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Missouri River Recovery Program: Water Supply and Water Quality

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The Army Corps of Engineers (Corps) operates a system of six dams and reservoirs on the Missouri River to serve the multiple purposes authorized by Congress in the Flood Control Act of 1944. In addition to operating the system for flood control, navigation, hydropower, recreation, and fish and wildlife, the Corps is also authorized to use the system for irrigation, water supply and water quality. This fact sheet will discuss the Corps efforts regarding these three authorized project purposes.

**Water for Many Needs**

*Irrigation.* The river and reservoirs provide water for the irrigation of agricultural lands, and it is the single largest consumptive use of water within the Missouri River Basin. Approximately 900 irrigation intakes access water from reservoirs or the river.

*Water Quality.* Twenty-five coal-fired and nuclear power plants currently draw cooling water from the river. The river’s flow and water temperature affect the power plant’s ability to withdraw and discharge heated water back into the river while staying within state water quality standards. Low flows in the river may force cutbacks of thermal power production.

*Municipal, commercial, industrial and domestic water supply.* Approximately three million people are served by the municipal water supply from the Missouri River. The Missouri River, which runs through numerous states, is the major water supply source for the cities of Bismarck, Omaha, Kansas City, and St. Louis as well as Native American communities and other small rural communities. Water is withdrawn from the river or reservoirs, transported to treatment facilities and then sent to water systems for distribution.
**Water Quality**

While water quality in the river is generally good, development in the river basin and characteristics of the river’s environment can negatively affect water quality. Human-caused water quality impacts include the following: changes in land use practices, increased development of urban areas, construction and operation of dams, and pollution directly released into the river or as runoff from farms and urban lands. In addition, the river naturally carries large amounts of sediment, and the geology of the basin naturally adds certain metals into the water.

The United States Environmental Protection Agency (USEPA) is the primary federal agency responsible for administering the Clean Water Act. USEPA has delegated the implementation of the Act to state water quality agencies in the basin. The USEPA, Corps and state water quality agencies in the basin work together to develop comprehensive, consistent and integrated water quality monitoring programs and standards for the Missouri River.

To address water quality on the main stem of the Missouri River, including the reservoirs and river reaches, the Corps began monitoring efforts in 1967. Additionally, the U.S. Geological Survey monitors water quality on tributaries flowing into the river. Beginning in 2008, the Corps initiated an effort to develop a more coordinated monitoring program along the river. Monitoring is conducted to detect water quality problems, determine compliance with federal, state and local water quality standards and assess how water quality impacts ecosystem recovery efforts. A more comprehensive annual report from 2008 is on the MRRP Web site and can be viewed at [www.moriverrecovery.org](http://www.moriverrecovery.org) under the “Key Documents” tab.

**Balancing the River’s Resources**

Since the river system serves many purposes, sometimes conflicts arise over the uses of the river’s resources. During periods of prolonged drought, all authorized purposes of the system are negatively impacted, except for flood management.

Emergency action plans are currently in place to address water supply issues impacting communities along the reservoirs during droughts. The Corps also conducts system releases to provide access to the water supply for downstream users as much as possible. The Corps works closely with the various users to balance the varied and sometimes conflicting uses of the Missouri River.