Question: How can I obtain maps of the Mississippi River?

Answer: I am mailing you a brochure that you might find helpful, "Access Roads Along the Mississippi River." You can also purchase our *1998 Flood Control and Navigation Maps of the (lower) Mississippi River* for $20 (plus $3 shipping) from any of the following district locations: (These cannot be bought on-line)

U.S. Army Corps of Engineers, Memphis District
ATTN: Map Sales Office
167 N. Main Street
Memphis, TN 39103-1894
(901) 544-3351

U.S. Army Corps of Engineers, Vicksburg District
ATTN: Map Sales Office
4155 Clay Street
Vicksburg, MS 39180-3435
(601) 631-5042

U.S. Army Corps of Engineers, New Orleans District
ATTN: Engineering Central Files Unit
Post Office Box 60267
New Orleans, LA 70160-0267
(504) 862-1775

This navigation book includes maps of the lower Mississippi River from mile 300 (above Ohio River) to the Head of Passes, Southwest Pass and the Mississippi River Gulf Outlet. This mapping represents about 1,400 miles of the inland waterway system.

The map sheet files, in pdf format, are also available on the Internet home page of the Mississippi Valley Division at: http://www.mvd.usace.army.mil/reegis/navbook/main2.htm

You will also want to contact the 8th U.S. Coast Guard, New Orleans, LA. 504-589-6298. They are responsible for inland waterways and can provide additional information.

A good website for all navigation needs is: http://www.mvr.usace.army.mil/navdata/nic.htm

You can get information about canoeing, rafting, and jet skiing, etc. down the Mississippi from the 8th U.S. Coast Guard. You can contact each of the Public Affairs offices in St. Paul District, Rock Island District, and St. Louis District on how to lock through the 29 locks located on the Mississippi. Their numbers are below:

St. Paul District
(651) 290-5201

Rock Island
(309) 794-5274

St. Louis District
(314) 331-8002

Question: Can I canoe or raft on the Mississippi River?

Answer: If you are planning a trip you will want to contact the 8th U.S. Coast Guard, New Orleans, LA. 504-589-6298. They are responsible for inland waterways and can provide additional information. It is not uncommon to see whitecaps created by the wind and there is a lot

of trash and debris in the water, particularly during rising stages. Please check the river stage prior to leaving on your trip.

Large logs are a common sight -- they have been known to rise straight up in the air from a large eddy and others sucked down in a similar manner. Automobile tires (on the rim) and refrigerators have been seen floating down the river. If the river is low, there might not be anything to tie your boat up to. Bring an anchor with a long rope. There is also quick sand in some areas.

The lower river can be very dangerous. The currents are swift and, as I stated above, debris is common. The river is several miles wide in some places. There are stone dikes (wing dams) protruding out from the banks that can be submerged just under the surface of the water. There can also be a head differential of two or three feet between the upstream and downstream of sides of a dike as water passes over it. Sometimes this difference is hard to see if you approach from the upstream side, especially from a small boat.

Additionally, commercial traffic on the river is heavy with towboats pushing tows up to 1/4 mile in length with limited ability to stop or maneuver in an emergency -- steer clear.

Question: Can you provide facts and figures about the Mississippi River?
Answer: The Mississippi River begins at Lake Itasca in northwest Minnesota and flows for 2,348 miles to the Gulf of Mexico (includes 20 miles for Head of Passes). This length makes it the fifth longest river in the world. However, measuring from the mouth of the Mississippi River up the Missouri River, to the source of the Red Rock River in Montana, the length is 3,892 miles. This length is exceeded only by the Nile and Amazon Rivers.

The Mississippi River Drainage Basin covers some 1.25-million-square-miles and gathers water from 41 percent of the continental United States. This includes all or part of 31 states and two provinces in Canada. It is exceeded only by the Amazon and the Congo rivers in size of drainage area.

The Mississippi River serves as the trunk of a vast inland navigable waterway system that extends for 12,350 miles.

Each year, the Mississippi River transports more than 500 million tons of commodities.

