

Rocky Mountain Network

INFORMATION BRIEF

National Park Service
U.S. Department of the Interior

Natural Resource Stewardship and Science
Inventory & Monitoring Program



Checking Florissant's Vital Signs

Rocky Mountain Network Science in the Monument



National parks are the guardians of our unique American natural and cultural history. But perhaps more than ever before, parks exist in a rapidly changing landscape. Urban growth, replacement of native species by exotics, air and water pollution, increasing visitor use, and climate change all impact the natural web of life. This leads us to ask:

How healthy are our parks?

How are they changing?

To answer these questions, the National Park Service clustered parks into 32 Inventory and Monitoring Networks. In 2007 at Florissant and nearby parks, the [Rocky Mountain Network](#) began monitoring natural resources, called “vital signs,” that serve as red flags if conditions deteriorate. We support park managers’ efforts to make *science-based management decisions*.



Mike Britten is our
Program Manager



Billy Schweiger,
Ecologist, leads
wetland monitoring



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Kirk Sherrill is our
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What do we monitor at Florissant Fossil Beds National Monument?

Wetland Ecological Integrity

Florissant's wetlands are biodiversity hotspots. They harbor rare plants, like moss gentian (*Gentiana fremontii*), marsh felwort (*Lomatogonium rotatum*) and northern sweetgrass (*Anthoxanthum hirtum*). They also sustain migratory birds, amphibians that need water to reproduce, and hungry elk, among many other species. Florissant has a variety of wetlands, including grassy wet meadows and peat-rich fens. These fens are groundwater systems that have likely been in the valley accumulating peat for centuries. Florissant's wetlands, however, have been impacted by roads and impoundments that affect water flow. Rapid climate change and invasive exotic plants are also threats. We monitor three "sentinel" wetland complexes in Florissant to learn how these biologically rich ecosystems function and respond to stresses.



Hornbek Wetlands



Barksdale Picnic Wetlands



Redbarn Wetlands



Moss gentian (*Gentiana fremontii*)

Some wetland characteristics we measure:

- The different native plant species and forms (sedges, forbs, shrubs)
- Presence/absence of invasive exotic plants
- Fluctuation in groundwater levels over time
- Human and natural disturbances, like distance to roads and elk browsing intensity

Learn more about our wetland monitoring with this Resource Brief: [The Influence of Human Disturbance on Upland and Wetland Vegetation](#)

Upland Vegetation and Soils

Montane meadows, woodlands, and forests are important landscape features at Florissant. Plants in these communities anchor the food web, stabilize the soil, and shelter wildlife. These plants, in turn, are influenced by the underlying soil. Changes to vegetation and soils, like those caused by cheatgrass (*Bromus tectorum*), an exotic invasive plant, can ripple through entire ecosystems. Cheatgrass can increase erosion and change fire patterns. Past farming and livestock grazing activities at Florissant, including stock ponds, have altered the landscape and opened the door to exotic plants. Other disturbances, like changing climate and land use, have ongoing impacts. We monitor the monument's upland meadows, woodlands, and forests to learn how they function and respond to stresses.

Network report:

[Borgman EM and Others. 2015.](#)
Upland and fire effects monitoring in Florissant Fossil Beds National Monument: Rocky Mountain Network (2008-2013) and Rocky Mountain Fire Effects Program (2000-2014) Data Report.



Sampling an upland plot



Mt. Albert goldenrod
(*Solidago simplex* var. *simplex*)

Some upland characteristics we measure:

- The different native plant species and forms (sedges, forbs, shrubs, trees)
- Presence/absence of invasive exotic plants
- Tree and seedling density, damage from pests or disease, and proportion of living trees
- Potential for soil erosion (stickiness of soil particles, soil texture, bare ground cover)
- Soil chemistry, like pH, carbon, nitrogen, minerals, and the amount of organic matter
- Human and natural disturbances, like livestock grazing, distance to roads or trails, and fire

Learn more about our vegetation and soils monitoring: [Vegetation and Soils Monitoring Brief 2015](#)

Explore the [Rocky Mountain Network website](#)

Learn about inventory and monitoring in the park and play with:

- [species lists](#) for your park (Home>Inventories>Species Lists)
- [interactive visualization tools](#) for learning about climate, water quality, snowpack, and landscape patterns (Home>Data Visualization)

Contact us!

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