What’s happening

**CLEAN WATER FUND GRANT**

In 2018, the watershed district received a Clean Water Fund Grant from the MN Board of Water and Soil Resources. The grant will help the district and the City of Eden Prairie implement a project to study the phosphorus released into stormwater ponds. Through a process called internal loading, phosphorus trapped in the bottom of stormwater ponds can be released up into the water column. It travels downstream into Mitchell Lake and causes ecological problems such as algal blooms.

This project will allow the district to quantify the amount of phosphorus entering Mitchell Lake from stormwater ponds, and to adapt management strategies to best protect clean water in the Lake Mitchell watershed and beyond.

The planning, implementation, and completion of this study will take place throughout 2018 and 2019.

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**ZEBRA MUSSELS FOUND IN LAKE RILEY**

Zebra mussels, an aquatic invasive species (AIS) were discovered in Lake Riley in October 2018. This is the first lake within the Riley Purgatory Bluff Creek Watershed District where they have been spotted. Zebra mussels live in dense clusters and can spread quickly. They attach to docks, boats, rocks, logs, and other surfaces in the lake, and can threaten recreation and the underwater ecosystem.

The District will continue to monitor the zebra mussel population in Lake Riley, and with our partners to try to prevent this species from spreading to other lakes.

You can help! Remember to always clean, drain, and dry any watercraft and equipment when leaving a lake.

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Interested in learning more? Explore the following reports on our website.

- **Aquatic plants**

- **Paleolimnology**
  Ramstack J. M. and Edlund M. B. 2011. Historical water quality and ecological change of three lakes in the Riley Purgatory Bluff Creek Watershed District, MN.

- **Watershed study**

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**CLEAN WATER FUND GRANT**

**2018**

**Size** 124 acres

**Volume** 729 acre-ft

**Average depth** 5.3 ft

**Max depth** 19 ft

**Watershed size** 937 acres

**Land draining directly into** 154 acres

**MPCA lake classification** Shallow

**Impairment listing** Mercury

**Trophic status** Hypereutrophic

**Common fish** Bluegill, Black Bullhead, Black Crappie, Northern Pike, Pumpkinseed

**Invasive species** Curlyleaf Pondweed, Eurasian Watermilfoil, Purple Loosestrife

Located in Eden Prairie, Mitchell Lake is a part of the Purgatory Creek chain of lakes. During high water events it outflows through an overflow pipe to Red Rock Lake.

**WATERSHED BOUNDARIES**

Water that falls anywhere within the white border drains to Mitchell Lake.

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How healthy is Mitchell Lake?

After decades of failing to meet the clean water standards set by the Minnesota Pollution Control Agency (MPCA), Mitchell Lake has improved and been at or near standards for the last seven years. Continued water sampling will help monitor whether the trend persists.

The graphs on the next page show the trends over time. The red line on each graph marks the MPCA standard. The goal is for the average values (the dots) to be below the red line.

During the growing season (Jun - Sept), the city of Eden Prairie visits Mitchell Lake to collect water samples and take measurements. The samples are tested for several compounds including total phosphorous (TP) and chlorophyll a (Chl-a). The city also measures how clear the water is using a disk that is lowered into the water until it can not be seen. These tests help indicate if the water is clean.

Mitchell is classified as a “Shallow Lake”, which means that it is generally less than 15 feet deep and light can reach the bottom in most of the lake. This ample light means that shallow lakes often have a lot of aquatic plants, and are habitat to many types of fish and birds. To be considered healthy by the MPCA, shallow lakes need to be clear enough to see 1 meter down, and have low TP and Chl-a levels.

Rainwater runoff, the water that flows across yards, parking lots, and streets into stormdrains, is one of the main causes of pollution in urban areas. You can take simple actions to help protect Mitchell Lake.

**Summary table**

<table>
<thead>
<tr>
<th></th>
<th>MPCA standard</th>
<th>1972 - 2017</th>
<th>2018</th>
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<tr>
<td></td>
<td>max</td>
<td>min</td>
<td>avg</td>
</tr>
<tr>
<td>TP</td>
<td>&lt;0.06 mg/l</td>
<td>0.33</td>
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<tr>
<td>Chl-a</td>
<td>&lt;20 ug/l</td>
<td>211</td>
<td>1</td>
</tr>
<tr>
<td>Secchi</td>
<td>&gt;1 m</td>
<td>4.1</td>
<td>0.3</td>
</tr>
</tbody>
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**Keep the curb clean**

- Sweep up leaves, grass clippings, and fertilizer from driveways and streets.

**Water with care**

- Grass requires 1 inch of water per week. About one hour of sprinkling per week if it has not rained.

**Salt smart**

- The salt we use to melt ice can pollute our lakes and creeks. Use salt sparingly and always shovel first.

**Reuse the rain**

- Collect and reuse rainwater with a rain barrel.

**Build a raingarden**

- Raingardens soak up water and filter out pollution. Visit our website for help.

**Phosphorus**

- Phosphorus is a nutrient that plants and algae need for growth. It is often measured as total phosphorus (TP). Too much phosphorous can cause algae blooms.

**Chlorophyll a**

- Chlorophyll a is the main pigment in algae, so measuring chl-a can tell us how much algae there is. Too much chl-a means that there are too many nutrients in the water.

**Water clarity**

- Water clarity is measured using a Secchi Disk, a black and white disk the size of a dinner plate. It is lowered into the water, and the depth at which it is no longer visible is recorded.