The 35,000-square-mile alluvial valley of the Lower Mississippi extends from Cape Girardeau, Missouri, to the Gulf of Mexico. This natural floodplain, currently protected by the Mississippi River and Tributaries Project, is nearly equal in size to the state of Indiana.

Each year the Mississippi River transports 230 million tons of sediment to coastal Louisiana and the Gulf of Mexico.

The upper and lower river's characteristics are very different. The upper Mississippi **Valley** (not river) is five to ten miles wide and the river features a system of 29 locks and dams to facilitate navigation. The 35,000-square-mile lower Mississippi **Valley** (not river) is 25-125 miles in width and the river is free flowing. Below St. Louis, a nine-foot navigation channel is maintained without the need for locks and dams. And south of Baton Rouge, the river is deep enough to accommodate ocean-going vessels, with a depth of 45 feet maintained.

The Missouri Basin is the principal source of sediment that makes the river “muddy.” Sediments continuously flow into the river from its tributaries and its banks. Hence, the nickname “Muddy Miss” which describes well the nature of the river.

The average flow of water in the Mississippi is 640,000 cubic feet per second (cfs), which ranks it as sixth largest in the world. This flow is equal to the total flow from all other rivers in the contiguous United States that are not tributaries to the Mississippi.

Question: How was the river formed**?**

Answer: The Mississippi River was formed as an erosional remnant activated, and likely repositioned, most recently by glacial ice sheets. Probably the general drainage area has had similar directions of draining the mid-continent since the Tertiary. The Mississippi River, and its major tributaries- the Missouri and Ohio Rivers, are partly controlled by geologic structures that have changed (developed and subsided) through more recent geologic periods.

Question: What type of rocks do the river cut through**?**

Answer: The Mississippi River (also the Missouri and Platte Rivers) cuts through Precambrian units in its headwaters. The Mississippi River erodes all remaining time-stratagraphic units from Precambrian to Quaternary. The Mississippi River flows through rocks from Ordovician to Quaternary ages over two short reaches in southeastern Missouri and southwestern Illinois.

Question: What is the average gradient, discharge, size, and shape of the channel**?**

Answer: This info is based on the lower valley and the Vicksburg, Mississippi, gage.

Discharge:
High in 1927 -- 2,278,000 cfs (cubic feet per second)
Low in 1936 -- 9,900 cfs
Mean -- 719,000 cfs

Gradient: About .4 ft per mile (and that could be plus or minus).

The plane view from Cairo, Illinois, to Baton Rouge, Louisiana, is meandering with islands and below Baton Rouge is a single channel. In a profile view, the crossing channels take on a trapezoidal shape and the pool sections look like a deep "v". The width may be 5000 feet to 2500 feet at low water. At the Vicksburg gage, the stage may vary as much as 50 feet in a year. With a bank full stage at about 43 feet on the gage, the discharge is about 1,400,000 cfs.

Question: Can you provide information on the weather forecast for the Mississippi River?

Answer: Please check the National Weather Service's main site at: http://www.nws.noaa.gov/

The National Weather Service's forecast site for the Lower Ohio and Lower Mississippi rivers: http://www.srh.noaa.gov/lmrfc/forecast/rva.shtml

Question: What are the state line borders along the Mississippi River?

Answer: The state line borders are considered "indefinite" because of the ever-changing water levels and thalweg (deepest parts) and flow. There have been a few cases where the Supreme Court had to develop a 'state line' for certain instances at a particular time but the general rule is "indefinite".

Question: Where is the widest point on the Mississippi River, and what is that distance?

Answer: The Mississippi River is an alluvial river, which means the present channel of the river is flowing in materials (sands gravels, silts, and clays) that the river transported from higher elevations in the basin to the banks and bed or bottom of the river. The river does not have one physical description for deepest or widest location. The river gets larger as it flows down the basin and tributaries join. So, with the local geology and the local slope, the river will take on a description that will be similar shape but a different size. There is not a single set of numbers that are the dimensions of the width or depth of the river. Each bend and crossing is a reflection of the local alluvium the river is attempting to move as it meanders down the valley. Maybe a listing of locations and measurements can be used to best describe the Mississippi River's physical size.

