



## The Friends of Pheasant Branch Conservancy

# Landforms Exploration Guide

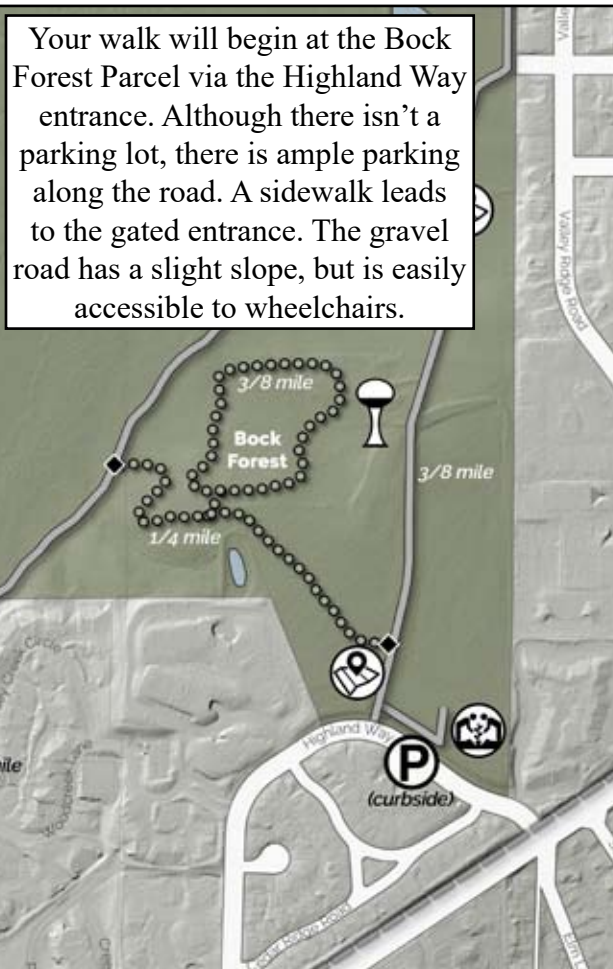
As you walk this flat path, you may wonder why the land looks the way it does. What forces over time have shaped this high point and surrounding area? How did the glacier change our local landforms? What was here before the glacier? The earth's history is long and complex, and there are many agents of change. Let's consider weathering, erosion, and time.

As you walk along the path notice:

- The flatness of the slope. How might slope influence weathering and erosion?
- Prairie plants grow almost to the edge of the path. How might this influence erosion? What variety of plants do you see?
- Look at the areas next to the gravel road for signs of erosion. How might this compare to areas with a slope?
- Look for the measures the city has used for erosion control.
- On the west side notice the small burr oaks that were planted by the city. The addition of these trees changes the landscape from prairie to an oak savannah.
- The red rhyolite rocks forming the circle were a favorite of John Bock.

At the water tower:

- Notice the change in the slope as you approach the water tower, and if there is a related change in erosion on or near the path.
- As we pass the water tower, notice the rounded boulders down slope. Why do you think they are there? What evidence do you see



Your walk will begin at the Bock Forest Parcel via the Highland Way entrance. Although there isn't a parking lot, there is ample parking along the road. A sidewalk leads to the gated entrance. The gravel road has a slight slope, but is easily accessible to wheelchairs.

to support your ideas?

- What differences do you notice between the prairie plants and the grassy slope? Share some wonderings with your companions.

View from the Highlands:

Take a few minutes to enjoy the view from this high point. As you look down and across the valley notice the developments and neighborhoods. There is a park and soccer fields as well. Crushed limestone paths go into the restored prairie. Fredricks' Hill is topped with Burr Oaks. The springs provide a flowing stream of fresh water to Lake Mendota, and there is another high area to your west.

### Effects of Human Development

- Northlake subdivision is straight ahead of you. Do you think there may be any erosion concerns in this neighborhood? What evidence can you observe to support your thoughts?
- Do you notice the wind turbines to the west? Are you familiar with the changes that are being made by local government and businesses, like EPIC, to generate and use sustainable energy?
- What do you think is the current impact of climate to our communities?
- What are some events in your lifetime that made you think about changing landforms?
- Why do you think it's important to control erosion near and in the Conservancy?
- What do you think is the value of soil, and what happens when the soil is moved from land to the wetlands?
- Why do you think the deposition of sediments and chemicals can be harmful to wildlife? Think about the soil that fills in the wetlands and makes the clear water cloudy. Do wild animals need clear water to be healthy?
- How do you think dissolved fertilizers and chemicals change the water quality?
- How might the excessive growth of undesirable plants and decomposing plants lower the water quality?
- What is the cost and benefit to you, our community and wildlife in managing storm water?
- As you walk back to the entrance, look around and share your observations about the area with your companion. Imagine and wonder what this area would have been like prior to restoration. What might it look like if it had been developed and what might be the impact to the Conservancy?



# Landforms Background Info

## Bock Forest Acquisition

Thanks to many individuals, as well as the Dane County Conservation Fund, the Wisconsin Stewardship Fund, the City of Middleton and several foundations, the Friends of Pheasant Branch Conservancy raised \$3 million to purchase 19.7 acres of land adjacent to the Conservancy from the Middleton-Cross Plains School District in 2005.

The Friends deeded this land to the City of Middleton. The Friends have partnered with the City to develop and implement a restoration plan for the forested areas and prairie restoration.

Prior to restoration, this area was overgrown with buckthorn, honeysuckle and cottonwood trees. In the spring of 2008 there were several Middleton High School AP Environmental Studies students that mapped out the vegetation using REI donated GPSs. Currently the Bock Forest has a community garden, beautiful restored prairie, native trees and access to an old growth forest.



## Middleton's Glacial History

- Middleton was once on the edge of a large river valley that flowed to the southeast.
- The last glaciation, called the Green Bay Lobe of the Laurentide Ice Sheet, advanced past and covered Middleton about 20,000 years ago.
- The glacier's edge reached as far as Cross Plains and Verona 30,000 years ago.
- The ice margin was once along where we have the Beltline. Glacial Lake Middleton existed to the west of Parmenter Street. This lake drained after the ice margin melted leaving lake sediments and peat deposits behind.
- The ice was gone from our area around 12,000 years ago.
- This glaciation caused erosion of the river valley as well as deposition of glacial till.

### Local Landforms:

- We are standing on the top edge of the slope or valley. You can get a similar view from the City Parking Lot off of Pheasant Branch Rd. Straight ahead of us is Fredricks' Hill. This high point is capped with our erosion resistant

dolomite. Fredricks' Hill was scoured and shaped by the glacier. It is not considered to be a drumlin.

- Fredricks' Hill is a great place to get a wonderful view of the Conservancy, Lake Mendota, Mounds, and lands to the east and west.
- The hill provides an oak savannah and restored prairie that is good for wildlife.
- There are farms to the northwest of the hill with agriculture and animals.
- In the woods are numerous rounded boulders, called glacial erratics, that were carried in the glacier from northern Wisconsin.

### Springs and Wetlands:

- Look at the springs and the wetlands to the west. The wetlands are there because that is the level that the soil is saturated with ground water. We call this the water table.
- Erosion tends to slow down and deposition starts to take place at the water table.
- Further to the south the wetlands flow through a flood plain and drain into Lake Mendota.
- The springs and wetlands provide a variety of habitats to wildlife in the Conservancy.