

## The USGS National Center

The John Wesley Powell Federal Building, the main building at the National Center, is named after the U.S. Geological Survey's second Director. Powell led the first scientific expedition to explore the Colorado River and made extensive surveys of western lands from 1869 to 1878.

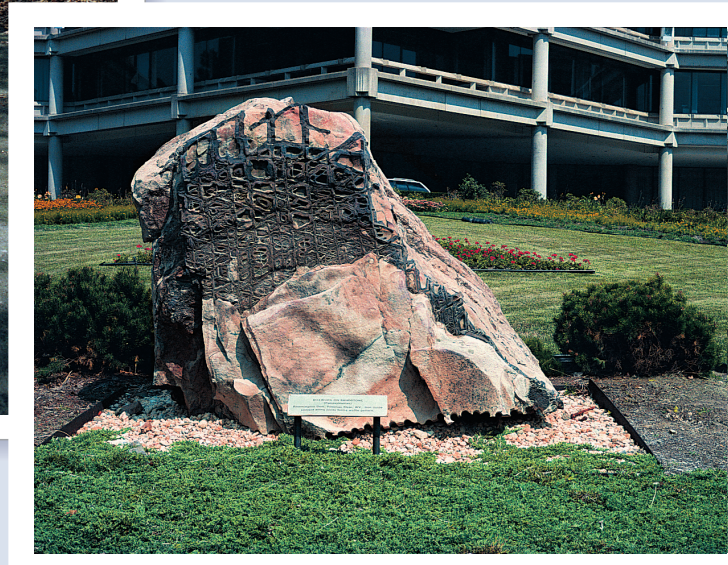
The building was designed by Skidmore, Owings, and Merrill of Chicago, whose architects collaborated with USGS scientists to create a space that would reflect the Survey's mission. For example, the main tower was designed in the shape of an eight-pointed star to represent the cardinal points of the compass. Care was also taken to ensure that this structure would be in harmony with the natural wooded area of diverse native Virginia vegetation. The site (105 acres) provides habitat for many native and migratory birds, insects, and large and small mammals.



Visitors are invited to enjoy these surroundings by exploring the USGS Woodland and Rock Garden Walks described on the two pages to the right.

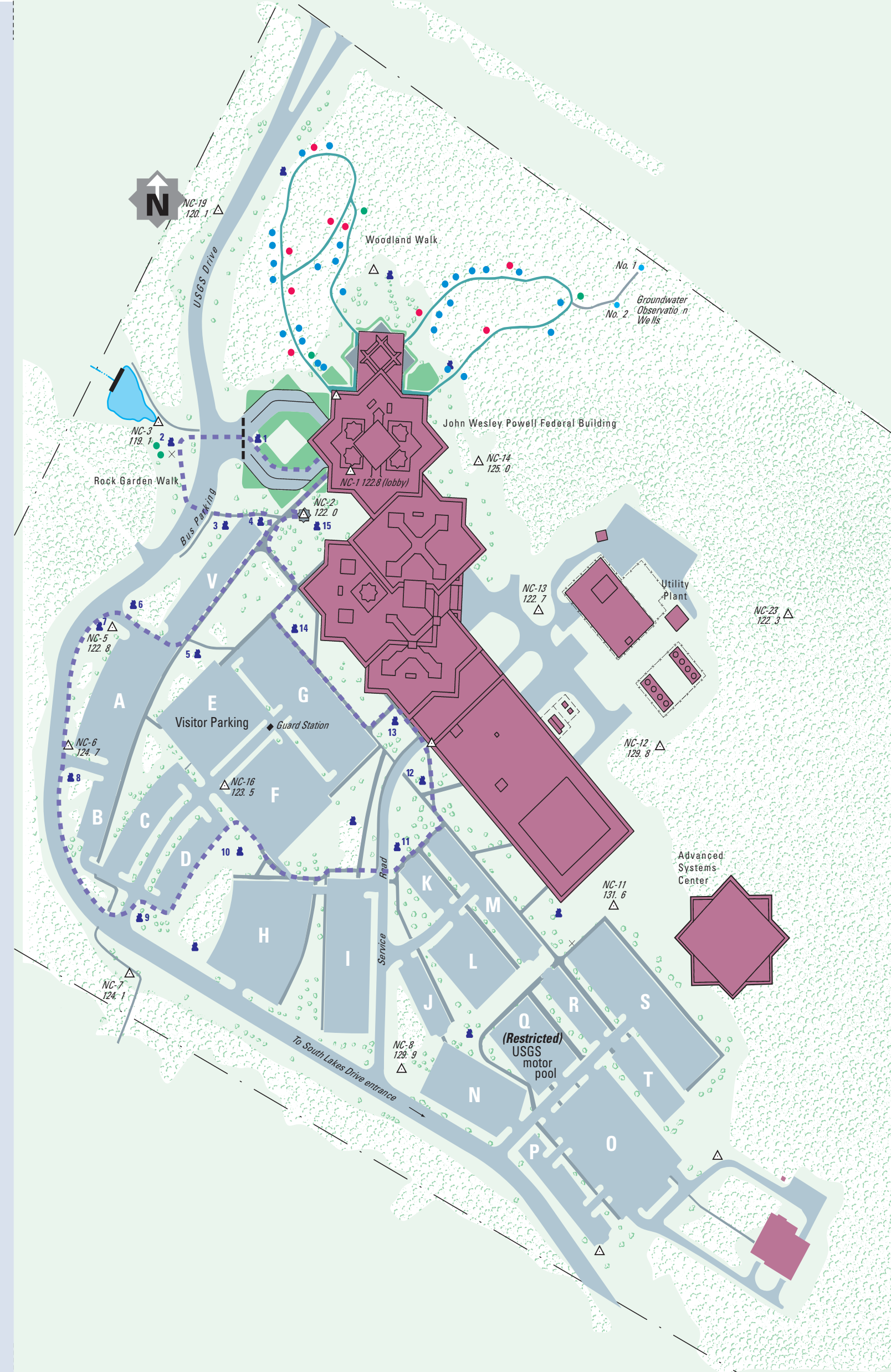


Scenes from the Woodland Walk (above) and the Rock Garden Walk (right).



