

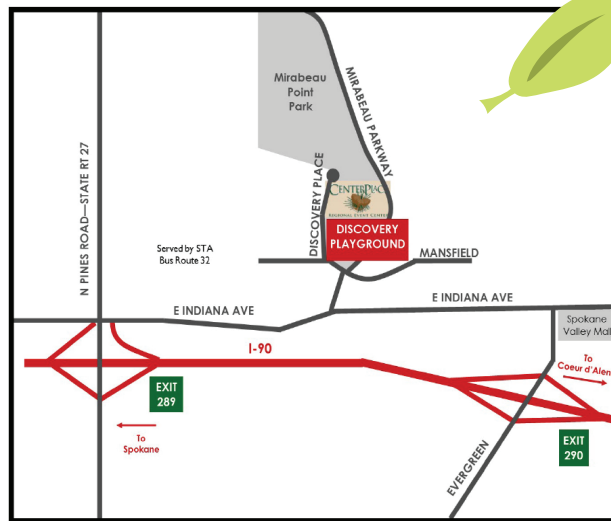
# WELCOME!

**M**irabeau Point Park is a regional, community, multi-use educational, recreational, and cultural destination in the heart of Spokane Valley, WA. The park is 55.5 acres located along the west bank of the Spokane River and Centennial Trail, with easy access from I-90.

Creating a sense of unity and pride, Mirabeau Point Park brings people with diverse culture, race, economic status, religion, and varying physical abilities together from all over the northwest. The park provides a safe environment for families and individuals to find learning and recreational opportunities.

## WHAT YOU WILL FIND HERE:

- CenterPlace Regional Event Center
- Mirabeau Meadows
- Mirabeau Springs
- Discovery Playground
- Trailheads to the Centennial Trail and the Spokane River
- Natural Space with Walking Trails



## READY TO EXPLORE GEOLOGY?

**C**ome explore, enjoy the outdoors, and view and learn about the amazing geological formations that are an ever present feature of Mirabeau Point Park. With the help of this self-guided walking tour and site map, the geology of the park comes alive and guides you to identify natural features you might have otherwise missed. The geology and natural history of the park is both long and complex. Yet because of numerous bedrock exposures and excellent access by walking trails, the geology can be easily viewed and experienced by park visitors.

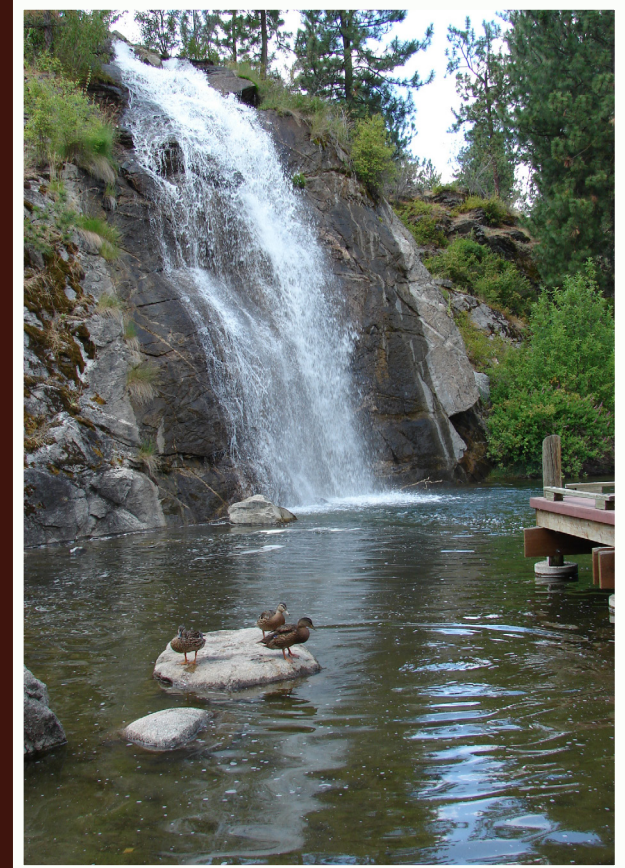
The park is located right on top of an “island” of Newman Lake Gneiss (pronounced “nice”) bedrock that is surrounded by the gravel sand boulders deposited by giant flooding. This durable metamorphic rock has withstood the forces of violent tectonic activity within the structure and movement of the earth’s crust, and catastrophic flooding and erosion.

## FIND THE SITES ON MAP INSIDE!

Geology research, information, photos, and input courtesy of

- Spokane Community College:
  - Andy Buddington - Earth Sciences Instructor
  - Justin Vaughan and Travis Taylor - Students
  - Dr. Ted Doughy of Prism Geoscience
- Spokane Valley Parks and Recreation Department

# MIRABEAU POINT PARK WALKING TRAILS AND GEOLOGY



**Parks and Recreation Department**  
**2426 N. Discovery Place**  
**Spokane Valley, WA 99216**  
**(509) 688-0300**  
**[www.spokanevalley.org](http://www.spokanevalley.org)**



# READY TO EXPLORE GEOLOGY? USE THE SITE MAP ON OPPOSITE PAGE

## SITE ① - ENTRANCE OVERVIEW

Start the tour at *Mirabeau Meadows*, on the north side of the natural area by a gravel pathway. You are standing on a "bedrock island" which protrudes from the gravels that underlie the valley and make up the Spokane Aquifer. To the north, you will notice



prominent basalt cliffs. This area was carved out from the Missoula Floods that swept through.