The Mississippi River should be divided into three sections:
The headwaters -- the portion of the river that is above Minneapolis-St. Paul, Minnesota.
The pool section -- the portion of the Mississippi River that is controlled by the Mississippi River Locks and Dams and the
The open river -- the portion of the river below Lock and Dam 26 at St. Louis, Missouri, to the head of passes below New Orleans Louisiana.

The widest location on the river may be the Lake Pepin 785 MAC to 765 MAC in pool No. 4 which is about three (3) miles wide at it widest point. In the lower river the Cottonwood Bar Reach may be the widest location (just under 3 miles wide) but that is including a middle bar that is under water at high stages. It is possible to have many locations in the open river portion of the river that is one to two miles across.

Question: Where is the narrowest point on the Mississippi River, and what is that distance?

Answer: The Mississippi River is an alluvial river, which means the present channel of the river is flowing in materials (sands gravels, silts, and clays) that the river transported from higher elevations in the basin to the banks and bed or bottom of the river. The river does not have one physical description for deepest or widest location. The river gets larger as it flows down the basin and tributaries join. So, with the local geology and the local slope, the river will take on a description that will be similar shape but a different size. There is not a single set of numbers that are the dimensions of the width or depth of the river. Each bend and crossing is a reflection of the local alluvium the river is attempting to move as it meanders down the valley. Maybe a listing of locations and measurements can be used to best describe the Mississippi River's physical size.

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The narrowest locations in the lower river are at bridge locations like Vicksburg, Miss., Natchez, Miss., or Cape Girardeau, Mo. This distance is about 3,500 feet at Vicksburg and Natchez and

2,300 feet at Cape Girardeau. There are many miles of the river in the New Orleans district where the river is 2500 feet top bank to top bank. As the focus moves upstream, at St Louis the open river section is less than 2,500 feet and at the headwaters of the Mississippi River the river narrows to 400 feet or less.

Question: Where is the deepest point on the Mississippi River, and what is that depth?

Answer: The Mississippi River is an alluvial river, which means the present channel of the river is flowing in materials (sands gravels, silts, and clays) that the river transported from higher elevations in the basin to the banks and bed or bottom of the river. The river does not have one physical description for deepest or widest location. The river gets larger as it flows down the basin and tributaries join. So, with the local geology and the local slope, the river will take on a description that will be similar shape but a different size. There is not a single set of numbers that are the dimensions of the width or depth of the river. Each bend and crossing is a reflection of the local alluvium the river is attempting to move as it meanders down the valley. Maybe a listing of locations and measurements can be used to best describe the Mississippi River's physical size.

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One of the deepest locations in the river is at Lagers Point just across the river from downtown New Orleans. This has been surveyed at a depth of -195 feet below mean sea level. With a 20-foot stage at New Orleans, the -195 would give a depth of 215 feet. At the Vicksburg bridge, the stage can fluctuate 50 feet above the low-water elevation and survey records show depths of 70 to 100 feet below low water to the bottom of the river. This would be a depth of 130 to 150 feet. Therefore, there is a range of depths affected by the location and the stage of the river at the time the measurements were recorded. The bends or concave banks of the river are generally deeper than the crossings between bends.

Question: Where is the shallowest point on the Mississippi River, and what is that depth?

Answer: The Mississippi River is an alluvial river, which means the present channel of the river is flowing in materials (sands gravels, silts, and clays) that the river transported from higher elevations in the basin to the banks and bed or bottom of the river. The river does not have one physical description for deepest or widest location. The river gets larger as it flows down the basin and tributaries join. So, with the local geology and the local slope, the river will take on a description that will be similar shape but a different size. There is not a single set of numbers that are the dimensions of the width or depth of the river. Each bend and crossing is a reflection of the local alluvium the river is attempting to move as it meanders down the valley. Maybe a listing of locations and measurements can be used to best describe the Mississippi River's physical size.

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The open river -- the portion of the river below Lock and Dam 26 at St. Louis, Missouri, to the head of passes below New Orleans Louisiana.

