



An activity book for kids of all ages!

LEARN ABOUT  
LAKES, STREAMS, AND  
THE CREATURES THAT  
LIVE THERE.



# JUNIOR WATERSHED EXPLORER

RILEY  
PURGATORY  
BLUFF CREEK  
WATERSHED DISTRICT

*Come explore with us...*

# WELCOME

We are excited you've decided to become a JUNIOR WATERSHED EXPLORER. This book is full of fun ways to explore and learn about water. Are you ready to go?

*Here is what you have to do:*

- 1) Complete the book
- 2) Check your work
- 3) Mail or bring the last page to the address below for a badge

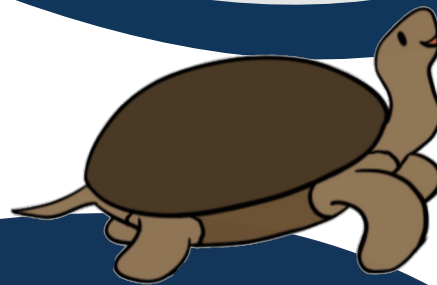
*RPBCWD  
18681 Lake Drive East  
Chanhassen, MN 55317*

- 4) Keep Exploring!



**YOUR NAME:**

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<u>AGE</u>	<u>NUMBER OF PAGES</u>
Up to 6 years old	3 or more
7-9 years old	6 or more
10 or older	9 or more

***LET'S EXPLORE OUR WATERSHED!***





## What is a watershed?

Water follows a path down hills and through stormwater pipes to a lake or creek. All of the land that drains to a particular water body is its *watershed*. In this photo, every rain drop that falls inside of the white line drains to Lake Riley.

**Think** about the land near your house. Where does the water from your yard or driveway flow? Is there a creek, pond, or lake nearby? Ask an adult for help if you are not sure. Write your answer here.



## What is a watershed district?

A watershed district is a type of government based on watershed boundaries. Watershed Districts help make sure that our lakes and creeks are clean and healthy places for people and animals to enjoy.

# DRAW

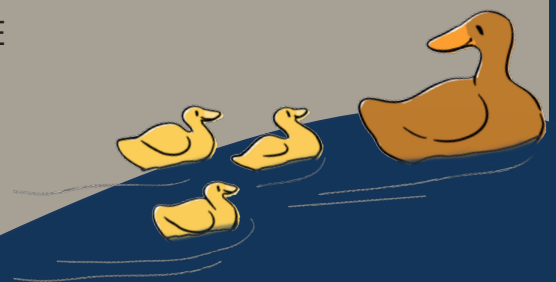
What is your favorite way to explore lakes and streams?



## WHERE HAVE YOU BEEN?

Check off all of the lakes and streams that you have visited. These places are in the area that the watershed district helps protect.

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> LAKE ANN      | <input type="checkbox"/> RED ROCK LAKE   | <input type="checkbox"/> RILEY CREEK     |
| <input type="checkbox"/> DUCK LAKE     | <input type="checkbox"/> RICE MARSH LAKE | <input type="checkbox"/> PURGATORY CREEK |
| <input type="checkbox"/> HYLAND LAKE   | <input type="checkbox"/> LAKE RILEY      | <input type="checkbox"/> BLUFF CREEK     |
| <input type="checkbox"/> LOTUS LAKE    | <input type="checkbox"/> ROUND LAKE      |  |
| <input type="checkbox"/> LAKE LUCY     | <input type="checkbox"/> SILVER LAKE     |  |
| <input type="checkbox"/> MITCHELL LAKE | <input type="checkbox"/> STARING LAKE    |  |
|  | <input type="checkbox"/> LAKE SUSAN      |  |





# Wonderful Watery Words

Circle each of the words in the word search below. Do you know what they mean? *Use a dictionary or the internet to look search for any words you don't already know.* Or, ask a friend or family member for help!