## SITE ② - THE PEGMATITE DIKE

Head up the trail and you will notice a prominent rock outcrop to your right and *The Pegmatite Dike*. This rock is Newman Lake Gneiss. Look closely to see foliation, the aligned mineral pattern typical of metamorphic rocks. Also displayed are many fractured, faults, and veins of light-colored pegmatite.



## SITE ③ - THE ERRATIC

Farther up the trail you will see what looks to be a plain, ordinary boulder, but this boulder has some exciting geologic history. It is made of granite found in Idaho, not in the Spokane area. How did it get here? This boulder is an *erratic*, which was either swept here by the Missoula Floods or floated here lodged within an iceberg, which melted, and was deposited.



## IS IT JUST A "ROCK?"

Extensive pegmatite veining (coarse crystal granite) has occurred throughout the metamorphism of the rock. Dominant minerals throughout the park include **quartz** (glassy, gray), **orthoclase feldspar** (milky white), **biotite mica** (shiny, black) and **plagioclase feldspar** (white to gray).



Rock Samples to Identify

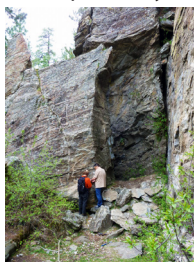
## SITE ④ - THE WALL OF MOSSES

*The Wall of Mosses* is another outcrop of Newman Lake Gneiss. The outcrop has been heavily weathered and overgrown by lush vegetation, including mosses. The trees around this site block out the sun and allow moisture to collect, providing the perfect moist forest setting where vegetation can grow and flourish.



## SITE ⑤ - THE GORGE

On the back side of *The Wall of Mosses*, you will find *The Gorge*. It is a deep crevice in the rock which formed when a giant block of rock detached and slid west of the main outcrop, and now rests about ten feet from where it detached. Because of its close proximity to the original rock body, the original contour of the fracture is preserved very well. Look closely at the contours of the original rock body and the detached block, and see how they line up like pieces of a jigsaw puzzle.



## SITE ⑥ - THE BOUDIN

Just south of *The Gorge* is *The Boudin*, a metamorphic geologic feature that forms during shearing stress. As shearing takes place, more resistant minerals tend to "glob up," while other minerals around them are sheared, stretched, and flattened out. The resistant globs are only slightly elongated, thus creating a geologic structure that resembles the shape of a giant eye. Notice how the normally parallel layers warp around the boudin and meet back up with one another.



## SITE ⑦ - THE CANNONBALLS

On your way from *The Boudin* to *The Waterfall*, keep an eye out for *The Cannonballs*. They are glacial erratics, which originated east of WA and were swept into this area by flooding. The way in which they are rounded is a large scale version of what happens when you polish a rock in a rock tumbler or what happens to boulders at the bottom of a normal stream bed.



## SITE ⑧ - THE WATERFALL & QUARTZ RIBBONS

*The Waterfall* itself is man-made, but it pours over a natural giant wall of Newman Lake Gneiss that displays fractures, faults, and dikes. Freezing water in the fractures causes cracks to expand, and when it melts, the wall is weakened. With the water acting as a lubricant, loosened pieces of rock slide off the wall to the bottom of the falls. Look closely at the rocks along the path near the shelter, and you will see *quartz ribbons* that formed and became aligned during the metamorphism that created the gneiss, which indicate intense conditions from deep in the earth's crust.



## SITE ⑨ - THE POTHOLES

Walk across *Mirabeau Parkway* to the banks of the Spokane River, and you can find *The Potholes*. These potholes have been drilled out slowly by erosive power of the river and the sediments that scrape along its riverbed.



Sediments become trapped, collect in the depressions of the rock, and get pushed around in circles. Over

time, these loose sediments act as a drill tool, gradually eroding away at the depression, causing it to widen and deepen.



