

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
Field Office

PORCELANITE HILLS, 5-8" p.z.
RANGE SITE DESCRIPTION

Major Land Resource Unit: D-37A
Site No.: 037AY023NM

Date: AUG 24 1993

Approved By: *R. L. Carmichael*

A. PHYSICAL CHARACTERISTICS

1. Physiographic Features

This upland site occurs as hills on dissected areas along the margins of plateaus. It suffers from excessive drainage and is subject to significant amounts of runoff. Slopes range from 5 to 45 percent. Elevations range from 5,600 to 5,900 feet. The porcelanite (baked shale) material locally is called "red-dog".

2. Soils

a. The soils are very deep and excessively drained. They are formed in eolian derived from sandstone and residuum from porcelanite. Surface textures include extremely channery sandy clay loam. The subsoil has textures of extremely channery sandy clay loam and red porcelanite fragments. Permeability is moderate in upper part and very rapid in lower part. Available water capacity is very low. Runoff is rapid and the hazard of water erosion is severe. The hazard of soil blowing is slight. These soils are slightly saline (EC 4-8); mildly to moderately alkaline (pH 7.4-8.4); and non sodic (SAR 0-5).

b. Major soils associated with this site are:

Soil Taxonomic Unit

Shiprock SSA:

150 - Chipeta-Badland-Moncisco Complex (Moncisco part).

Additional information may be found in Section II of the Field Office Technical Guide.

3. Climatic Features

- a. Mean annual precipitation varies from 5 to 8 inches. About 60 percent of this moisture comes as rain during the months of April through October. May and June are the driest months. Most of the moisture from November through March comes as snow. Winds of high velocity during late winter and early spring are common.
- b. Mean temperatures for the hottest month, July, are about 83° F. The coldest month is January, when the mean temperature is about 27° F. Extreme temperatures of 104° F. for a high and -17° F. for a low have been recorded. Frost free period ranges from 140 to 160 days.
- c. The cool-season plants start growth in March and end with plant maturity and seed dissemination about mid-June. During June, July, August and September, the warm-season plants make optimum growth taking advantage of the warm temperature and moisture from tropical air out of the Gulf of Mexico. About 40 percent of the total precipitation is received during these summer months. The other 60 percent received during the fall-winter-spring months influence cool-season plants.

4. Native (potential or climax) Vegetation

- a. This range site has a plant community made up primarily of a mixture of grasses and shrubs with a small percentage of forbs. In the original plant community, there is a mixture of cool and warm season plants.
- b. Plant species most likely to invade or increase on this site when it deteriorates are Russian thistle, other annual forbs, mound saltbush, shadscale and broom snakeweed. Continuous livestock grazing use during the winter and spring periods will decrease the cool season species, which are replaced by lower forage value plants.
- c. The following is a list of plants that are found in the potential plant community. Range condition of areas within this site is determined by comparing the present plant community with that of this potential plant community. Count as potential no more than the maximum percent shown on the guide for any species. Four condition classes are used to express this degree of comparison of the present plant community to that of the potential:

| | |
|-----------|--------|
| Excellent | 76-100 |
| Good | 51-75 |
| Fair | 26-50 |
| Poor | 0-25 |

Relative percentage of total plant community by weight:

| <u>Grasses and Grasslike (60-70%)</u> | <u>Percent</u> |
|---------------------------------------|----------------|
| alkali sacaton (SPAI) | 25-30 |
| galleta (HIJA) | 15-20 |
| Indian ricegrass (ORHY) | 5-10 |
| sand dropseed (SPCR) | 0-2 |
| bottlebrush squirreltail (SIHY) | 1-5 |
| other perennial grasses (PPGG) | 1-5 |

| <u>Forbs (1-5%)</u> | <u>Percent</u> |
|------------------------|----------------|
| perennial forbs (PPFF) | 1-3 |
| annual forbs (AAFF) | 1-2 |

| <u>Shrubs and Trees (20-30%)</u> | <u>Percent</u> |
|----------------------------------|----------------|
| shadscale (ATCO) | 15-20 |
| sickle saltbush (ATFA) | 0-2 |
| mound saltbush (ATOB) | 1-5 |
| broom snakeweed (GUSA2) | 0-5 |
| Winterfat (EULA5) | 1-5 |
| plains pricklypear (OPPO) | 0-1 |
| Torrey Mormontea (EPTO) | 0-1 |
| other shrubs (SSSS) | 1-5 |

This list of plants and their relative proportions are based on near normal years. Fluctuations in species composition and relative production may change from year to year dependent upon abnormal precipitation or other climatic factors.

