

Environmental Impact Statement (EIS) for Red Rock Wash

INTRODUCTION

A corporation is planning to build homes on several hundred acres between Red Rock National Conservation Area and the suburbs of Las Vegas. They have already cleared vegetation from the land and leveled the topography. Several measures have been installed to guide water flows into Red Rock Wash. The homes will be built above red rock wash in the upland areas.

Red Rock Wash is an ephemeral (seasonal) wash which fills during heavy rainstorms. Along the wash edges, natural erosion over many hundreds of years has created habitat for different bat species. Some of the natural cliffs have been plowed over with the development of the new home-sites.

You are hired as an Environmental Consultant to review neighboring wilderness areas near Red Rock Wash. The information gathered will serve as baseline data for the site that has already been cleared for building. One might expect to find similar wildlife habitat and ecosystems on the cleared site and the adjacent are which you will be studying.

While gathering data on Friday, take notes on possible impacts of different alternative actions for the building company. The Environmental Impact Statement will provide baseline data, review alternative options for the home building project and their current and potential impacts on the land and the nearby Red Rock National Conservation Area.

Alternatives may include the following:

- Continue Building the homes

- Stop construction & restore the ecosystem (build in the inner city instead)

- Create native habitat parks in the building project to reduce loss of habitat

Vegetation Datasheet

Date:

Time:

Group/Location:

PROCEDURES:

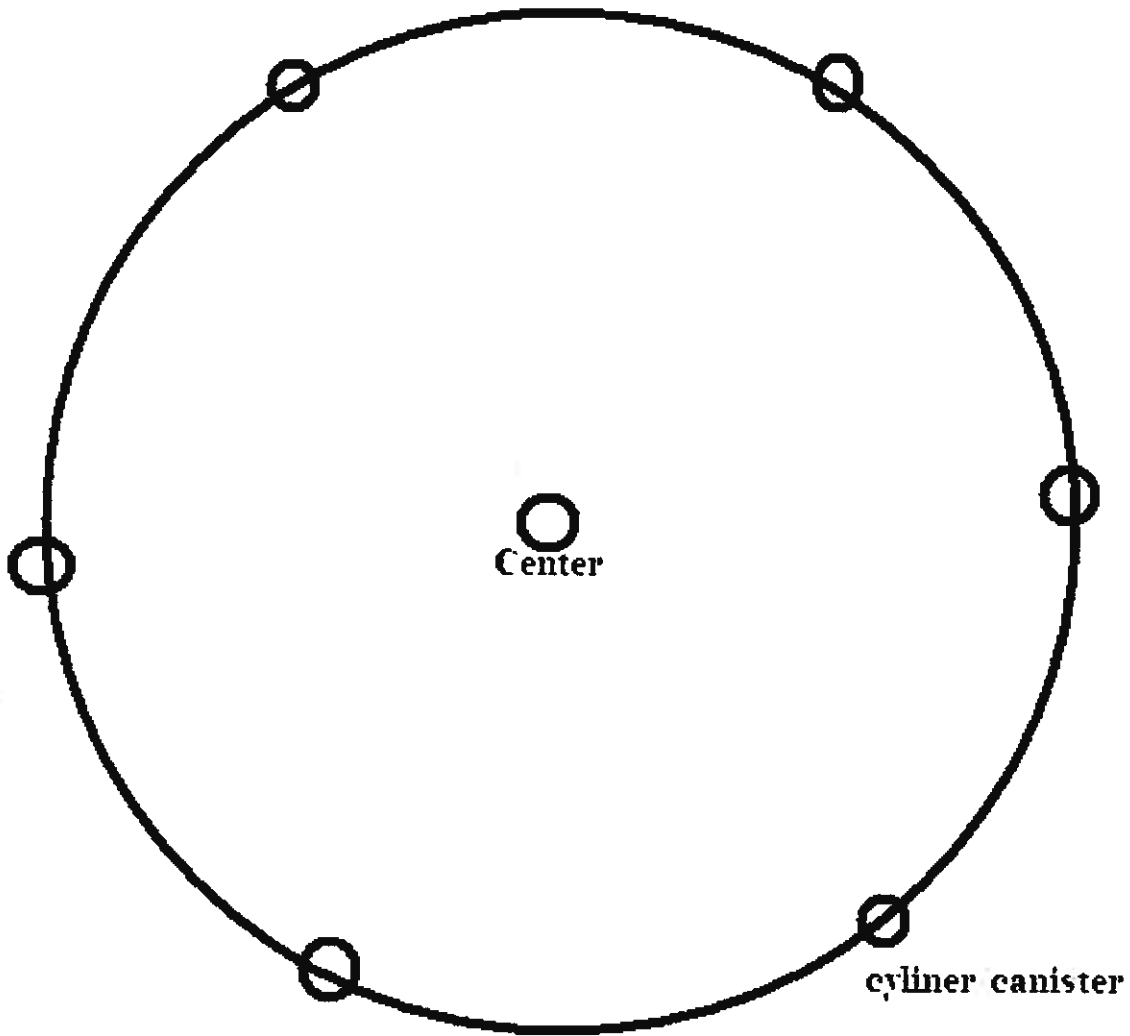
One person will stand in the center of the circular quadrat while holding the end of the measuring tape. A second person will hold the other end of the tape measure, walk out 12 meters (about 40 feet) from the center and place their clipboard or other items on the ground to mark the starting point, then begin to walk clockwise in a circle. One person will follow the tape-measure walker and place cylinders around the circle perimeter to mark the site's edges. Two people will individually record plant names and mark a tally for each plant seen within the site area. The person holding the tape measure in the center may help data recorders to count plants accurately. All other group members will use their plant guide to identify plants.