N C R R H T L U A S T M G V B  
F E A D S G K K S T R D R L I  
R T I M O U T H N O I M P W K  
E E N Y F B Z E A R B Y Y A O  
S U W L P M H H W M U B X T J  
H O D R O J U D E D T W G E A  
W A R I N L C Z T R A J A R O  
A I O V D G K N L A R N T S Y  
T E P E E F L D A I Y R L H P  
E M U R C L A Z N N P C R E U  
R M U M K O K N D K E Y U D H  
H Q Q C J O E T S Y O Q N Z W  
P G H E A D W A T E R S O N D  
L C R E E K X B L C V C F K A  
N A Q U I F E R P L T Q F M X

Freshwater

Headwaters

Storm Drain

Tributary

Watershed

Wetland

Aquifer

Mouth

Creek

River

Runoff

Rain

Lake

Flood

Drop

Pond

A new word I learned today is: \_\_\_\_\_

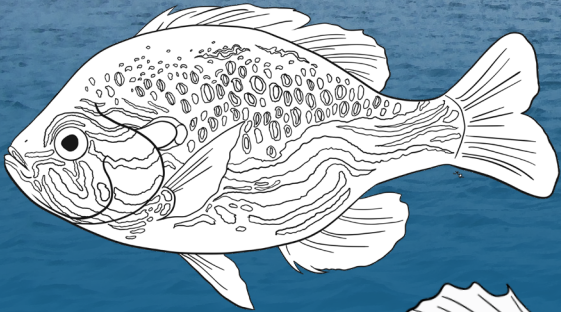
It means: \_\_\_\_\_

\_\_\_\_\_

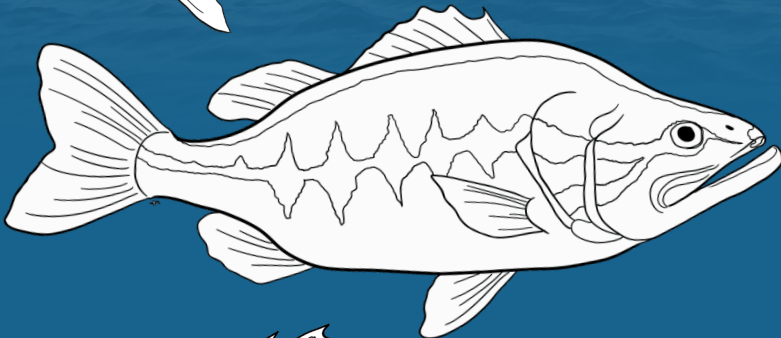


# COLOR IN A NATIVE FISH

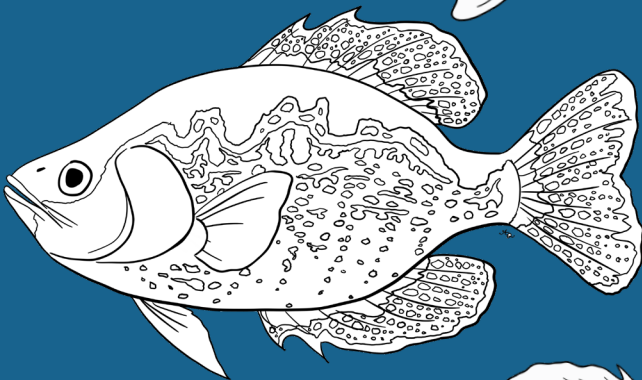
Native fish are fish that were originally found in Minnesota. They are very important! These types of fish help our lakes and rivers stay healthy, and provide an important source of food for other animals-- including humans.



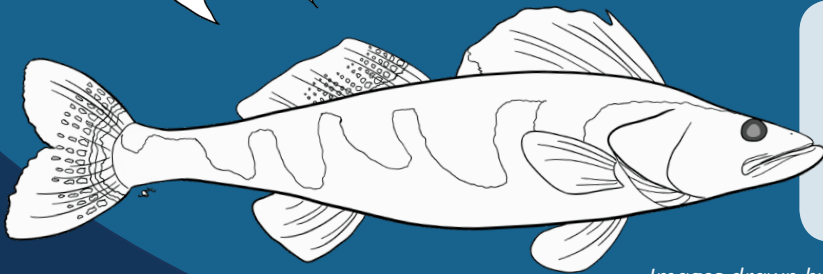
**PUNPKINSEED SUNFISH.** These colorful fish have a yellow or orange belly, and many brown dots on their sides. They usually reach about 5-8 inches in length.



