

# **EXHIBIT 37**

**National Park Service****Mississippi** National River & Recreation Area  
Minnesota

# Mississippi River Facts

## Introduction to the River

The Mississippi River is one of the world's major river systems in size, habitat diversity and biological productivity. It is also one of the world's most important commercial waterways and one of North America's great migration routes for both birds and fishes.

Native Americans lived along its banks and used the river for sustenance and transportation. Early European explorers used the Mississippi to explore the interior and the northern reaches of what was to become the United States. Fur traders plied their trade on the river and soldiers of several nations garrisoned troops at strategic points, at various times, along the river when the area was still on the frontier.

White settlers from Europe and the United States (and often their slaves) arrived on steamboats dispossessing the Native Americans of their lands and converting the landscape into farms and cities.

Today, the Mississippi River powers a significant segment of the economy in the upper Midwest. Barges and their tows move approximately 175 million tons of freight each year on the upper Mississippi through a system of 29 locks and dams. It is also a major recreational resource for boaters, canoeists, hunters, anglers, and birdwatchers and offers many outdoor opportunities.

[A more comprehensive discussion of the history of the upper Mississippi River](https://www.nps.gov/miss/learn/historyculture/historic_resources.htm) ([https://www.nps.gov/miss/learn/historyculture/historic\\_resources.htm](https://www.nps.gov/miss/learn/historyculture/historic_resources.htm)), and specifically, the 72 mile long corridor within the Mississippi National River and Recreation Area, may be found online.

## Dimensions

### Length

The Mississippi River is the second longest river in North America, flowing 2,350 miles from its source at Lake Itasca through the center of the continental United States to the Gulf of America. The Missouri River, a tributary of the Mississippi River, is about 100 miles longer. Some describe the Mississippi River as being the third longest river system in the world, if the length of Missouri and Ohio Rivers are added to the Mississippi's main stem.



When compared to other world rivers, the Mississippi-Missouri River combination ranks fourth in length (3,710 miles/5,970km) following the Nile (4,160 miles/6,693km), the Amazon (4,000 miles/6,436km), and the Yangtze Rivers (3,964 miles/6,378km). At a rivers delta, the reported length may increase or decrease as deposition and erosion occurs.

As a result, different lengths may be reported depending upon the year or measurement method. The US Geologic Survey has published a number of 2,300 miles, the EPA says it is 2,320 miles long, and the Mississippi National River and Recreation Area suggests the river's length is 2,350 miles.

## Width

At Lake Itasca, the river is between 20 and 30 feet wide, the narrowest stretch for its entire length. The widest part of the Mississippi can be found at Lake Winnibigoshish near Bena, MN, where it is wider than 11 miles. The widest navigable section in the shipping channel of the Mississippi is Lake Pepin, where the channel is approximately 2 miles wide.

## Speed

At the headwaters of the Mississippi, the average surface speed of the water is about 1.2 miles per hour - roughly one-half as fast as people walk. At New Orleans the river flows at about three miles per hour. But the speed changes as water levels rise or fall and where the river widens, narrows, becomes more shallow or some combination of these factors. It takes about three months for water that leaves Lake Itasca, the river's source, to reach the Gulf of America.

## Volume

Another way to measure the size of a river is by the amount of water it discharges. Using this measure the Mississippi River is the 15th largest river in the world discharging 16,792 cubic meters (593,003 cubic feet) of water per second into the Gulf of America. The biggest river by discharge volume is the Amazon at an impressive 209,000 cubic meters (7,380,765 cubic feet) per second. The Amazon drains a rainforest while the Mississippi drains much of the area between the Appalachian and Rocky Mountains, much of which is fairly dry.

At Lake Itasca, the average flow rate is 6 cubic feet per second. At Upper St. Anthony Falls in Minneapolis, the northern most Lock and Dam, the average flow rate is 12,000 cubic feet per second or 89,869 gallons per second. At New Orleans, the average flow rate is 600,000 cubic feet per second.

## Watershed Size

Some like to measure the size of a river is by the size of its watershed, which is the area drained by a river and its tributaries. The Mississippi River drains an area of about 3.2 million square kilometers (1.2 million square miles) including all or parts of 31 states and two Canadian provinces, about 40% of the continental United States. The Mississippi River watershed is the fourth largest in the world, extending from the Allegheny Mountains in the east to the Rocky Mountains in the west. The Amazon for comparison drains about 7.1 million square kilometers (2.7 million square miles).

## Water Supply

Communities up and down the river use the Mississippi to obtain freshwater and to discharge their industrial and municipal waste. We don't have good figures on water use for the whole Mississippi River Basin, but we have some clues. A January 2000 study published by the Upper Mississippi River Conservation Committee states that close to 15 million people rely on the Mississippi River or its tributaries in just the upper half of the basin (from Cairo, IL to Minneapolis, MN). A frequently cited figure of 18 million people using the Mississippi River Watershed for water supply comes from a 1982 study by the Upper

Mississippi River Basin Committee. The Environmental Protection Agency simply says that more than 50 cities rely on the Mississippi for daily water supply.

## Commerce

Agriculture has been the dominant land use for nearly 200 years in the Mississippi basin, and has altered the hydrologic cycle and energy budget of the region. The agricultural products and the huge agribusiness industry that has developed in the basin produce 92% of the nation's agricultural exports, 78% of the world's exports in feed grains and soybeans, and most of the livestock and hogs produced nationally. Sixty percent of all grain exported from the US is shipped on the Mississippi River through the Port of New Orleans and the Port of South Louisiana.

