

Grazing Management for Healthy Watersheds

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Abstract—New Mexico was historically grazed by many native and introduced ungulates, often called wildlife. Their distribution was limited especially in deserts until domestic animals were introduced and drinking water was provided. Plants respond to grazing with little resistance (black grama), to great resistance (blue grama), and to being stimulated (antelope bitterbrush). A plant species such as blue grama may be in sod form when grazed heavily and in bunch form when grazed more judiciously. Grazing and trampling that reduces plant cover and volume affect the watershed by: (1) decreasing interception and transpiration, (2) decreasing organic matter additions to the soil, which affects soil structure and porosity, (3) decreasing infiltration into the soil surface, (4) increasing runoff and erosion, and (5) losing sustainability. However, grazing can retard the invasion of some undesirable species such as salt cedar. Trampling increases soil roughness and decreases runoff and erosion when soils are wet. The opposite is true when soils are dry. Unfortunately, southwestern soils are usually dry. Animal trails that go up and down slopes increase runoff and erosion. Trails that are across slopes decrease runoff and erosion. Trampling increases bulk density, which decreases porosity and results in increased runoff and erosion. However, increased bulk density also results in increased water holding capacity. Trampling may control pocket gophers, which plow the land and contribute to accelerated runoff and erosion. Grazing and subsequent deposition of animal wastes result in vegetation being returned to the soil, much of which would otherwise be lost to wind or volatilized. Usually, the only animal wastes found in streams are those that are deposited directly. Some streams can benefit from the added nutrients while other streams are adequate in fertility without additions from animals.

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