The same holds true with defining the shallowest stage and location of the river. At Choctaw Bar, River Mile 560 AHP, in 1973 the Corps had to dredge a channel even when the river stage was 50 feet on the gage at Vicksburg. The Mississippi River at the Head Water Reach at times of low flow may be only a few feet in depth.

Question: Can you provide navigation websites?

Answer: http://www.mvr.usace.army.mil/navdata/nic.htm

http://www.mvr.usace.army.mil/navdata/notices.htm

http://www.mvp.usace.army.mil/navigation/locks_and_dams/

Question: Can you provide information on wetlands?

Answer: Half the original 221 million acres of wetlands in the lower 48 states have been destroyed and additional acreage continue to be lost each year.

Wetlands support a wide variety of plant and animal populations that rely on the wetland for food, shelter and reproduction. Many of these inhabitants are Federally or state listed threatened or endangered species.

Wetlands provide the principal habitat for virtually all waterfowl. Some 75 percent of all waterfowl breed only in the wetlands.

Wetlands are more than water reserves. When water enters a wetland, the wetland acts as a purifier, cleaning the water before it exits. Wetlands do this by removing, retaining and transforming nutrients, processing wastes and trapping sediment.

Most groundwater-related wetlands occur near where the groundwater discharges into the water body. In some instances, the wetlands provide water to streams that begin to dry up during the summer months.

Certain wetlands recharge aquifers that provide drinking water.

Some wetlands, particularly those on floodplains and in coastal areas, function in flood control by storing excess water during storm events.

Wetlands stabilize shorelines and prevent erosion by binding streambanks and by absorbing wave energy. Some wetlands also play an early and fundamental role in land building, particularly in coastal areas that regularly lose land to the ocean.

Wetlands support a multibillion dollar fishing, hunting and outdoor recreation industry nationwide, as they provide direct spawning and rearing habitat and food supply that supports both freshwater and marine fisheries.

Many types of wetlands exist, depending upon the climate and landscape of the area:

Swamps primarily exist along inland rivers and the coastal regions of the United States and the Gulf of Mexico; some occur at inland depressional locations. Swamps are dominated by woody vegetation, such as bald cypress, cedars, maples, willows and oaks. Swamps are often wet part of the year and dry the rest of the year. Many large swamps can be found along the Mississippi River. Those with large and dense trees are dubbed "bottomland hardwood swamps." If managed

correctly, these wetlands can be a good source of wood products. In river systems, swamps help control flooding by slowing the water downstream and leveling flood peaks.

Salt or brackish tidal marshes exist in North America along the coasts. These coastal wetlands are dominated by plants that have adapted to the salinity of the environment.
The salt marsh has many values ÄÄ for example; it is an important spawning and nursery area. Without these wetlands, the commercial fishing industry would be nonexistent. Coastal marshes provide buffer zones for protection from storms and filter out pollutants in the water. During the winter, waterfowl reside in great numbers in the salt marsh; shorebirds and wading birds are also sometimes abundant. The seasonal beauty of salt marshes also provides many recreational activities. In the past, mosquito problems made it necessary to drain these areas. New techniques, however, have made mosquito control easier and drainage nearly obsolete.

Freshwater marshes are often found at the edge of lakes and rivers. The vegetation in freshwater marshes, dominated by herbaceous plants, is frequently quite diverse. These wetland regions are valuable for filtering water and providing habitat for wildlife, such as birds, reptiles and amphibians.

Lake and shoreline marshes are the most common freshwater marsh. These primarily small wetlands occur near lake borders or behind beaches. Lake and shoreline marshes filter the water flowing into the lakes to maintain better water quality. Wetlands of this type are also beautiful landscape additions and provide habitat to many species of wildlife. Natural fish production would be impossible in many cases without lake and shoreline marshes. Fish stocking becomes necessary to maintain fish population in instances where the wetlands have been destroyed for marinas and construction sites.

Artificial marshes exist where natural marshes were never located or where marshes were drained years earlier and humans have restored or created them. Water levels are manipulated by control structures and by pumping. Some artificial marshes are managed as habitats for many waterfowl and other wetland inhabitants. Many of these wetlands are owned and tended by wildlife agencies or nature clubs.

