



## Vegetation Mapping at Pipe Spring National Monument

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*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!*

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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.

The Pipe Spring NM mapping project was led by the Northern Colorado Plateau Network, with assistance from engineering-environmental Management, Inc., and NatureServe. The team 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.

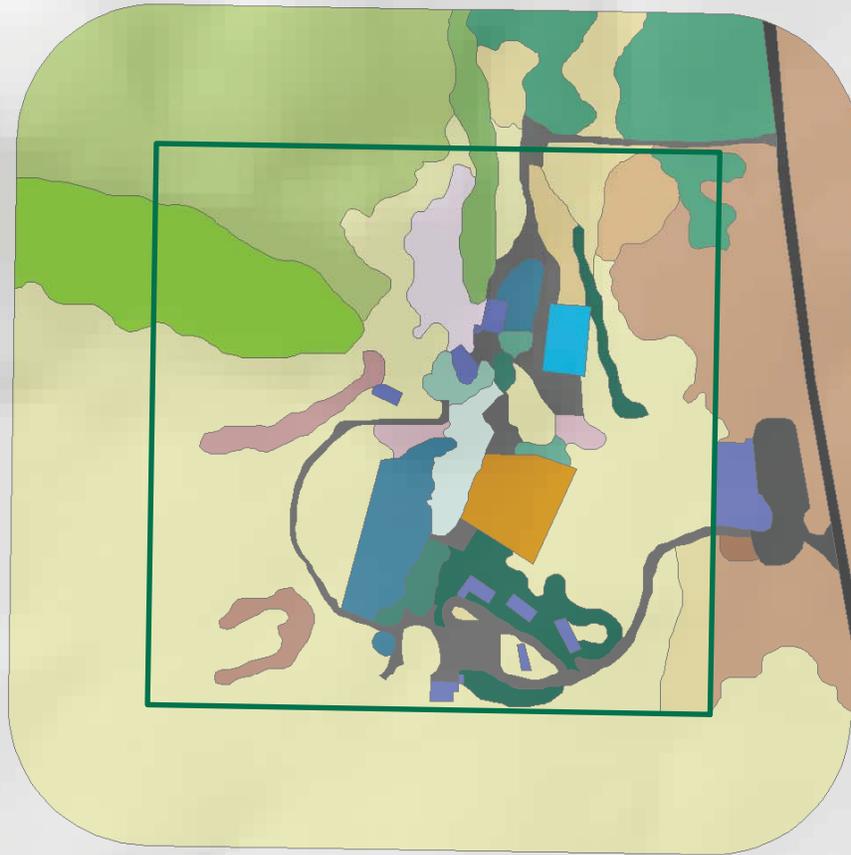
To create a map, vegetation is first classified into *associations* and/or *alliances*, which are repeating assemblages of plants in similar habitats. Those assemblages are then organized into *map classes*, which identify meaningful units to represent existing vegetation and land uses (see map, next 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 Pipe Spring NM project, the NCPN crew developed 12 natural vegetation map classes, represented by 38 map polygons. In addition, the crew delineated six developed land use map classes and eight introduced or cultivated vegetation map classes. The most frequent vegetation mapping unit was Four-wing Saltbush Shrubland, covering 45% of the mapping area.

The mapping results revealed that shrublands at Pipe Spring NM are sensitive to soil texture and alkalinity. Woodland associations are restricted to the top and slopes of the Moccasin Mesa highland and to the northern part of the monument, where Utah juniper is established in fourwing saltbush shrublands. The monument's lone stand of naturally occurring herbaceous vegetation is restricted to the south-facing escarpment west of West Cabin. Riparian communities no longer exist within the monument, but a few relict stands of native wetland vegetation do persist.

*Map on other side!*





0 0.05 0.1  
Kilometers

0 0.05 0.1  
Miles

**Vegetation Map Classes**

- Fremont Cottonwood Woodland
- Tree-of-Heaven Woodland
- Black Locust Woodland
- Siberian Elm Woodland
- White and Black Poplar Woodland
- Pinyon-Juniper / Scrub Oak - Bitterbrush Woodland
- Juniper - Baltic Rush Woodland
- Juniper - Saltbush Woodland
- Fourwing Saltbush Shrubland
- Sand Sagebrush Shrubland
- Fourwing Saltbush - Sand Sagebrush Shrubland
- Basin Big Sagebrush - Fourwing Saltbush Shrubland
- Fourwing Saltbush - Rabbitbrush Degraded Shrubland

- Coyote Willow Shrubland
- Rubber Rabbitbrush Shrubland
- Edible Berry Shrubland
- Black Greasewood Shrubland
- James Galleta Grassland
- Corrals
- Roads and staging areas (Bare Dirt)
- Parking Lot
- Dumpster
- Buildings
- Orchard
- Garden
- Pipe Spring Road (paved)
- Pipe Spring National Monument Boundary

