



Vegetation Mapping at Zion National Park

Wondering where in the park to look for a certain bird? Trying to plan a prescribed fire? Need help identifying potential habitat for a threatened species? You need a vegetation map!

Vegetation maps visually display the distribution of vegetation communities across a landscape. Knowing what's growing where, and what kinds of habitat occur in a park, helps park managers to successfully conduct a variety of activities, including park planning, resource monitoring, interpretive programs, prescribed fire, and climate change response. Vegetation maps also provide a baseline for ecological studies.

In cooperation with the U.S. Geological Survey and many other partners, the National Park Service (NPS) is engaged in an effort to classify, describe, and map vegetation communities in more than 270 NPS units across the U.S. Each map represents hundreds to thousands of hours of effort by dozens of contributors: ecologists, field technicians, GIS technicians, data managers, writers, editors, and park staff. Each finished project comprises not just a map and report, but also an entire library of vegetation data and descriptive information.

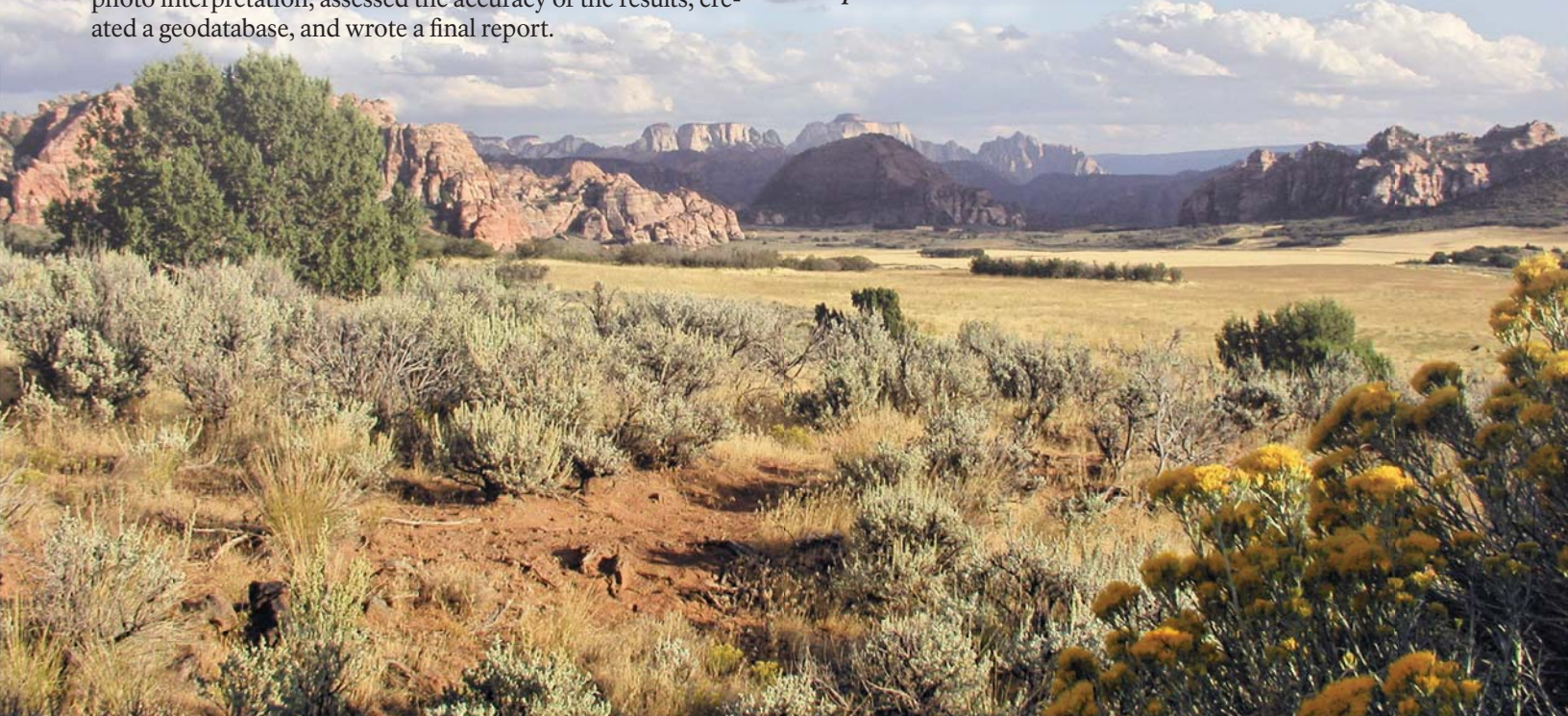
To create each mapping project, a vegetation mapping team from NatureServe and the U.S. Bureau of Reclamation gathered aerial photography, established and collected data from vegetation plots, used those data to classify vegetation types and write descriptions, wrote a vegetation-type key, performed photo interpretation, assessed the accuracy of the results, created a geodatabase, and wrote a final report.