**LARGEMOUTH BASS.** These fish have a dark stripe across their sides. They eat insects and other fish, including sunfish. They reach nearly 2 feet in length and can live more than 15 years in the wild.



**BLACK CRAPPIE.** These darkly colored fish grow to about 12 inches in length. Females lay up to 30,000 eggs in one nest. Young fish eat zooplankton and insect larvae, and adult crappie eat small fish.



**WALLEYE.** These fish are generally gold and green, with dark bands on their backs. They can grow up to 3 ft in length and are very popular for fishing. The walleye is the state fish of Minnesota!

Images drawn by Aimi Dickel

## Warning!

Invasive species are types of animals and plants that were not originally found in Minnesota. They can be very harmful to an ecosystem. The common carp is one example of an invasive fish that is bad! Carp disturb native plants, increase algae and pollution, and make it hard for native fish to survive.





I SPY...

# THE WONDER OF WETLANDS

How many different kinds of plants and animals can you spot in this picture? Unscramble the words below to learn their names.

## Did you know?

Wetlands are very important parts of the watershed. They provide homes and feeding habitats for many different types of animals. They also help us protect against flooding.



Image created by Aimi Dickel

GTARE BLEU ENRHO \_\_\_\_\_

MUSTARK \_\_\_\_\_

MAARLLD UDCK \_\_\_\_\_

PAINDTE TULRET \_\_\_\_\_

WDLI RECI \_\_\_\_\_

CATTILAS \_\_\_\_\_

MILWEEKD \_\_\_\_\_

DRAFLYGON \_\_\_\_\_

DAMSEFLYL \_\_\_\_\_

ARROHEWAD \_\_\_\_\_

MARHS MARIDGOL \_\_\_\_\_

AMECRAIN WETAR LIYL \_\_\_\_\_

LEOARPD OFRG \_\_\_\_\_

WODO DCUK \_\_\_\_\_

GREAT BLUE HERON, MUSKRAT, MALLARD DUCK, PAINTED TURTLE,  
WILD RICE, CATTAILS, MILKWEED, DRAGONFLY, DAMSEFLY,  
ARROWHEAD, MARSH MARIGOLD, AMERICAN WATER LILY, LEOPARD  
FROG, WOOD DUCK

# MACROINVERTEBRATE MATCHING

Draw a line to match the larvae (baby insects) on the left, to the adult insect on the right.

*Aquatic macroinvertebrates* are bugs that live in lakes or streams, and have no backbone. These macroinvertebrates are very important! They are often food for animals like frogs and birds, and they can even clean the water to make it healthier!

## Larvae

1.



Stonefly

2.



Caddisfly

*Hint: My antennae grow very long!*

3.



Damselfly

*Hint: I look similar to a dragonfly!*

4.



Mayfly

*Hint: My tail grows very long and thin.*

5.



Cranefly

*Hint: My long legs make me look like a spider.*

6.



Riffle Beetle

*Hint: Look for the beetle!*

## Adults

A.



B.



C.



D.



E.



F.