Cypress-gum swamps are wetlands usually found in the South. This swamp is an inland wetland, characterized by growth of large plant life, such as bald cypress, water tupelo and swamp tupelo.

Types of wetlands that can be found in other regions include:

Montane wetlands occur in the highlands, such as the mountains of Wyoming. In these areas with high water tables, glacial erosion has formed nearly level water bottoms. Montane wetlands appear along banks of stream systems in low mountain valleys with generally narrow floodplains. Some are found even on slopes, where seepage occurs. At very high elevations, basins of melted snow can support large montane wetlands.

Prairie potholes are depressions in the landscape that hold surface water or are fed by groundwater. Most prairie potholes were formed by glaciation. They can vary in size from a fraction of an acre to several square miles. This inland wetland is most common in the northern Great Plains of Minnesota and the Dakotas. Prairie potholes support an array of wildlife, including 50 to 80 percent of America's ducks. Substantial loss of prairie potholes has increased flooding and contaminated agricultural land and drinking water.

Bogs are freshwater peatlands that occur mostly at northern latitudes in the coterminous United States, in parts of Alaska and in Canada. They have a low pH, are usually dominated by sphagnum mosses and certain coniferous trees, and support a number of rare plant species. Insectivorous plants, such as pitcher plants and sundews, are common. Dead and decaying plants often collect and create a quaking mat that extends over the water. Bogs are low in nutrients, but they do produce valuable products, such as cranberries and blueberries.

Peat moss from bogs is also useful in gardens and as an alternative fuel source.

Pocosins are southern bogs found on the coastal plains of the southeastern United States. This inland wetland type is particularly common in North Carolina.

Fens are peatlands with wet, spongy ground. They are commonly dominated by sedges. They are formed in poorly drained areas and have a higher pH than bogs, being somewhat acidic to alkaline, and are also more nutrient rich. These wetlands frequently surround open bodies of water and are usually located in regions of the northeast, the northern plains and Canada. They commonly have rather diverse and interesting flora, including many rare species.

Vernal pools are wetlands found in inland areas, particularly in California. They are wet during the winter and early spring, have an herbaceous aspect and support a number of rare plant species.

Playa lakes are common in the southwest region of the United States, particularly in the southern High Plains (parts of Colorado, Kansas, New Mexico, Oklahoma and Texas). These wetlands are characteristically shallow, bowl-shaped depressions in gentle rolling plains. Some resemble prairie potholes. Occasionally, this inland wetland becomes a shallow lake.

Wet tundra is a wetland existing in much of Alaska. This wetland is a treeless plain, found in arctic or subarctic regions. Tundra consists of a black mucky soil with a frozen subsoil, yet it is able to support a dense growth of flowering dwarf herbs.

Many tropical forests are wetlands. The climate in these forests is continuously warm and humid and the annual rainfall may be over 100 inches. Because of the climate, lofty, broad evergreen trees grow abundantly and create a continuous canopy over the wetland area. The Hawaiian Islands, for example, contain some tropical wetlands.

Restored wetlands, often supported by federal, state or private programs, offer many benefits. They provide fish and wildlife habitat or forage, contribute to aquatic productivity and the food chain, improve water quality, produce rooted plants that bind the soil and help prevent erosion, can be incorporated into greenways and recreational areas for observing birds and wildlife, hiking, hunting and fishing.

Question: I am looking for a book entitled The Geomorphology & Quaternary Geological History of the Lower Mississippi Valley, by Roger Sauchier. Is this book available for purchase? He said that I would find it to be a wealthy source of info. About the region, which would help me immensely as I try to lay the foundations for a teacher's summer workshop in the Yazoo Basin area. Please let me know where I can find a copy.

Answer: You can order "Geomorphology and Quaternary Geological History of the Lower Mississippi Valley from our Vicksburg District Map Sales office. They are 25 dollars plus 5 dollars for shipping.

U.S. Army Corps of Engineers, Vicksburg District
ATTN: Map Sales Office
4155 Clay Street
Vicksburg, MS 39180-3435
(601) 631-5042

Question: I am planning a trip down the Mississippi River. Can you provide some information?