To create a map, vegetation is first classified into *associations* and/or *alliances*, which are repeating assemblages of plants in similar habitats. Those assemblages are then organized into *map classes*, which identify meaningful units to represent existing vegetation and land uses (see map, next page). *Ecological systems* are used to organize the map classes. They represent groups of communities that occur in similar environments and are shaped by similar ecological processes.

For the Zion NP project, the mapping crew classified vegetation into 95 community types and developed 48 natural or semi-natural vegetation map classes. The most frequent vegetation map unit was the Gambel Oak Shrubland Alliance. The most abundant map unit was the Pinyon - Juniper Woodland Complex.

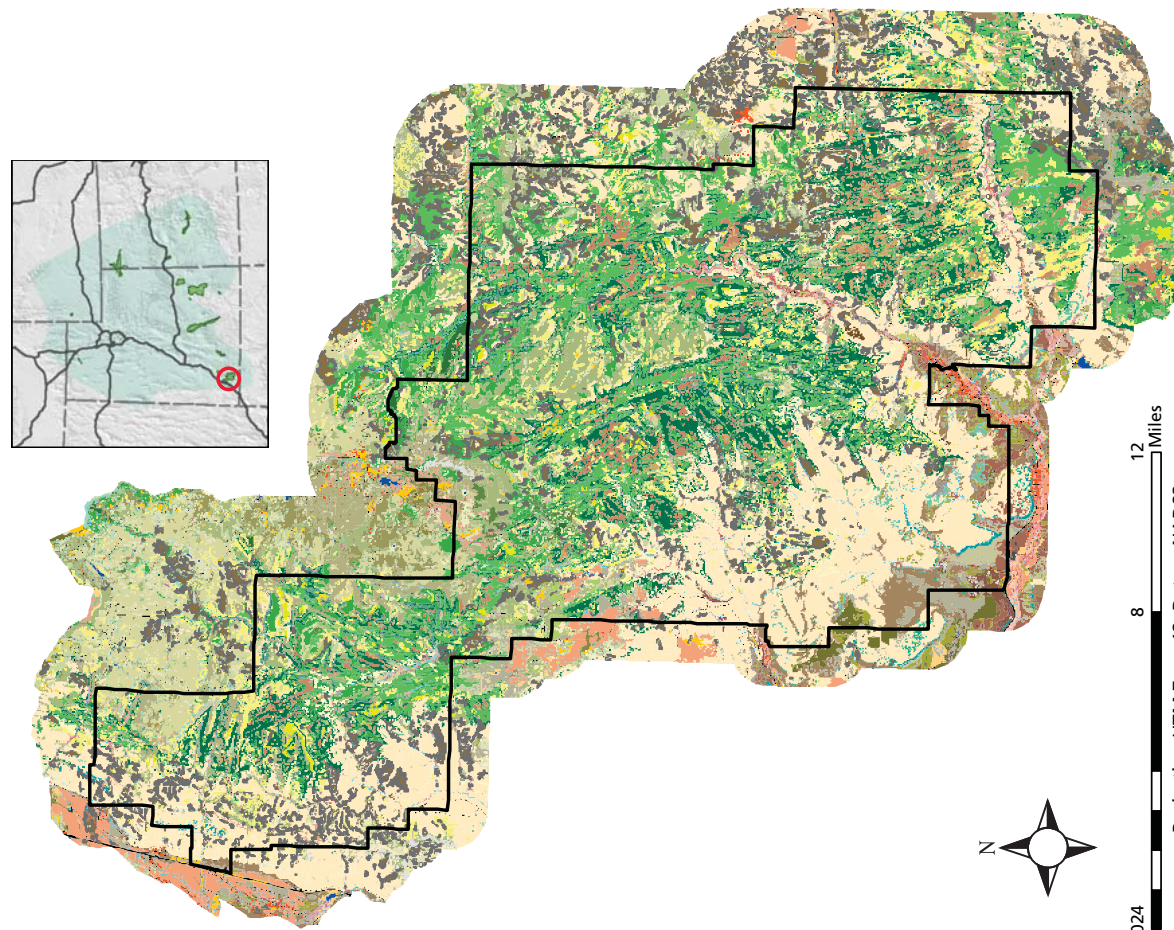
The mapping results revealed that the park's low-elevation (~3,700–4,200 ft) vegetation includes desert and semi-desert shrublands dominated by blackbrush, big sagebrush, fourwing saltbush, rabbitbrush, greasewood, snakeweed, and Mormon tea, with smaller areas of desert grasslands and lowland riparian forests and woodlands. Mid-elevation (~4,000–6,800 ft) vegetation is often dominated by pinyon-juniper woodlands, with woodland understories dominated by Utah serviceberry, greenleaf manzanita, big sagebrush, mountain mahogany, curl-leaf mountain-mahogany, Stansbury cliff-rose, turbinella live oak, or Gambel oak. Higher-elevation (~6,000–8,600 ft) vegetation is characterized by montane vegetation types, such as ponderosa pine woodland and forest, quaking aspen forest, Douglas-fir forest, white fir forests, and mixed montane shrublands and grasslands.

