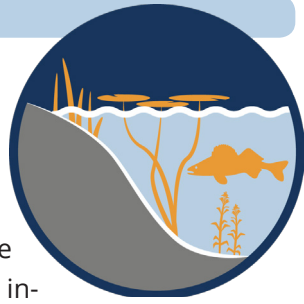# What's happening

## Monitoring carp

In 2014, University of Minnesota researchers completed a management plan for invasive carp in the Riley Creek chain of lakes. The plan includes monitoring to estimate the number of carp over time. You may have seen district staff out on Rice Marsh Lake this summer in a noisy boat, holding long nets. The boat is an electro-fishing boat that shocks the water to stun fish. The nets are used to scoop up carp so they can be measured. These measurements are put into an equation to calculate the number of carp in the lake. With these data, the district can then decide whether carp need to be caught and removed from the lake.

## Dive deeper

Interested in learning more? Find the reports below on our website. Fish, plant, and sediment studies are just some of the research the district and its partners conduct. Can't find what you are looking for? Feel welcome to call or write.

**Aquatic plants**
Blue Water Science. 2014. Aquatic plant survey for Rice Marsh Lake, Eden Prairie, MN.

**Stormwater ponds**
RPBCWD. 2013. Stormwater pond project.

**Watershed study**
BARR Engineering. 2016. Rice Marsh Lake and Lake Riley: Use Attainability Analysis Update.

**Carp management**
Bajer P. G., Headrick M., Miller B. D. and Sorensen P. W. 2014. Development and implementation of a sustainable strategy to control common carp in the Riley Creek Chain of Lakes. University of Minnesota.

**Paleolimnology**
Ramstack Hobbs J. M. and M. B. Edlund. 2014. Historical water quality and ecological change in Rice Marsh Lake. St. Croix Watershed Research Station.

## Contact us
and find out how you can get involved

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**FIND US ON**
pinterest
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## Downtown Chanhassen retrofit assessment

The amount of impervious surface (roads, buildings, and other structures that keep water from soaking into the ground) in an area has a big impact on water quality. Limiting the amount of impervious surface can help protect our lakes and creeks. But what about areas that are already developed? Retrofiting is the process of finding ways to fit water quality best management practices (BMPs) into areas that are already highly developed. Examples include raingardens, pervious pavement, and rainwater reuse systems. In 2015, the district was awarded a Clean Water Grant from the Board of Water and Soil Resources to assess the potential for BMP retrofiting in downtown Chanhassen. The goal is to identify the best locations for BMPs to reduce the amount of phosphorous and other pollution reaching Rice Marsh Lake. This project is performed in partnership with the City of Chanhassen and will be completed in 2016.

**CLEAN WATER LAND & LEGACY AMENDMENT**

# Rice Marsh Lake
## Riley Purgatory Bluff Creek Watershed District  2015

Rice Marsh Lake straddles the border between eastern Chanhassen and western Eden Prairie, located north of Highway 212 and west of Dell Road. A part of the Riley Creek chain, Rice Marsh Lake is immediately downstream of Lake Susan (connected by a small channel) and upstream of Lake Riley. The lake has an informal boat launch that is accessible from a walking path that circles the lake.

## Quick facts

| | |
|---|---|
| **Size** | 81 acres |
| **Volume** | 350 acre-ft |
| **Average depth** | 5 ft |
| **Maximum depth** | 10 ft |
| **Watershed size** | 853 acres |
| **Direct land draining** | 280 acres |
| **MPCA lake classification** | Shallow |

**Common fish**

Bluegill, Northern Pike, White Sucker

**Invasive Species**

Curlyleaf Pondweed, Purple Loosestrife

| Trophic status | Impairment |
|---|---|
| Eutrophic (rich in nutrients) | Not listed |