| | Common Name | Scientific Name | Number of Plants | Cover |
|----|-------------|-----------------|------------------|-------|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |

PLANT HEIGHT MEASUREMENTS:

Which species grow on both site 1 (wash) and site 2 (upland)? _____

Measure the height of each plant of this species. Draw a map of the site or quadrat and mark the location of each plant measured. Next to each plant, record the height in cm.



Next, take a soil sample from this site. Mark on the map where the sample was taken from. Label the jar using a permanent marker with the date, group member names and name of the site: wash or upland.

TOTAL SPECIES ON SITE: _____

TOTAL SITE COVER: _____

VISUAL COVER ESTIMATES:

After recording plant species and the number of individuals of each plant, estimate plant cover for the entire site, then for each species. There different categories are as follows:

| Cover Value | Percent Cover |
|-------------|---------------|
| t | Less than 1% |
| 1 | 1-5% |
| 2 | 5-25% |
| 3 | 25-50% |
| 4 | 50-75% |
| 5 | 75-100% |

Note: *Plant Density = Total number of plants for a species per unit area. The higher the number of species on a site AND the higher the number of plants for each species, the greater the diversity on the site (HIGH DIVERSITY).

SITE CONDITION REPORT: Take notes on the condition of the site:

Any signs of Humans (off-road vehicle tracks)?

Any signs of wildlife (tracks, scat, burrows, herbivory, nests, insects)?

Do you see any trash?

Notes on plant health (insects, herbivory, dropped leaves):

Soil crust?

Wildlife Datasheet: Entire Site

Date:

Time:

Group/Location:

Because of the cool winter season, many animals may not be active. Research from other studies might have to be used to understand which animals use this area. Document any wildlife or signs of wildlife you may find, such as scat or footprints, burrows, herbivory or old bird nests.

MAMMALS:

BIRDS:

REPTILES:

INSECTS & SPIDERS:

Hydrology Notes

Which direction does water flow during floods?

Is there any evidence of water flow (debris piled on trees)?

Human Impact Monitoring Datasheet: Entire Site

Date:

Time:

Location:

| Conditions | Present Description | Future Predictions |
|--|---------------------|--------------------|
| Off-roading and Jeep trails | | |
| Loss of habitat, food & shelter | | |
| Changes in water flow | | |
| Trash and garbage dumping | | |
| Air pollution | | |
| Light pollution | | |
| Noise pollution | | |
| Endangered species impacts | | |
| Soil crust loss & impacts (decreased water absorption, increased soil erosion, | | |
| Loss of buffer zone to Red Rock National Conservation Area (impacts to wildlife) | | |
| Animal migration into red rock (crowding, stress, competition for space and resources) | | |

Soil texture, color, soil moisture and other characteristics of the material should be included in the description of soils.

Soil Texture Descriptions (largest to smallest):
Rocks, Gravel, Sand (coarse, fine), Silt, Clay

In the classroom, mix a sample from the jar of soil (collected in the field) with water in a glass jar and wait until everything settles. Particles will separate according to size (heaviest or largest particles on the bottom) by sedimentation. When the soil settles, look at the chart below to describe the soils. Approximate the % of the soil sample that is sand, silt or clay. Look at the percentages on the chart and describe the soil.