The potential (climax) plant community has been determined by study of range relict areas, or areas protected from excessive grazing. Trends in plant communities going from heavily grazed areas to lightly grazed areas, seasonal use pastures and historical accounts have also been used.

5. Total Annual Production

In excellent condition this site will produce approximately the following amounts of air dry herbage per acre in:

| | |
|------------------|-----------------|
| favorable year | <u>550</u> lbs. |
| normal year | <u>450</u> lbs. |
| unfavorable year | <u>350</u> lbs. |

B. MAJOR USES1. Livestocka. Site factors influencing management

This site is steep which restricts use by livestock. Proper distribution is often impossible to attain; and heavy use occurs by livestock in the limited accessible areas. Care should be taken not to over use this site as recovery will be very slow and erosion will be accelerated.

b. Guide to Initial Stocking Rate

The following stocking rates may be used as a guide to establish a safe starting stocking, but should be evaluated and livestock numbers adjusted based on actual use experience and climatic fluctuations.

| <u>Condition Class</u> | <u>Percent Climax Vegetation</u> | <u>AC/AUM</u> | <u>AUM/AC</u> |
|------------------------|----------------------------------|---------------|---------------|
| Excellent | 76-100 | 4-7 | .14-.25 |
| Good | 51- 75 | 5-8 | .12-.20 |
| Fair | 26- 50 | 7-12 | .08-.14 |
| Poor | 0- 25 | 12-19 | .05-.08 |

2. Wildlife

a. Site factors influencing wildlife.

The variety of vegetation produced attracts many species. The steep slopes and broken topography provide safety from danger for wildlife.

b. Guide to site plant use by wildlife species.

| Plant Species | Selected Wildlife Species | | | |
|-----------------------------|---------------------------|--------------|-----------|------------------|
| | Cottontail Rabbit | Mule Deer | Pronghorn | Mourning Dove |
| alkali sacaton | X | F-Foliage | G-Foliage | |
| galleta | | G-Foliage | G-Foliage | |
| Indian ricegrass | X | G-Foliage | G-Foliage | G-Seed |
| sand dropseed | X | X | X | |
| bottlebrush squirreltail | G-Foliage | F-Foliage | | |
| perennial forbs | G-Foliage | G-Foliage | G-Foliage | G-Seed |
| shadscale | | P-Foliage | G-Foliage | |
| Torrey Mormontea | X | G-Stems | G-Stems | |

G = Good F = Fair P = Poor X = Used, Extent Unknown

3. Recreation and Natural Beauty

a. Land Form -

Hillslopes, backslopes, footslopes and knolls of hills, bench escarpments, and mesas.

b. Landscape Quality -

This site has a highly diversified plant complex of grasses, shrubs and forbs. The aesthetic appeal is excellent because of the visual effect in contrast to the surrounding topography.

c. Climate -

Winters are cold. Spring time is usually windy. Summer is relatively mild with typical Southwest thunderstorms.

d. Activities -

Hiking, hunting, rock hounding and photography are excellent recreation activities.

4. Other Uses -

The porcelanite (baked shale) material is used as gravel on roads.

C. THREATENED OR ENDANGERED PLANTS AND ANIMALS

1. Plants -

None known.

2. Animals -

None known.

D. LOCATION OF TYPICAL EXAMPLE OF THE SITE

1. State location - 25 mi. ENE of Sheep Springs, NM - Sec. 1, T23N, R14W
- Navajo Res., NM.

2. Field office site location -

E. FIELD OFFICES

Shiprock, NM; Window Rock, AZ; Aztec, NM; Gallup, NM.