Learn more about the USGS -- its mission and its many locations across the country -- in the "About USGS" link from the USGS Home Page (<http://www.usgs.gov>).

For more information on Powell and the history of the USGS, read USGS Circular 1050, The United States Geological Survey: 1879-1989 (<http://pubs.usgs.gov/circ/c1050/index.htm>).



## Woodland Walk

The Woodland Walk (green path on map) winds through the forested area north of the main entrance to the Powell Federal Building. Along the walk and elsewhere on the grounds, indigenous trees have been labeled with their scientific and common names. On the map, colored dots provide a generalized identification key: green for conifers, blue for deciduous, and red for flowering deciduous trees. See how many of the following trees you can find!



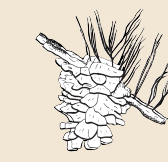
**Oak:** Many native species occur along the walk, including black, chestnut, southern red, scarlet, and white oaks. (Other oak species that can be found on the USGS site include the blackjack, swamp white, willow, and post oaks.)



**Red Maple:** The name is derived from red buds that appear in February or March, heralding the coming of spring.



**Pignut or Broom Hickory:** This spindly hardwood thrives in deep shade and poorly drained soil.



**Virginia Pine:** This tall slender conifer with two-needle bundles quickly invades abandoned fields, preventing loss of topsoil.



**Black Tupelo:** This dark-barked tree has small, round, dark-blue fruit resembling gum balls.



**Flowering Dogwood:** The dogwood is a decorative tree, whose white blossoms brighten the early spring.



**Tulip Tree or Yellow Poplar:** This softwood tree with broad palmate leaves produces large yellow flowers. It forms much of the forest canopy of the National Center site.



**Sassafras:** This low, scrubby tree, used in colonial times to make fenceposts and small boats, has aromatic leaves and roots that can be used to prepare a tea.

## Rock Garden Walk

Large rock specimens have been placed on gravel pads around the USGS site to show examples of some nearby rock units in the Triassic Lowland and in the Maryland and Virginia Piedmont. The rocks exhibit striking sedimentary, structural, mineralogical, and weathering features.

- Boxwork sandstone:** "Waffle rock" resulted when sandstone was deposited in a stream, filling cracks and joints in existing rock. (Conemaugh Formation, 300 million years old)
- Tinguaitite:** An unusual igneous rock that occurs in dikes. Large potassium feldspar crystals are set in a green groundmass colored by tiny needles of pyroxene. Near the tinguaitite sample, you'll see two "dawn redwoods," native to Central China. Fossils of this same genus (*Metasequoia*) were found in 60-million-year-old rocks in the Bearpaw Mountains of Montana.
- Cordierite hornfels:** Found in the central Culpeper basin of Virginia and Maryland, the dark cordierite has been altered to muscovite mica, retaining the crystal shape of cordierite.
- Amygdaloidal basalt:** Gas bubbles from a 200-million-year-old altered lava flow formed cavities (amygdules) which gradually filled in with zeolites. From western Culpeper basin.
- Conestoga Limestone:** Sequence of limestone and dolomite beds, 475-500 million years old, with recumbent isoclinal folds.
- Cockeysville Marble:** Originally limestone, dolomite, and shale, metamorphosed by heat and pressure of mountain-building in the Maryland Piedmont more than 500 million years ago.
- Cockeysville Marble:** This well-crystallized marble has been eroded by water and stained black by auto exhaust. This marble was used for the upper section of the Washington Monument.
- Cockeysville Marble:** From a part of the sequence that is more than 600 million years old, the pale green diopside indicates that a calcium-rich dolomite bed was metamorphosed to form this rock. Rust-like stains result from the weathering of pyrite.
- Columbia River basalt:** Formed by huge floods of lava that covered large parts of Washington State 10 to 16 million years ago. Hexagonal columns resulted from rapid cooling.
- Annville Formation:** Limestone; Middle Ordovician (about 460-470 million old), from Pennsylvania. Fossils, including bryozoans, echinoderms, and the big snail *Maclurites*, show that it was deposited as part of a warm, shallow sea floor. The rough surfaces are typical of chemical weathering from rainfall and ground water.
- Diabase:** An igneous rock that intruded and metamorphosed (altered through heat and pressure) sedimentary rock in the east-central Triassic lowland about 195 million years ago.
- Quartz vein:** This Piedmont specimen of gray Peters Creek Schist shows a quartz vein that was injected as liquid rock.
- Cannel coal:** This rare type of low-grade bituminous (soft) coal ignites quickly and burns with a steady flame. It gets its name from the Welsh word for candle ("canwyl").
- Bossardville Limestone and Decker Limestone:** Limestone-dolomite-shale sequences deposited in several marine environments. Patterns in the sequences reflect the effects of tides on the depositions.
- Limestone conglomerate:** Sedimentary rock from rounded fragments of 500-million-year-old Cambrian-age limestones from the Blue Ridge. When cut and polished it makes decorative stone, such as that used in the Statuary Hall of