

# WATER QUALITY

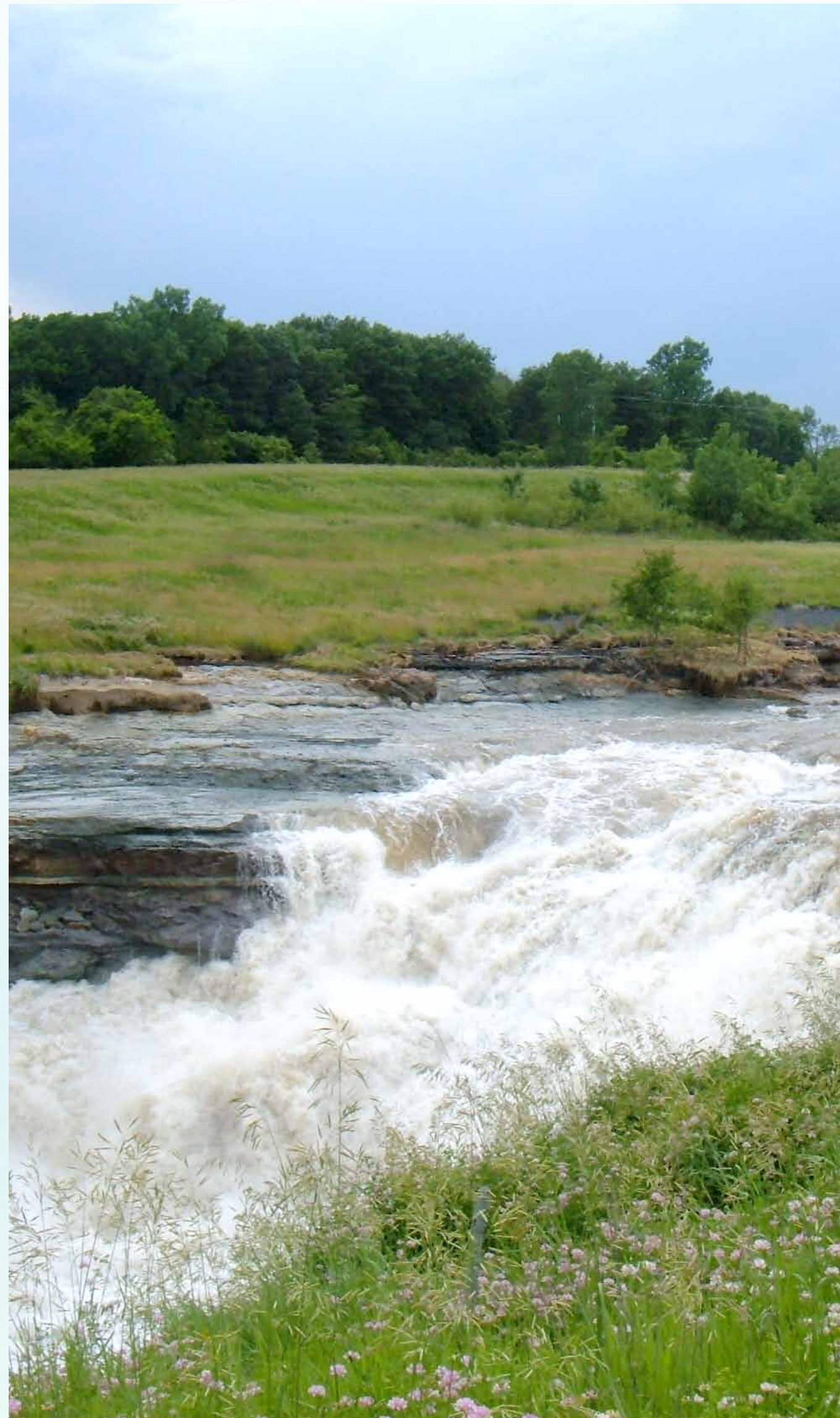


US Army Corps  
of Engineers®  
Rock Island District

## WATERSHED



The Des Moines River watershed originates in southwest Minnesota and traverses Iowa north to south, terminating in Lee County at the confluence of the Mississippi River. The watershed measured above the dam is 5,823 square miles. It primarily drains intensively farmed land which impact water quality. Small to moderate sized communities are situated on or near the river and produce water quality impact also. These communities rely on the river to provide both drinking water and industrial process. Pollution associated with agriculture is referred to as non-point source pollution while communities tend to generate point source pollution. Both contribute to water quality impairments measured in the reservoir. Dramatic changes have occurred on the watershed after European settlement. This post glaciation watershed was young and poorly drained. Thousands of prairie potholes and wetlands dotted the prairie landscape and acted with the prairie to slowly release snow melts and summer thunderstorms into the river. Today's Des Moines River represents a waterway choked by silts, impaired by chemicals and subject to erratic flows.



## WATER CONDITION

The Des Moines River Water Quality Network was initiated in July, 1967 as a pre-impoundment study. Over 46 years of study with over 500,000 individual data points have been collected. This extensive water quality testing program examines dissolved oxygen, pH, alkalinity, hardness, ammonia, nitrite plus nitrate, BOD, suspended solids, chlorophyll pigments, coli-form bacteria and trace metals. Beach closures and swimming advisories are issued in response to unsatisfactory findings. Saylorville is categorized under EPA guidelines as a Class A1 primary contact water body, meaning that humans routinely swim, boat or use public beaches. Results of testing measure water conditions as fully supporting such use. A second classification identified as B (WW-1), measures water quality impacts to aquatic life. Fish are primarily studied for pesticide content. Results confirm consuming fish from the reservoir as fully supporting such use. All tests results show pesticide levels well below EPA standards. Bacteria monitoring occurs at several lake locations including swimming beaches. Some Iowa water bodies have had issues with high levels of coli-form bacteria. Our beaches have had rare instances of exceeding E-coli counts requiring short term posting of warning without closure. EPA recognizes the results of Corps beach monitoring to be "fully supportive" of beach use under the Class A1 lake designation.

Use of the reservoir by people for recreational pursuits continues to be safe. Other sampling in regards to ammonia content, dissolved oxygen and pH all proved to be safe. Scientific measurements of Secchi depth (water clarity), chlorophyll, suspended algae and phosphorus levels rank the lake as eutrophic for water clarity and chlorophyll content and hypereutrophic for phosphorus. Cyanobacteria (blue green algae) can cause health issues for lake users however Saylorville ranked 47th out of 134 lakes sampled suggesting relatively small populations of Cyanobacteria. Blue-green algae blooms tend to occur in late summer under higher than normal pool elevations but are not severe in nature. In synopsis, the reservoir remains safe for human usage while being impaired by high levels of phosphorus, silt and non-organic suspended solids while having low levels of chlorophyll and algae. Fish are safe to consume and our waters continue to be safe for swimming and other water usage.