**Lake Susan** · **Rice Marsh Lake**

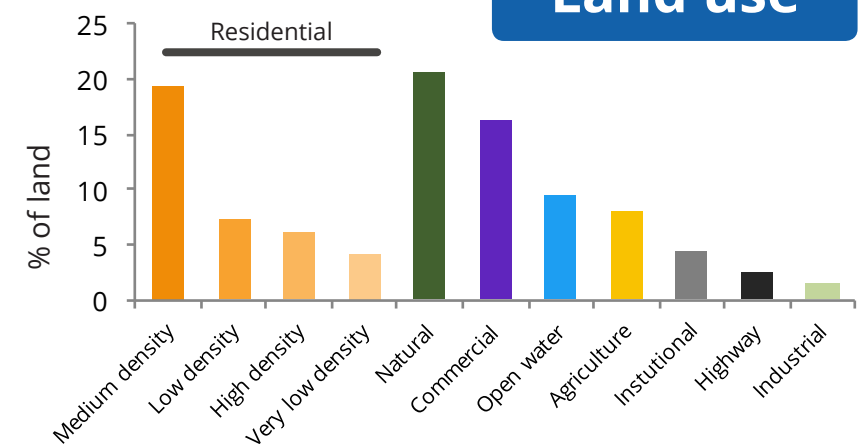Arboretum Blvd · Dell Rd · Hwy 212

N
watershed boundary

## Did you know?

Rice Marsh Lake is an important spawning area for fish moving upstream from Lake Riley

An aeration system helps keep bluegills alive as a way to manage invasive carp: the bluegills eat the carp eggs

Rice Marsh Lake is prone to wind-driven mixing due to its large surface area and shallow depth

## Land use

Residential

% of land (25, 20, 15, 10, 5, 0)

Medium density, Low density, High density, Very low density, Natural, Commercial, Open water, Agriculture, Instutional, Highway, Industrial

# How healthy is Rice Marsh Lake?

Water quality has improved dramatically since monitoring began in 1972. For the last ten years two of the parameters tested have approached the clean water standards set by the Minnesota Pollution Control Agency (MPCA), and water clarity as been even better than the standard.

During the growing season (May - September), district staff visit Rice Marsh Lake every other week to collect water samples and take measurements. The water samples are sent to a lab where they are tested for several compounds including total phosphorous (TP) and chlorophyll a (Chl-a). Staff also measure how clear the water is using a disk that is lowered into the water until it can no longer be seen. All three of these parameters help indicate whether the water is clean. Find out more about each on the next page.

Rice Marsh 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. 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. These shallow lake standards are listed in the summary table.

