Pot.	Tol.	Cur.	Nat
Rate - t/ha/yr			
% Veg. Ground Cover			

Management Implications: Subsoil too variable for interpretations. Erosion rates are similiar to component 3.1

Erosion Class Water	Wind	Organic Matter %	% Cur. Surface Comp. RF >2mm	Veg. BA	Lit.	Soi

3.3 Typic Ustorthents, LSC, 5, -1, frigid

Depth cm	USDA Texture	% by Wt. (size: mm) <.002	>75	5-75	% Pass. Sieve No 4	No 200	Liquid Limit	Plast. Index	Unified Class.	Shrink Swell
	---									

Soil Wetness Depth	Durat.	Months
Bedrock Hard.	Kind	Factor K

Sheet/Rill Erosion Pot.	Tol.	Cur.	Nat
Rate - t/ha/yr			
% Veg. Ground Cover			

Management Implications: Subsoil too variable for interpretations. Erosion rates are similiar to component 3.1.

Erosion Class Water	Wind	Organic Matter %	% Cur. Surface Comp. RF >2mm	Veg. BA	Lit.	So

3.4 Rock outcrop

Depth cm	USDA Texture	% by Wt. (size: mm) <.002	>75	5-75	% Pass. Sieve No 4	No 200	Liquid Limit	Plast. Index	Unified Class.	Shrink Swell
	---									

Soil Wetness Depth	Durat.	Months
Bedrock Hard.	Kind	Factor K

Sheet/Rill Erosion Pot.	Tol.	Cur.	Nat
Rate - t/ha/yr			
% Veg. Ground Cove			

Management Implications: Nearly vertical exposures of sandstone rock outcrop limit management potentials.

Erosion Class Water	Wind	Organic Matter %	% Cur. Surface Comp RF >2mm	Veg. BA	Lit.	So

2550-
11/17/8

TERRESTRIAL ECOSYSTEM SURVEY
Interpretations

Map Symbol: 731
Present Major Uses: Wildlife habitat, recreation
Potential Forseeable Uses: Wildlife habitat, recreation

Interpretations for Selected Uses:				
Unit Components	4.1	4.2	4.3	4.4
Potential Productivity				
Grazing		lb/ac/yr - Dry Weight		
Herbaceous/woody	750	725	700	---
Forage	125	100	75	
Forage (maximum)	1800	1550	1475	
Timber		Site Index		
Pipo	50	50	45	
Fuelwood		cd/ac		
	4	3	2	
Potential for:		Rating		
Revegetation	Low	Low	Low	
	Too Steep	Too Steep	Too Steep	
Reforestation	Low	Low	Low	
	Too Steep	Too Steep	Too Steep	
Source Suitability:				
Topsoil	Poor	Poor	Poor	
	Too Steep	Too Steep	Too Steep	
Roadfill	Fair-Poor	Fair-Poor	Fair-Poor	
	Too Steep	Too Steep	Too Steep	
Wildlife Habitat Suit:				
Elk	Used	Used	Used	
Mule deer	Used	Used	Used	
Red tail hawk	Important	Important	Important	
Abert's squirrel	Important	Important	Important	
Plain titmouse	Important	Important	Important	
Limitations For:				
Timber Harvest	Moderate	Moderate	Moderate	
	Low Str.	Low Str.	Low Str.	
Cutbank Stability	Mod.-Severe	Mod.-Severe	Mod.-Severe	
	Low Str.	Low Str.	Low Str.	
Unsurfaced Roads	Mod.-Severe	Mod.-Severe	Mod.-Severe	
	Too Steep	Too Steep	Too Steep	
Trails	Mod.-Severe	Mod.-Severe	Mod.-Severe	
	Too Steep	Too Steep	Too Steep	
Campgrounds	Severe	Severe	Severe	
	Too Steep	Too Steep	Too Steep	
Wheeled O.R.V.	Severe	Severe	Severe	
	Low Str.	Low Str.	Low Str.	
Management Problems:				
Erosion(Sheet & Rill)	Severe	Severe	Severe	
Mass Wasting	---	---	---	
Windthrow	Slight-Mod.	Slight-Mod.	Slight-Mod.	
Unit Competition				
	Severe	Severe	Severe	
	Quga	Quga	Quga	

5.0 Composition of Plant Community:					
Map Unit Components		5.1	5.2	5.3	5.4
Scientific Name	Symbol	% Canopy Cover			
Juniperus monosperma	Jumo	1.0	1.0	1.0	---
J. osteosperma	Juos	4.0	1.0	1.0	
Pinus edulis	Pied	15.	15.	15.	
P. ponderosa	Pipo	30.	30.	30.	
Arctospaphylos uva-ursi	Aruv	1.0	1.0	1.0	
Artemisia tridentata	Artr2	15.	15.	12.	
Cercocarpus montanus	Cemo2	0.2	1.0	1.0	
Gutierrezia sarothrae	Gusa2	tr.	tr.	tr.	
Purshia tridentata	Putr5	2.0	1.0	1.0	
Quercus gambelii	Quga	4.0	5.0	5.0	
Ribes cereum	Rice	tr.	tr.	tr.	
Yucca glauca	Yugl	tr.	tr.	tr.	
Shepherdia canadensis	Shca	P	P	P	
Achillea millefolium lan.	Acmil	2.0	1.0	1.0	
Antennaria rosea	Anro2	tr.	tr.	tr.	
Artemisia ludoviciana	Arlu	0.2	0.2	0.2	
Castilleja occidentalis	Caoc4	tr.	tr.	tr.	
Erigeron speciosas	Ersp4	tr.	tr.	tr.	
Geranium richardsonii	Geri	tr.	tr.	tr.	
Hymenoxys richardsonii	Hyri	tr.	tr.	tr.	
Lupinus argenteus	Luar3	1.0	1.0	1.0	
Mertensia ciliata	Meci3	0.2	tr.	tr.	
Bouteloua curtipendula	Bocu	0.1	0.1	0.1	
B. gracilis	Bogr2	3.0	2.0	2.0	
Carex	Carex	1.0	1.0	1.0	
Festuca arizonica	Fear2	0.2	0.2	0.2	
Koeleria cristata	Kocr	1.0	1.0	1.0	
Muhlenbergia montana	Mumo	0.5	0.5	0.5	
Oryzopsis hymenoides	Orhy	tr.	tr.	tr.	
Poa fendleriana	Pofe	1.0	1.0	1.0	
Poa pratensis	Popr	tr.	tr.	tr.	
Sitanion hystrix	Sihy	0.5	0.3	0.3	

Mangement Implications:

. This soil component is stable but steeps slopes primarily limit its potential for intensive management.

. This component may be associated with shale which makes it highly erosive. Steep slopes also restrict potential for intensive management.

. Most of this soil component is associated with shale which is highly erosive. Roads are slick when wet. Soil development is hampered due to dynamic nature of material. Steep slopes also restrict potential for intensive management.

. Sandstone Rock Outcrop occurs frequently throughout the unit which may pose problems for road construction, timber harvesting or revegetation, or other management potential.

tes: Slopes are variable, 15 to 80 percent; road construction may be improved by location on scarps and ridges where lesser slopes occur. Current canopy of Artemisia tridentata is variable.