Answer: If you are planning a trip you will want to contact the 8th U.S. Coast Guard, New

Orleans, LA. 504-589-6298. They are responsible for inland waterways and can provide additional information.

A good website for all navigation needs is: http://www.mvr.usace.army.mil/navdata/nic.htm

You may purchase a copy of the *1998 Flood Control and Navigation Maps of the (lower) Mississippi River* for $20 (plus $3 shipping) from any of the following district locations:

U.S. Army Corps of Engineers, Memphis District
ATTN: Map Sales Office
167 N. Main Street
Memphis, TN 39103-1894
(901) 544-3351

U.S. Army Corps of Engineers, Vicksburg District
ATTN: Map Sales Office
4155 Clay Street
Vicksburg, MS 39180-3435
(601) 631-5042

U.S. Army Corps of Engineers, New Orleans District
ATTN: Engineering Central Files Unit
Post Office Box 60267
New Orleans, LA 70160-0267
(504) 862-1775

U.S. Army Corps of Engineers, Rock Island District
Mississippi River Visitor's Center
Lock and Dam 15, Rock Island Arsenal
Rock Island, IL 61204
(309) 794-5338

This navigation book includes maps of the **lower** Mississippi River from mile 300 (above Ohio River) to the Head of Passes, Southwest Pass and the Mississippi River Gulf Outlet. This mapping represents about 1,400 miles of the inland waterway system.

The map sheet files, in pdf format, are also available on the Internet home page of the Mississippi Valley Division at: http://www.mvd.usace.army.mil/reegis/navbook/main2.htm

The navigation book for the **upper** Mississippi River is in the process of being updated and is scheduled to be completed this year. The same format will be used as with the lower river book. Charts from mile 0 to mile 300, above Ohio River, will be published in both the upper and lower river books. You may purchase a copy of the *Flood Control and Navigation Maps of the (upper) Mississippi River* from the Rock Island District location listed above.

Question: Can you tell me about Mississippi Rive geography?

Answer: The Mississippi River Basin covers 1,245,000 square miles and drains all or parts of 31 states and two Canadian provinces:

1. Alabama
2. Arkansas
3. Colorado
4. Georgia
5. Illinois

6. Indiana
7. Iowa
8. Kansas
9. Kentucky
10. Louisiana
11. Maryland
12. Michigan
13. Minnesota
14. Mississippi
15. Missouri
16. Montana
17. Nebraska
18. New Mexico
19. New York
20. North Carolina
21. North Dakota
22. Ohio
23. Oklahoma
24. Pennsylvania
25. South Dakota
26. Tennessee
27. Texas
28. Virginia
29. West Virginia
30. Wisconsin
31. Wyoming

The Canadian provinces are:

1. Alberta
2. Manitoba

Question: What are the boundaries of the MVD?

Answer: The boundary of the Mississippi Valley Division incorporates portions of 12 states: Arkansas, Iowa, Louisiana, Mississippi, North Dakota, Tennessee, Illinois, Kentucky, Minnesota, Missouri, South Dakota, and Wisconsin.

Question: Can you provide information on the 1993 Flood?

Answer:
Excessive precipitation during April through July 1993 produced severe and record flooding in a nine-state area in the Upper Mississippi River Basin. Excessive precipitation also affected the Missouri River Basin, adding to the flood's areal extent in three states. The rainstorms that caused the flood of 1993 were unique in the size of the flooded area and in the fact that the storms resulted in cresting of the Mississippi and Missouri rivers within the same week.

Damages Reported

47 lives lost
72,000 private homes damaged
74,000 people evacuated
$6.5 billion in crop damages
20 million acres of farmland damaged
35,000-45,000 commercial structures damaged
39 of 229 Federal levees damaged
164 of 268 non-Federal levees damaged
879 of 1079 private levees damaged
200 pump stations flooded or disabled

Transportation loses

52 days navigation
1000 miles of roads closed
25 non-railroad bridges closed

Damages prevented along Missouri & Mississippi River

$19.1 billion