

# SAND DREDGING

## Human-Related Issues

### Summary:

Sand dredging is a common sight on the Missouri River. This process is used to collect sand and gravel for construction work. This is done using specialized boats that suck up matter from the bed of the Missouri River to the boat, where it is sorted using sieves and then can be sent away to wherever it is needed.

The permits to perform this work are awarded to companies after review and approval by a combination of government agencies: the Environmental Protection Agency, the U.S. Army Corps of Engineers, and the Missouri Department of Natural Resources.



*A sand dredging barge operating next to a facility.*

Sand dredging is, in general, not conducted in the main channel of the Missouri River because the dikes help keep the main channel the desired depth and width through the process of erosion. Dredging is conducted near the channel where water velocity drops and sediment piles up. Sand is constantly moving along just above the bed of the Missouri River, providing a nearly continuous supply of sand to locations along the channel. The alternative to sand dredging is open pit mining of sand from on land.

Regulated as it is, dredging still has environmental consequences. Dredging disrupts the natural processes that determine sediment flow and can disrupt habitat. Over extraction can also lower the riverbed and change the channel profile. It is extremely difficult to determine the direct effects on larval fish, benthic invertebrates, and other animals that cannot move from areas being dredged.

Although sand dredging is useful, a study conducted by the U.S. Army Corps of Engineers in 2017 indicated that sand dredging contributes to bed degradation. Bed degradation is the erosion of a river channel. It is a major concern along the Missouri River between St. Joseph, Missouri and Waverly, Missouri, which is a 128-mile

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stretch. Bed degradation can negatively impact navigation structures, levees and floodwalls, bridges, and water supply-intakes. The same study found that an estimated \$269 million in cumulative expenses will be incurred in the next 50 years to adjust for degradation if the problem is not addressed.

Another environmental consequence is that as a whole, we still do not fully understand what the wider impacts of dredging are. With the Missouri River's vast size, tracking the effects of dredging from selected lengths of river is almost impossible to do, and serves as a source of environmental concern.

## Sources:

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**For More Information:** This is issue number 11 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](http://riverrelief.org). This issue was published in June 2018.