Native Grassland Restoration

A demonstration garden of the Santa Fe Native Plant Project, a certification and public education program of the Santa Fe Extension Master Gardeners

This parcel of formerly compacted, nutrient-poor soil, populated sparsely by weeds, was transformed in 2021 into an example of Plains-Mesa Grassland, one of the characteristic ecosystems of New Mexico. San Isidro Permaculture advised on reshaping the slope into three terraces edged by armored berms. By slowing and redirecting water, these features improve infiltration and reduce erosion. Madrid Engineering, LLC surveyed and shaped the terraces. Volunteers incorporated 34 cubic yards of biosolids compost purchased from Santa Fe's Wastewater Management Division, armored the berms with rock, installed a temporary irrigation system, scattered seeds for native* grasses and forbs (flowering plants) – including legumes to add nitrogen – and covered the seedbed with blue grama hay. Shrubs and trees from the New Mexico Forestry Division Seedling Program were added in the shallow channels at the bottom of the slope. The Xerces Society donated pollinator habitat kits (32 forbs and a shrub in each kit), and Waterwise Gardening, LLC donated nine trees. The parcel itself is the property of Santa Fe County.

The project is aligned with the goals of the New Mexico Healthy Soil Act of 2019:

- Keep the Soil Covered Cover is critical to protect soil from wind and water erosion, provide food and habitat for macro- and microorganisms, buffer soil temperature, reduce evaporation, and make the most of our scarce water resources. Protect the soil by growing a dense carpet of plants or adding a layer of mulch.
- Minimize Disturbance and External Inputs Avoid physical and chemical disturbances as much as possible. Tillage destroys soil structure by breaking up aggregates and eliminating pore spaces that allow water to infiltrate the soil, which leads to erosion. Synthetic fertilizers, herbicides, pesticides, and fungicides are harmful to life in the soil as well.
- Maximize Biodiversity Diversity above ground is mirrored below. Each plant and animal, including insects, has something to contribute. Together they provide a varied diet for soil microorganisms, break disease cycles, and create habitat. Diversity enhances ecosystem function and resilience.
- Maintain Living Roots Soil organisms cluster around roots that provide their basic food source: carbon. In turn, the soil biology fuels the plant nutrient cycle. Ensure roots are in the ground year-round by planting perennials or multi-species cover crops. Encourage a variety of warm and cool season grasses through planned grazing.
- Integrate Animals A healthy ecosystem provides habitat for animals, large and small. Planned grazing, which mimics the effects of migratory grazing herds, is essential to rangeland health. Animals can be used to graze cover crops. Beneficial insects find food and shelter in hedgerows and pollinator strips. Earthworms thrive in healthy soils.

This project, located at the Santa Fe County Fairgrounds, 3229 Rodeo Road, was made possible by Santa Fe County with grant support from the Native Plant Society of New Mexico, Santa Fe Extension Master Gardeners, and the Santa Fe Master Gardeners Association. Additional plant donations came from Waterwise Gardening, LLC and the Xerces Society.

*Native to New Mexico (*Flora Neomexicana III: An Illustrated Identification Manual*, 2nd ed. Kelly W. Allred, Eugene M. Jercinovic. Illustrated by Robert DeWitt Ivey. LuLu, 2020)

Water Harvesting

In a one-inch rainstorm, the 5,500 sq. ft. roof of the Extension Service building sends 2,600 gallons of water to three cisterns; all the overflow is directed to the second- and third-level terraces. The runoff from the lower parking lot (9,600 sq. ft.) is approximately 5,600 gallons, all directed to the third- and fourth-level terraces.

What We Planted

From Seed

Grasses

Bouteloua curtipendula (Sideoats Grama)
Bouteloua gracilis (Blue Grama)
Eriocoma hymenoides (Indian Rice Grass)
Hilaria jamesii (Galleta)
Pascopyrum smithii (Western Wheat)
Schizachyrium scoparium (Little Bluestem)
Sporobolus airoides (Alkali Sacaton)
Sporobolus cryptandrus (Sand Dropseed)

Forbs

Baileya multiradiata (Desert Marigold)
Cleome serrulata (Rocky Mountain Bee Plant)
Coreopsis lanceolata (Lanceleaf Coreopsis)
Engelmannia peristenia (Engelmann's Daisy)
Eriogonum umbellatum (Sulphur Buckwheat)
Gaillardia aristata (Firewheel)
Hymenothrix dissecta (Bahia)
Liatris punctata (Spotted Gayfeather)
Penstemon ambiguus (Sand Penstemon)
Ratibida columnifera (Prairie Coneflower)
Solidago lepida (Goldenrod)
Symphyotrichum falcatum (Heath Aster)

Legumes

Amorpha canescens (Leadplant)
Dalea candida (Prairie Clover, White)
Dalea purpurea (Prairie Clover, Purple)

From Nurseries

Xerces Pollinator Habitat Kit

Asclepias speciosa (Showy Milkweed)
Berlandiera lyrata (Chocolate Flower)
Dalea candida (Prairie Clover, White)
Engelmannia peristenia (Engelmann's Daisy)
Gaillardia pulchella (Blanketflower)
Heterotheca villosa (Hairy Golden Aster)
Mirabilis multiflora (Desert 4 O'Clock)
Monarda fistulosa (Beebalm)
Thelesperma megapotamicum (Cota)
Verbena macdougalii (MacDougal Verbena)
Rhus trilobata (Three-Leaf Sumac)

Shrubs and Trees

Amorpha canescens (Leadplant)
Artemisia frigida (Fringed Sage)
Artemisia ludoviciana (White Sage)
Atriplex argentea (Silverscale Saltbush)
Atriplex canescens (Four-Wing Saltbush)
Cercocarpus montanus (Mountain Mahogany)
Chilopsis linearis (Desert Willow)
Ericameria nauseosa (Chamisa)
Forestiera pubescens (New Mexico Olive)
Hesperocyparis arizonica (Arizona Cypress)
Juglans major (Arizona Walnut)
Krascheninnikovia lanata (Winterfat)
Quercus gambelii (Gambel Oak, Flagstaff tree form)
Quercus gambelii (Gambel Oak)
Quercus turbinella (Scrub Oak)
Rhus microphylla (Littleleaf Sumac)
Ribes aureum (Golden Currant)

For more information go to **www.sfemg.org** and click on Projects, then scroll down to Santa Fe Native Plant Project (SNaPP)