[Above] Staff collect the thin ice signs from the winter. The aeration system that keeps the native fish population alive through winter also weakens the ice.
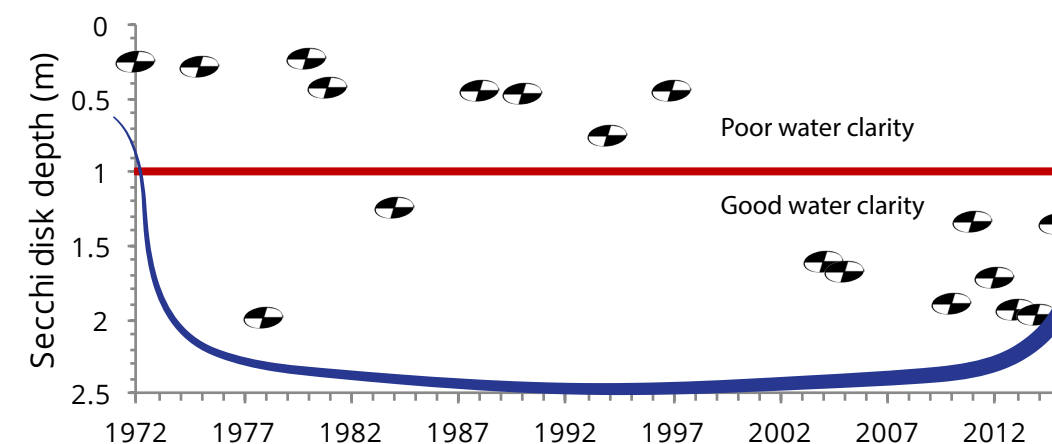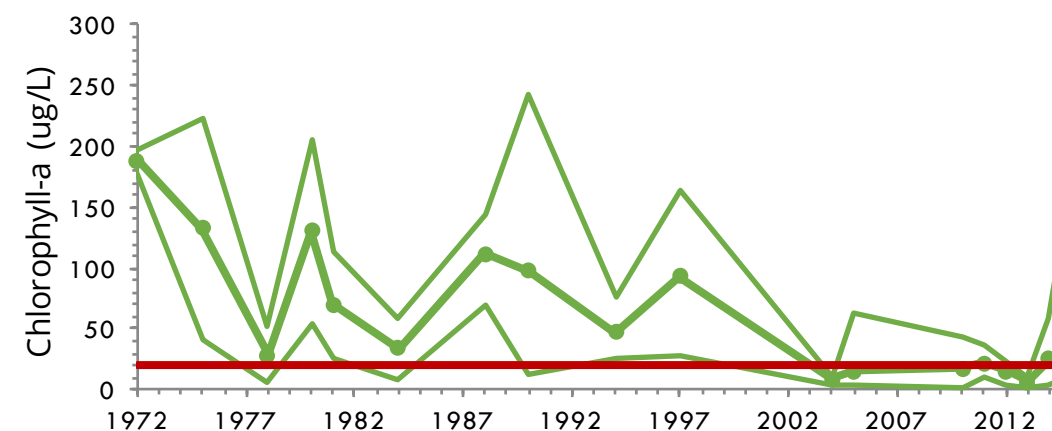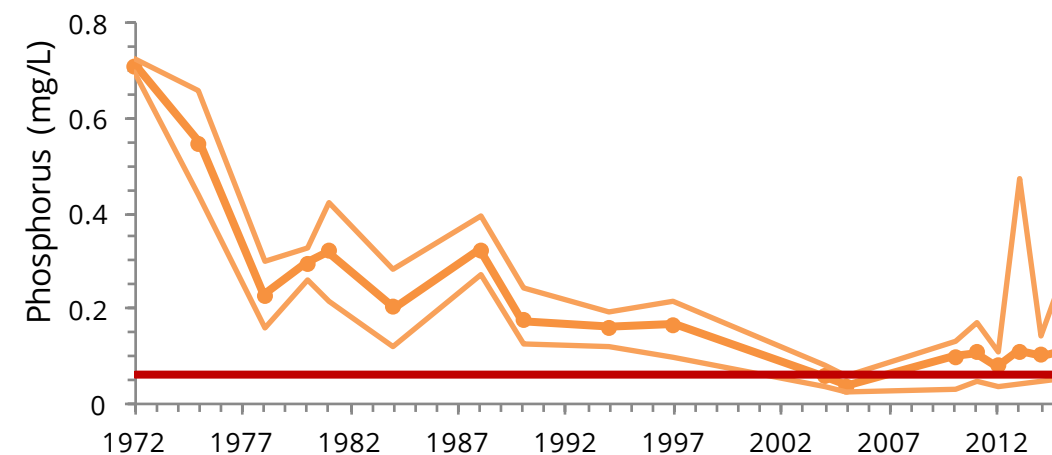
[Right] Turtles are easy to spot at Rice Marsh.

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

## Water quality graphs 1972 - 2015

Points are growing season (May-Sep) averages. Thin lines are the minimum and maximum values for each year.



**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** 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.

Poor water clarity

Good 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.

## Summary table

| | MPCA standard | Since 1972 | | | 2015 | | |
|---|---|---|---|---|---|---|---|
| | | max | min | average | max | min | average |
| **TP** | <0.06 mg/l | 0.722 | 0.026 | 0.156 | 0.265 | 0.052 | 0.11 |
| **Chl-a** | <20 ug/l | 242.4 | 2.7 | 43.5 | 174 | 12 | 39.9 |
| **Secchi** | >1 m | 3.2 | 0.1 | 1.4 | 2.5 | 0.6 | 1.36 |

## Help keep Rice Marsh healthy

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 Rice Marsh Lake.

**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.