In measure of tonnage, the largest port district in the world is located along the Mississippi River delta in Louisiana. The [Port of South Louisiana \(http://www.portsl.com/overview.htm\)](http://www.portsl.com/overview.htm) is one of the largest volume ports in the United States.

Representing 500 million tons of shipped goods per year (according to the [Port of New Orleans \(http://www.portno.com/pno\\_pages/about\\_overview.htm\)](http://www.portno.com/pno_pages/about_overview.htm)), the Mississippi River barge port system is significant to national trade.

Shipping at the lower end of the Mississippi is focused on petroleum and petroleum products, iron and steel, grain, rubber, paper, wood, coffee, coal, chemicals, and edible oils.

To move goods up and down the Mississippi, the U.S. Army Corps of Engineers maintains a 9-foot shipping channel from Baton Rouge, LA to Minneapolis, MN. From Baton Rouge past New Orleans to Head of Passes, a 45 foot channel is maintained to allow ocean-going vessels access to ports between New Orleans and Baton Rouge.

## Background Information

There are 7.489 gallons of water in a cubic foot. One cubic foot of water weighs 62.4 pounds. A 48 foot semi-truck trailer is a 3,600 cubic foot container.

- At Lake Itasca, it would take 10 minutes for one semi-trailer of water to flow out of the lake into the Mississippi.
- At St. Anthony Falls, the equivalent of 3 semi-trailers full of water go over the falls every second.
- At New Orleans, the equivalent of 166 semi-trailers of water flow past Algiers Point each second.

## Wildlife

The Mississippi River and its floodplain are home to a diverse population of living things:

- At least 260 species of fish, 25% of all fish species in North America, live in the Mississippi River. [Learn more about selected fish species of the Mississippi in the Minnesota area \(https://www.nps.gov/miss/learn/nature/fish.htm\)](https://www.nps.gov/miss/learn/nature/fish.htm).
- Forty percent of the nation's migratory waterfowl use the river corridor during their spring and fall migration.
- Sixty percent of all North American birds (326 species) use the Mississippi River Basin as their migratory flyway. [Learn more about birds of the Mississippi River in the Minnesota area \(https://www.nps.gov/miss/learn/nature/birds.htm\)](https://www.nps.gov/miss/learn/nature/birds.htm).
- From Cairo, IL upstream to Lake Itasca there are 38 documented species of mussel. On the Lower Mississippi, there may be as many as 60 separate species of mussel. [Learn more about mussels of the upper Mississippi River \(https://www.nps.gov/miss/learn/nature/mussintro.htm\)](https://www.nps.gov/miss/learn/nature/mussintro.htm).
- The Upper Mississippi is host to more than 50 mammal species;

- At least 145 species of amphibians and reptiles inhabit the Upper Mississippi River environs.

Wildlife is abundant within the Mississippi National River and Recreation Area. [Find out more about our wildlife \(https://www.nps.gov/miss/learn/nature/animals.htm\)](https://www.nps.gov/miss/learn/nature/animals.htm).

## Works Cited

[U.S. Environmental Protection Agency \(http://www.epa.gov/\)](http://www.epa.gov/)

[Upper Mississippi River Conservation Committee \(http://www.umrcc.org/\)](http://www.umrcc.org/)

[Lower Mississippi River Conservation Committee \(http://www.lmrcc.org/\)](http://www.lmrcc.org/)

[U.S. Army Corps of Engineers, New Orleans \(http://www.mvn.usace.army.mil/\)](http://www.mvn.usace.army.mil/)

[U.S. Army Corps of Engineers, St. Paul \(http://www.mvp.usace.army.mil/\)](http://www.mvp.usace.army.mil/)

[U.S. Geological Survey \(https://biology.usgs.gov/\)](https://biology.usgs.gov/)

[MN Department of Natural Resources, Itasca State Park \(http://www.dnr.state.mn.us/state\\_parks/itasca/index.html\)](http://www.dnr.state.mn.us/state_parks/itasca/index.html)

[Port of New Orleans \(http://www.portno.com/\)](http://www.portno.com/)

[Port of Southern Louisiana \(http://www.portsl.com/\)](http://www.portsl.com/)

[The McKnight Foundation \(http://www.mcknight.org/\)](http://www.mcknight.org/)

[Louisiana Coastal Wetlands Restoration Website \(http://www.lacoast.gov/\)](http://www.lacoast.gov/)

[National Wetlands Research Center \(https://www.nwrc.usgs.gov/\)](https://www.nwrc.usgs.gov/)

## Other Resources

More information about water quality within the Mississippi National River and Recreation Area (Minnesota) may be found in the [State of the River report \(http://stateoftheriver.com/\)](http://stateoftheriver.com/).

The *River of History* discusses the history represented within the 72 mile corridor of the Mississippi National River and Recreation Area, including the history of Native Americans and dispossession, exploration, transportation, commerce, navigation, and other topics. [The River of History is provided online \(https://www.nps.gov/miss/learn/historyculture/historic\\_resources.htm\)](https://www.nps.gov/miss/learn/historyculture/historic_resources.htm).

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