

# Des Moines River Watershed



## Why is it important?

Located in southwestern Minnesota, the Des Moines River Watersheds consists of three watersheds: Des Moines River-Headwaters, Lower Des Moines River, and East Fork Des Moines River.

The Minnesota Pollution Control Agency (MPCA) uses biological monitoring and assessment as one way to determine the condition of the state's rivers and streams. Examining fish and aquatic macroinvertebrates (bugs) helps to identify the major factors causing harm to aquatic life. Stressor Identification is a key component of the major watershed restoration and protection projects being carried out under Minnesota's Clean Water Legacy Act.

## Key issues

The five major elements of a healthy stream system are stream connections, hydrology, stream channel assessment, water chemistry and stream biology. If one or more of the elements are unbalanced, the stream ecosystem may fail to function properly and is listed as an impaired water body.

The majority of the biological impairments (45) are located in the Des Moines River-Headwaters Watershed, while the Lower Des Moines River Watershed has six impairments, and the East Fork Des Moines River Watershed has five. The following stressors were identified as probable causes of stress to aquatic life: Low dissolved oxygen, eutrophication (algae), nitrate, sediment-total suspended solids, poor habitat, altered flow, and connectivity. These stressors are largely tied to land use activities.

## Highlights of report

Only nine stream sections were considered to be fully supporting of aquatic life and two fully supporting of aquatic recreation. Eighty-two are non-supporting for aquatic life and/or recreation. Of those, 56 are non-supporting for aquatic life.

Of the 17 lakes surveyed in the watershed, 13 were assessed as not supporting healthy fish populations. The stressors include: excess nutrients and sedimentation, shoreline development and physical habitat alteration, toxic chemicals, non-native species (primarily carp), angling pressure and fish stocking, connectivity, and global climate change or local weather conditions.

## Summary and recommendations

The most common stressor in the watershed was habitat, followed closely by eutrophication, with dissolved oxygen, nitrates and flow alteration/connectivity. Sediment and suspended solids was also a frequent stressor in this watershed.

Overall, the stressors will need to be addressed in various ways.

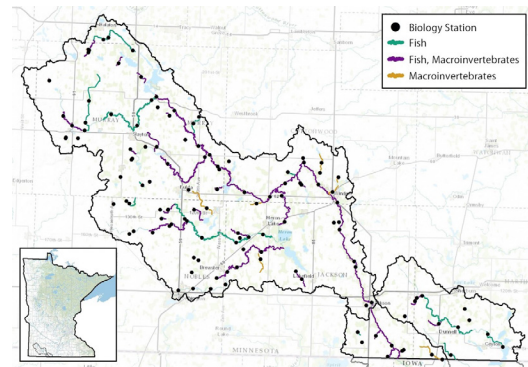
- **Habitat:** Re-establish quality riparian corridor to increase woody debris, stream stability, and stream shading. Protect streambanks, reduce erosion and sedimentation.
- **Dissolved oxygen, eutrophication, nitrate:** Nutrient-reducing Best Management Practices (BMP) including but not limited to: cover crops, nutrient management, saturated buffers, etc.

- Flow alteration/connectivity: Increase storage and infiltration of water in locations with flow alteration stressors and solicit the Minnesota Department of Natural Resources recommendations for streams with existing connectivity stressors and/or determine if restoration is appropriate.
- Suspended sediment: Focus on reducing sediment input from riparian corridor (cattle pastures) and immediate stream channel (stream banks).

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## About this study

Stressor identification is a formal and rigorous process that identifies stressors causing biological impairment of aquatic ecosystems and provides a structure for organizing the scientific evidence supporting the conclusions. Water quality and biological monitoring in the Des Moines River watersheds has been ongoing since 2004, with intensive watershed monitoring since 2014. A total of 190 stream sections were assessed for aquatic life use, aquatic recreational use or both.



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## Full report

To view the full report, go to <https://www.pca.state.mn.us/sites/default/files/wq-ws5-07100001a.pdf> or search for the Des Moines River Watershed webpage on the MPCA website: [www.pca.state.mn.us](http://www.pca.state.mn.us).

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