Map on other side!



Zion National Park Vegetation Map

U.S. Department of the Interior
National Park Service



Projection UTM Zone 12, Datum NAD83

Produced by USGS

Vegetation Map Classes

Talus Mixed Shrubland	Carmel Formation (Limestone)
Mixed Mountain Shrubland Complex	Chinle Formation - Petrified Forest (Shale)
Greenleaf Manzanita - Gambel Oak - (Utah Serviceberry) Shrubland	Chinle Formation - Shinarump (Shale)
Greenleaf Manzanita Shrubland Complex	Kaibab Formation (Limestone)
Emory Seepwillow Shrubland	Kayenta Formation (Sandstone)
Tamarisk spp. Temporarily Flooded Shrubland	Moenave Formation (Conglomerate)
Arrow-weed Seasonally Flooded Shrubland	Navajo Formation (Sandstone)
Fremont Cottonwood Woodland Complex	Temple Cap (Sandstone)
Fremont Cottonwood - Velvet Ash Woodland	Basalt Talus
Russian Olive Semi-natural Woodland	Gullies and Eroded Lands
Honey Mesquite Shrub Stands	Slides (Fans and Slumps)
Cattail, Bulrush, Emergent Wetland Complex	Snags
Littleleaf Mountain Mahogany Slickrock Sparse Vegetation	Tinajas (Natural Water Holes/Tanks)
Mountain Mahogany Rock Pavement Sparse Vegetation	Unvegetated Volcanic Cinders and Cinder Cones
Ponderosa Pine Slickrock Sparse Vegetation	Volcanic and Basalt Cliffs
Blackbrush Shrubland Complex	Croplands and Pastures
Nevada Joint-fir Basalt Shrubland	Orchards, Groves, Vineyards, Nurseries, and Ornamental Horticultural Areas
Sand Sagebrush Colorado Plateau Shrubland	Other Agricultural Lands
Black Sagebrush Dwarf-shrubland Complex	Sand Bars and Beaches
Juniper / Big Sagebrush Woodland Complex	Strip Mines, Quarries, and Gravel Pits
Pinyon-Juniper / Gambel Oak Woodland Complex	Canals
Pinyon-Juniper Woodland Complex	Intermittent Streams
Perennial Disturbed Grassland Complex	Perennial Streams
Cheatgrass Annual Disturbed Grassland	Reservoirs
Painted Desert Sparsely Vegetated Alliance	Stock Ponds
Dry Meadow Mixed Herbaceous Vegetation Mosaic	Mixed Urban or Built-up Land
James' Galleta Herbaceous Vegetation	Transportation, Communications, and Utilities
Sand Dropseed Great Basin Herbaceous Vegetation	Zion National Park Boundary
Rabbitbrush Shrubland Complex	
Snakeweed - (Prickly-pear species) / James' Galleta Dwarf-shrubland	
Big Sagebrush Shrubland Complex	
White Fir Forest Alliance	
Sedge-Rush Wet Meadow Herbaceous Vegetation Mosaic	
Gambel Oak Shrubland Alliance	
Gambel Oak Woodland	
Mountain Snowberry / Kentucky Bluegrass Semi-natural Shrubland	
Utah Serviceberry Shrubland	
Sandbar Willow Shrubland Alliance	
Strapleaf Willow / Beaked Sedge Shrubland	
Single-leaf Ash Woodland	
Boxelder Woodland Alliance	
Bigtooth Maple / Gambel Oak Forest	
Douglas-fir Forest Alliance	
Quaking Aspen Forest Complex	
Ponderosa Pine / Greenleaf Manzanita Woodland	
Ponderosa Pine / Gambel Oak Woodland Complex	
Ponderosa Pine / Mixed Herbaceous Woodland Complex	
Ponderosa Pine Forest (Closed Canopy)	

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