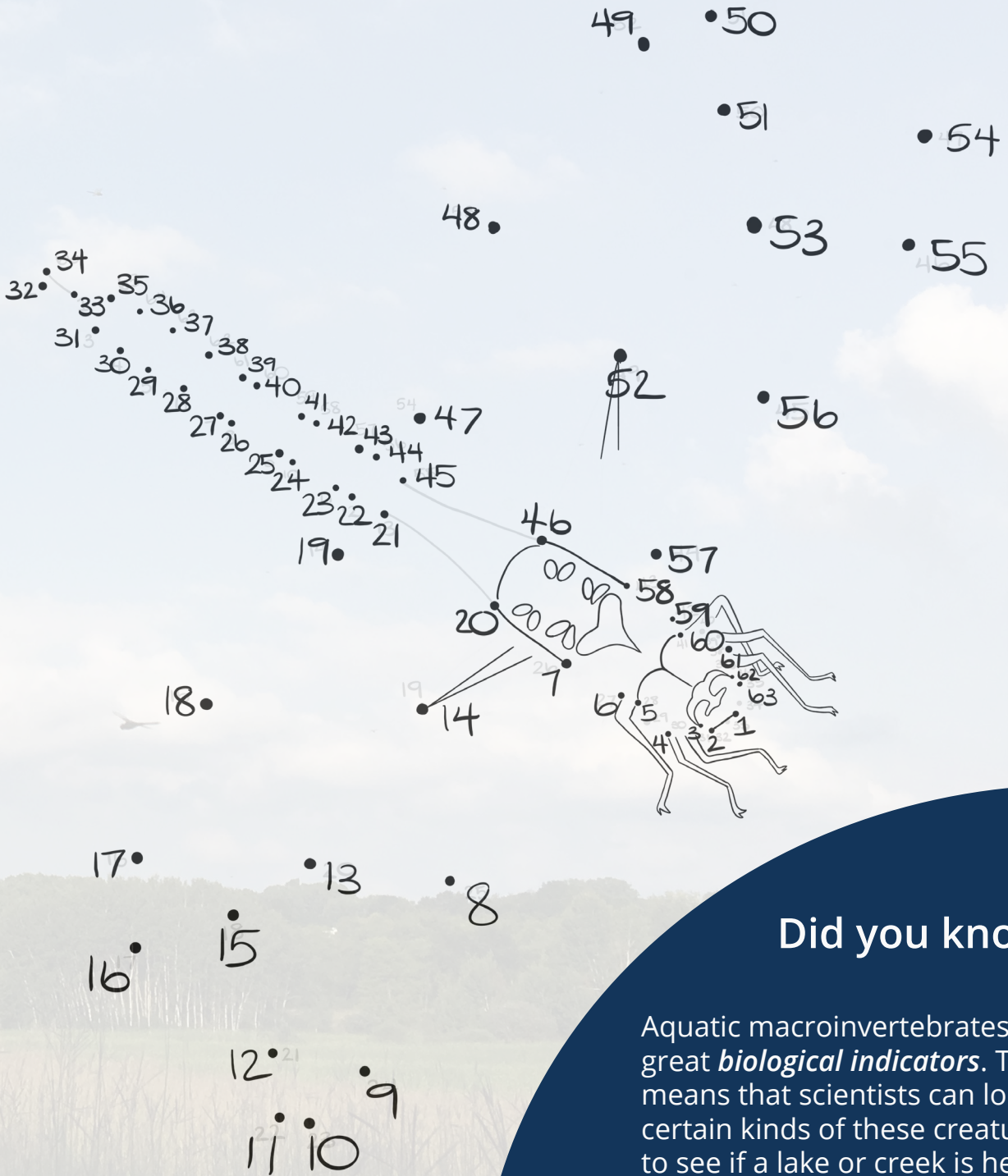
*Images on this page courtesy of MN DNR*



# CONNECT THE DOTS



What will I look like when I grow up? Start with number 1 and connect the dots to find out.