FIGURE 3-16 BASIC SOIL TEXTURE CLASSES

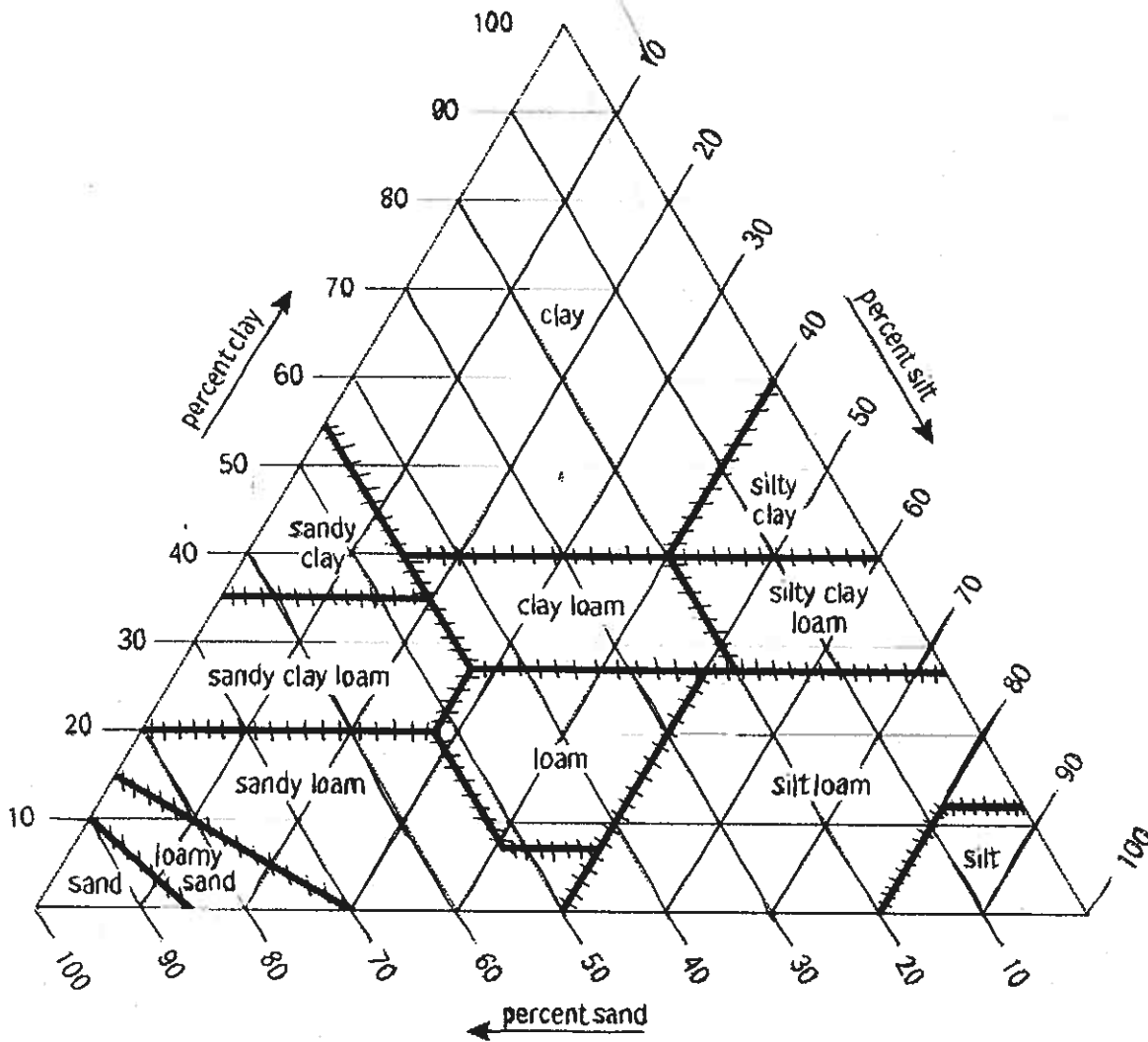


Chart showing the percentages of clay, silt, and sand in the basic texture classes.

Soil Moisture Descriptions:

Dry (very dry, moderately dry, slightly dry)

Moist (very moist, moderately moist, slightly moist)

Wet (saturated, non-saturated)

Soil Erosion

Erosion is the detachment and movement of soil material. The process may be natural or accelerated by human activity.

Accelerated Erosion is largely the consequence of human activity. The primary causes are tillage (for agriculture and farming), grazing, and cutting of timber. Another example would be increased water flows in the Las Vegas Wash because of increasing human use of water in urban areas - when the water returns to Lake Mead through the wash, the water moves faster and in larger quantities which, without native vegetation, erodes soil.

Natural Erosion is an important process that affects soil formation. It may remove all soils (exposing bedrock) or part of soils formed in the natural landscape. Natural erosion can be influenced by wind and/or water.

Wind Erosion in regions of low rainfall (desert) can be widespread, especially during periods of drought. When winds are strong, coarser particles are rolled or swept along on the soil surface, kicking finer particles into the air. *The hazard of wind erosion is increased by removing or reducing the vegetation.*

Water Erosion results from the removal of soil material by flowing water. Soil material is suspended in runoff water and carried away.

Alluvium: Alluvium consists of sediment deposited by running water. It may occur in the bottom of existing streams, ephemeral washes or dry creek beds.

