



# Wild and Scenic Rivers:

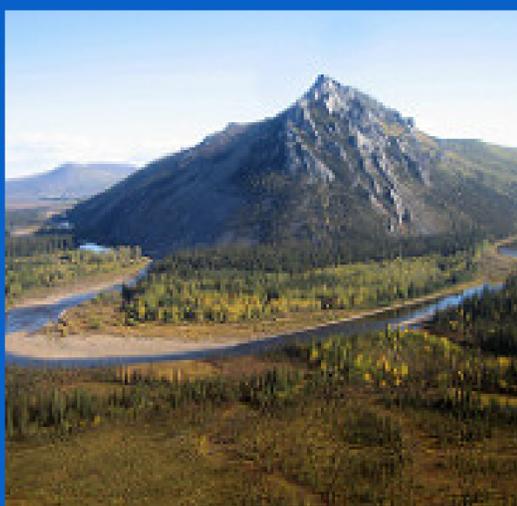
## *Geology and Hydrology*

Geology is the study of how the Earth changes through time. Hydrology is the study of water systems and water movement throughout the Earth.

Over 45% of designated Wild and Scenic Rivers have outstanding geologic or hydrologic resources. These rivers display features or processes that are unique, rare, or exemplary to their regions.

They may highlight unusual landscapes, represent textbook examples of earth processes, or have rare combinations of geologic features in the river corridor.

### *Geology and hydrology affect...*



#### *Scenery*

Rivers constantly rearrange landscapes over time through weathering and erosion. Rivers carve through rock and soil, creating amazing canyons, gorges, and sloping mountains. The scenic values of these features often contribute to the case for Wild and Scenic River designation.

Photo: Bureau of Land Management



#### *Ecology*

When rivers flow over rocks, water mixes with air and oxygen is dissolved. Many fish and aquatic animals rely on water with high amounts of dissolved oxygen to live.

Some fish species, like American shad, need riffles to provide safe places for their young to mature. Riverbeds provide critical habitat for many plants and animals, including aquatic insects. Some of these species have only been found in designated rivers.

Photo: Thomas O'Keefe



#### *Recreation*

A river's slope and rocky bottom can create rapids, making boating fun and challenging! Rivers with high water quality often have exceptional recreational fishing opportunities. For recreation out of the water, trails along rivers provide hikers with spectacular views.

Photo: Thomas O'Keefe

Photo: Bureau of Land Management



## *Wild and Scenic Rivers with outstanding geology and hydrology*



### *Crooked River, OR*

The Lower Crooked River basin was created over thousands of years by a number of volcanic eruptions. Colorful layers of basalt and sedimentary rock form the canyon walls and create incredible scenery.

Photo: Bob Wick



### *Fossil Creek, AZ*

Fossil Creek's travertine terraces create a series of natural dams and pools. Travertine forms when spring water rich in calcium carbonate deposits minerals.

Photo: Thomas O'Keefe



### *Merced River, CA*

The Merced River flows through canyons carved by glaciers, over sheer cliffs, and down steep cascades. The stretch of river known as "Giant Staircase" provides an outstanding example of a stair-step river formation.

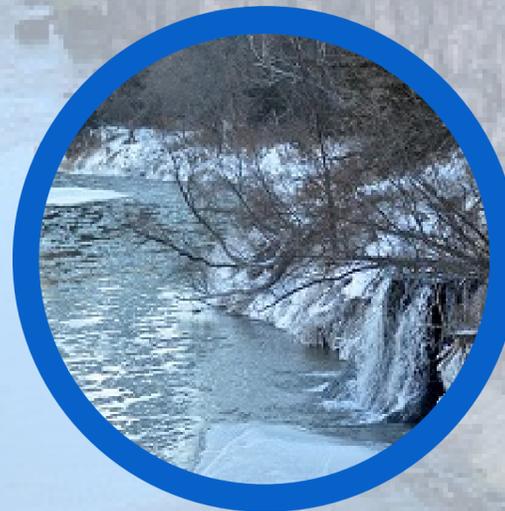
Photo: Tim Palmer



### *River Styx, OR*

The River Styx is the only Wild and Scenic River that flows entirely underground. The river flows through a marble cave, which formed over time as groundwater dissolved through the carbonate bedrock. The River Styx flows through a cave with many fossils.

Photo: National Park Service



### *Niobrara River, NE*

The Niobrara River is the only river in Nebraska that carves down into the bedrock. Springwater falls down steep riverbanks; a rare sight in this region. A mix of geology, soil, and terrain types helps support the diverse ecology within the river corridor.

Photo: Kristen Maxfield



### *Upper Delaware River, PA & NY*

The Upper Delaware River's steep and narrow valley was formed over thousands of years as water cut through ancient glacial sediments. At Skinners Falls, exposed bedrock creates rapids that are popular with river users.

Photo: Kelleen Lanagan