## Did you know?

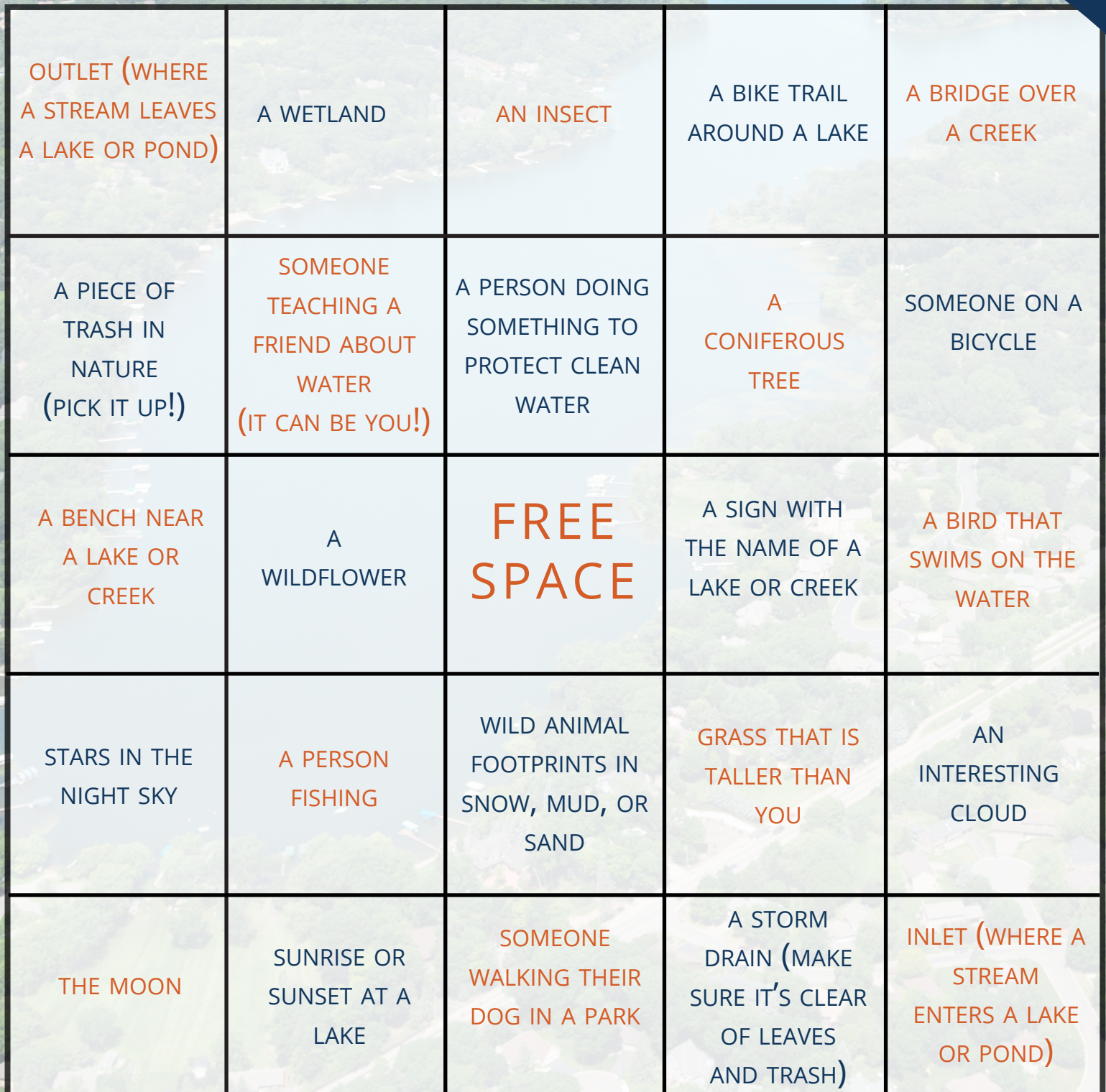
Aquatic macroinvertebrates make great *biological indicators*. This means that scientists can look for certain kinds of these creatures, to see if a lake or creek is healthy.



# BINGO!

The fish, insects, macroinvertebrates, and wetlands that you learned about in the beginning of this book are all part of what make our watershed so great!

