

DAMS AND LEVEES

Human-Related Issues

Summary:

Mountain snowmelt is one of the primary sources that feeds the Missouri River, which historically caused significant flooding. After the Missouri River flooded particularly badly in 1943, the government passed the Pick-Sloan Act, which called for the construction of protective levees and dams, irrigation systems, and power development.

As a result of the Pick-Sloan Act, the Missouri River has six mainstem dams, and they have played a major role in much of the river's history. One of those dams is Gavins Point Dam. It is located in Nebraska and South Dakota and is the furthest downstream dam on the Missouri River. Construction on the dam began in 1952 and ended in 1957. It creates Lewis and Clark Lake, which spans 31,400 acres.

The Pick-Sloan Act also called for 1,500 miles of levees to be built from Sioux City, Iowa to St. Louis, Missouri where the Missouri River meets the Mississippi River. Levees are man-made structures used to contain, control, or divert the flow of water, and are usually made out of earth. Levees are built as a preventative measure to protect houses, buildings, businesses, farmland, and other human interests that exist in the floodplain from natural flooding.

Even though they are helpful when regulating flooding, dams and levees also have environmental consequences for the Missouri River. For dams, some of the greatest problems include the damage done when the reservoir behind the dam is filled. Reservoirs are created behind dams by flooding the land, and with the size of some these projects, this can mean a significant amount of land ends up submerged. This wipes out all habitats that used to exist in the area and also forces everyone who lived in the location to move.

Another concern caused by dams is habitat separation. Gavins Point Dam cuts off the Upper Missouri River



This is a downstream view of Gavins Point Dam and Lewis and Clark Lake, taken in 2008.

CONT. DAMS AND LEVEES



Basin from the Middle Missouri River Basin, and the other dams, all of which are upstream from Gavins Point Dam, further divide the Upper Missouri River Basin from itself. A dam is a huge physical barrier to movement in the Missouri River, and fish have no way to go around it. Many fish life cycles involve moving up and down the Missouri River to spawn, but dams prevent them from being able to do this. This segmentation is particularly important for Pallid Sturgeon, which migrate hundreds of miles for spawning.

Creating reservoirs brings its own consequences. As a river flows into the reservoir created by the dam, it slows down. When the water slows down, the sediment it carries settles out. The animals living in the Missouri River have lived in a very muddy, turbid environment for many years. With the reduction in sediment caused by these dams and the subsequent reservoirs, animals that find their food by sight and are not native to the Missouri River have started to compete with native Missouri River species. As with dams, levees bring environmental consequences by disturbing habitats and disconnecting animals from floodplains.

Sources:

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For More Information: This is issue number 10 in volume I of issues all related to the Missouri River. To access the rest of the collection, visit the Missouri River Relief Education page at riverrelief.org. This issue was published in June 2018.