Common Plants at Red Rock Wash

Black Banded Rabbitbrush
Ericameria paniculata

[NO PHOTO AVAILABLE]

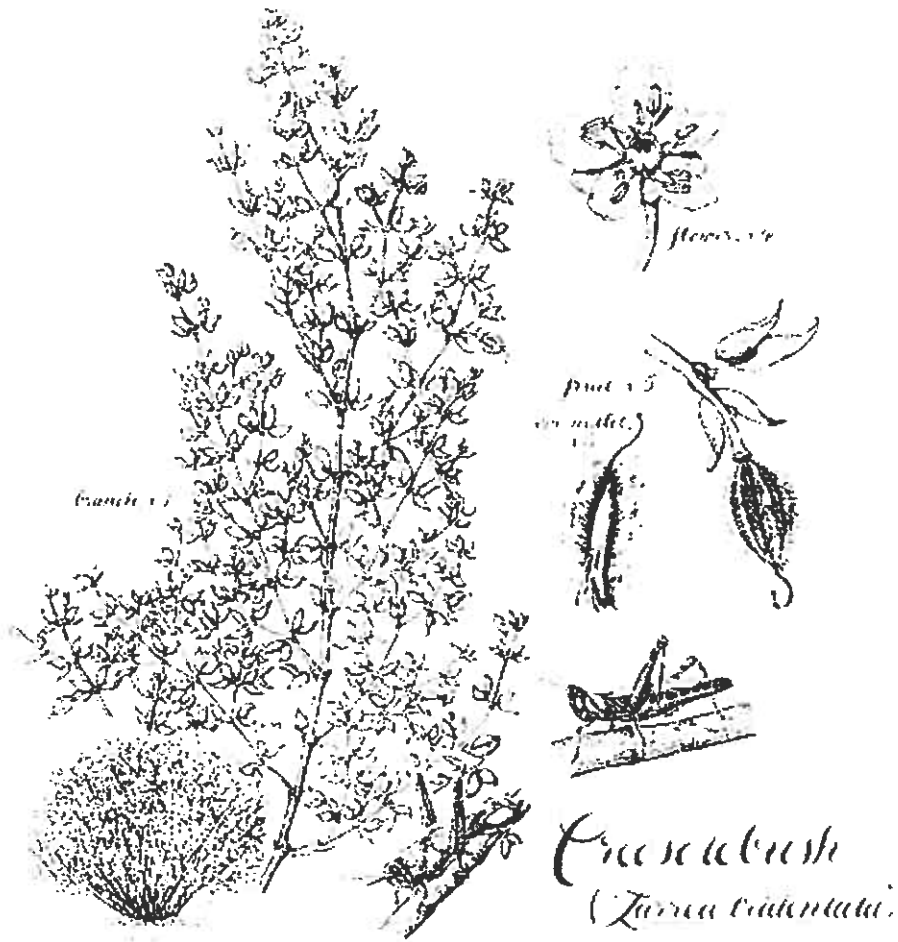
Cheesebush,
burrobush



Four-Wing Saltbush



Common Plants at Red Rock Wash



Chilopsis linearis a, seed pod. b, seed

Desert Willow (*Chilopsis linearis*)

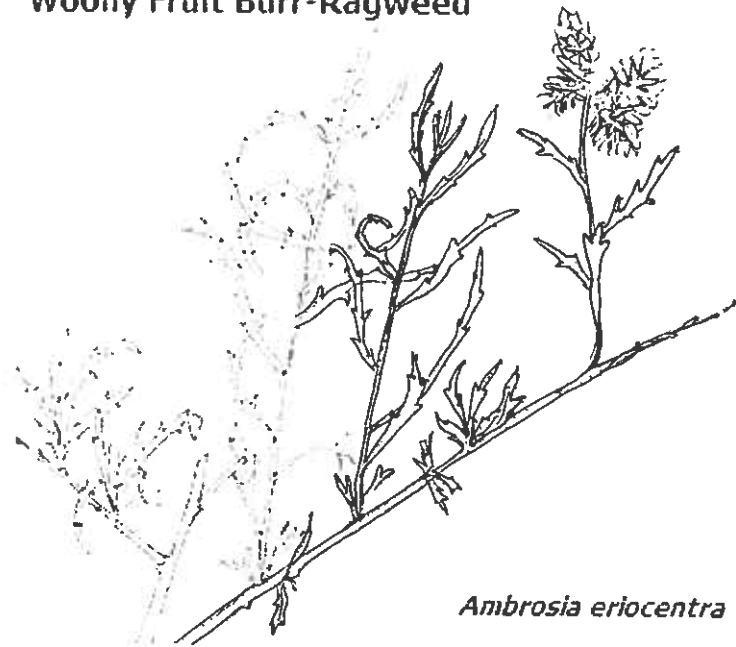
Common Plants at Red Rock Wash

White Bursage



Ambrosia dumosa

Woolly Fruit Burr-Ragweed



Ambrosia eriocentra