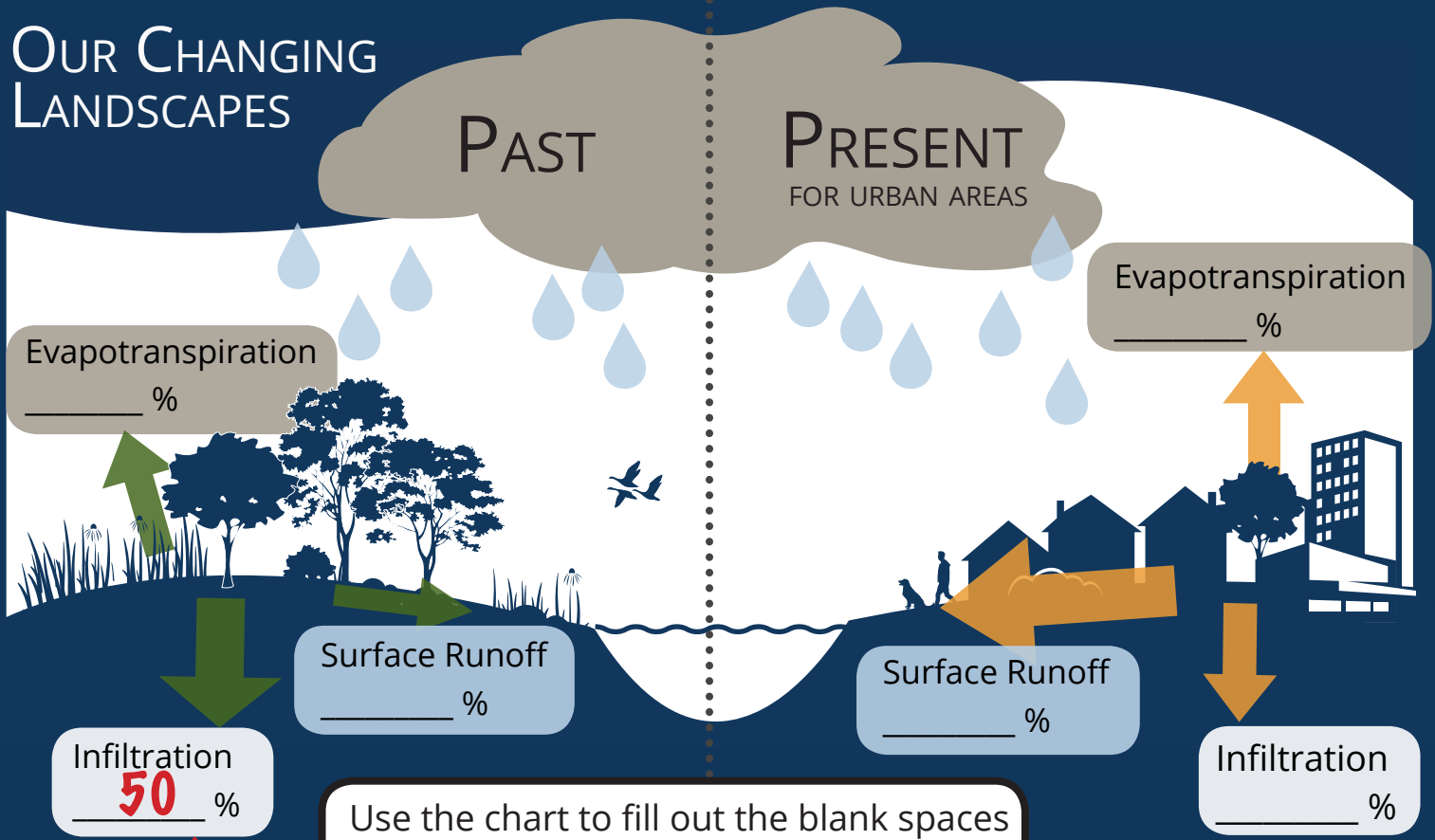
*Get outside and see it for yourself.* Try to get a “bingo” by filling in 5 in a row, in any direction! Want more of a challenge? See if you can fill in all of the squares.