## SITE ⑩ - THE GNEISS WALL

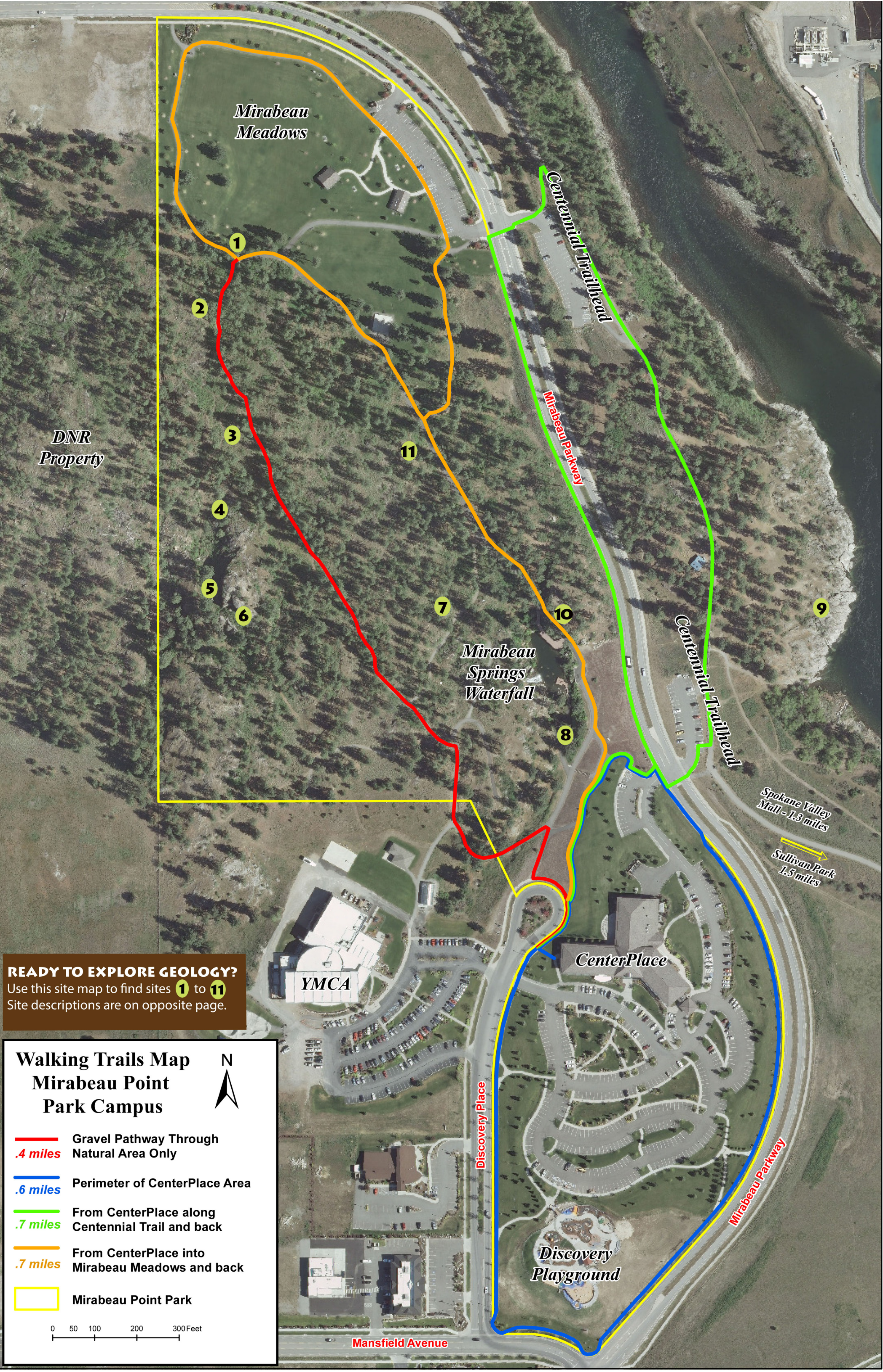
Here is an excellent exposure of the main bedrock formation seen throughout the park, the *Newman Lake Gneiss* formation. The chemical reactions that occurred from extreme temperature and pressure conditions, formed new mineral crystals in an aligned pattern called foliation. In this outcrop, you can see quartz (gray), feldspar (milky white), and biotite mica (black). If you look closely, you can also see foliation. What other interesting features can you see in this outcrop?



## SITE ⑪ - THE FOREST

Our tour ends in the peace and quiet of *The Forest*. Look around you and note not much rock exposed here. Why is that? Weathering of rocks by the elements, rain, snow, and air cause rocks to decompose and eventually develop into soil. Plants begin to take hold and a forest takes over the landscape. Think of all the places bugs and animals can hide and live. *Mirabeau Point Park* is a special place where geology and biology have created a natural and undisturbed landscape. We hope you enjoyed this tour and learned more about what has led to the formation of our beautiful park and region!





DNR  
Property

Mirabeau  
Meadows

Centennial Trailhead

Mirabeau Parkway

Centennial Trailhead

Mirabeau  
Springs  
Waterfall

Spokane Valley  
Mall - 1.3 miles

Sullivan Park  
1.5 miles

CenterPlace

YMCA

Discovery  
Playground

Mansfield Avenue

**READY TO EXPLORE GEOLOGY?**  
Use this site map to find sites **1** to **11**  
Site descriptions are on opposite page.

### Walking Trails Map Mirabeau Point Park Campus



- Gravel Pathway Through Natural Area Only  
**.4 miles**
- Perimeter of CenterPlace Area  
**.6 miles**
- From CenterPlace along Centennial Trail and back  
**.7 miles**
- From CenterPlace into Mirabeau Meadows and back  
**.7 miles**
- Mirabeau Point Park