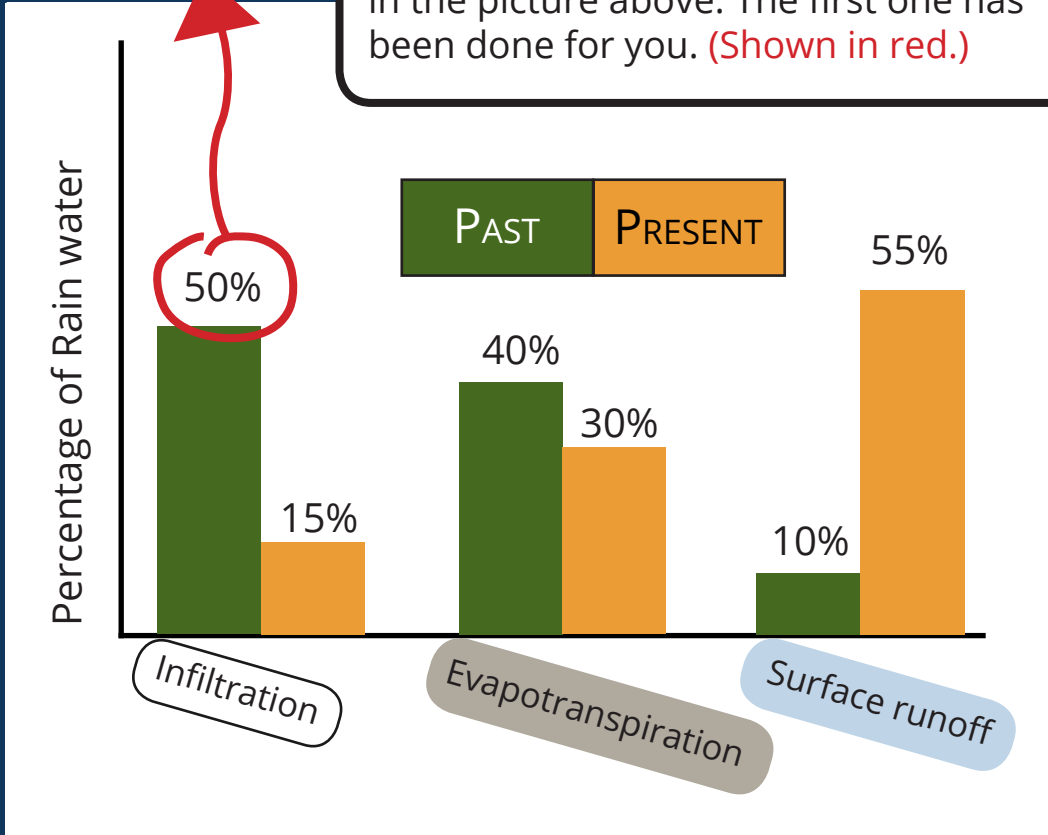
OUTLET (WHERE A STREAM LEAVES A LAKE OR POND)	A WETLAND	AN INSECT	A BIKE TRAIL AROUND A LAKE	A BRIDGE OVER A CREEK
A PIECE OF TRASH IN NATURE (PICK IT UP!)	SOMEONE TEACHING A FRIEND ABOUT WATER (IT CAN BE YOU!)	A PERSON DOING SOMETHING TO PROTECT CLEAN WATER	A CONIFEROUS TREE	SOMEONE ON A BICYCLE
A BENCH NEAR A LAKE OR CREEK	A WILDFLOWER	FREE SPACE	A SIGN WITH THE NAME OF A LAKE OR CREEK	A BIRD THAT SWIMS ON THE WATER
STARS IN THE NIGHT SKY	A PERSON FISHING	WILD ANIMAL FOOTPRINTS IN SNOW, MUD, OR SAND	GRASS THAT IS TALLER THAN YOU	AN INTERESTING CLOUD
THE MOON	SUNRISE OR SUNSET AT A LAKE	SOMEONE WALKING THEIR DOG IN A PARK	A STORM DRAIN (MAKE SURE IT'S CLEAR OF LEAVES AND TRASH)	INLET (WHERE A STREAM ENTERS A LAKE OR POND)



# OUR CHANGING LANDSCAPES



Use the chart to fill out the blank spaces in the picture above. The first one has been done for you. (Shown in red.)



## Infiltration

Some water soaks into the ground. It travels down through spaces between soil and rocks.

## Evapotranspiration

As plants grow, they pull water from the soil and release water molecules up into the air. Soil, lakes, and other features also release water into the air through evaporation.

## Surface runoff

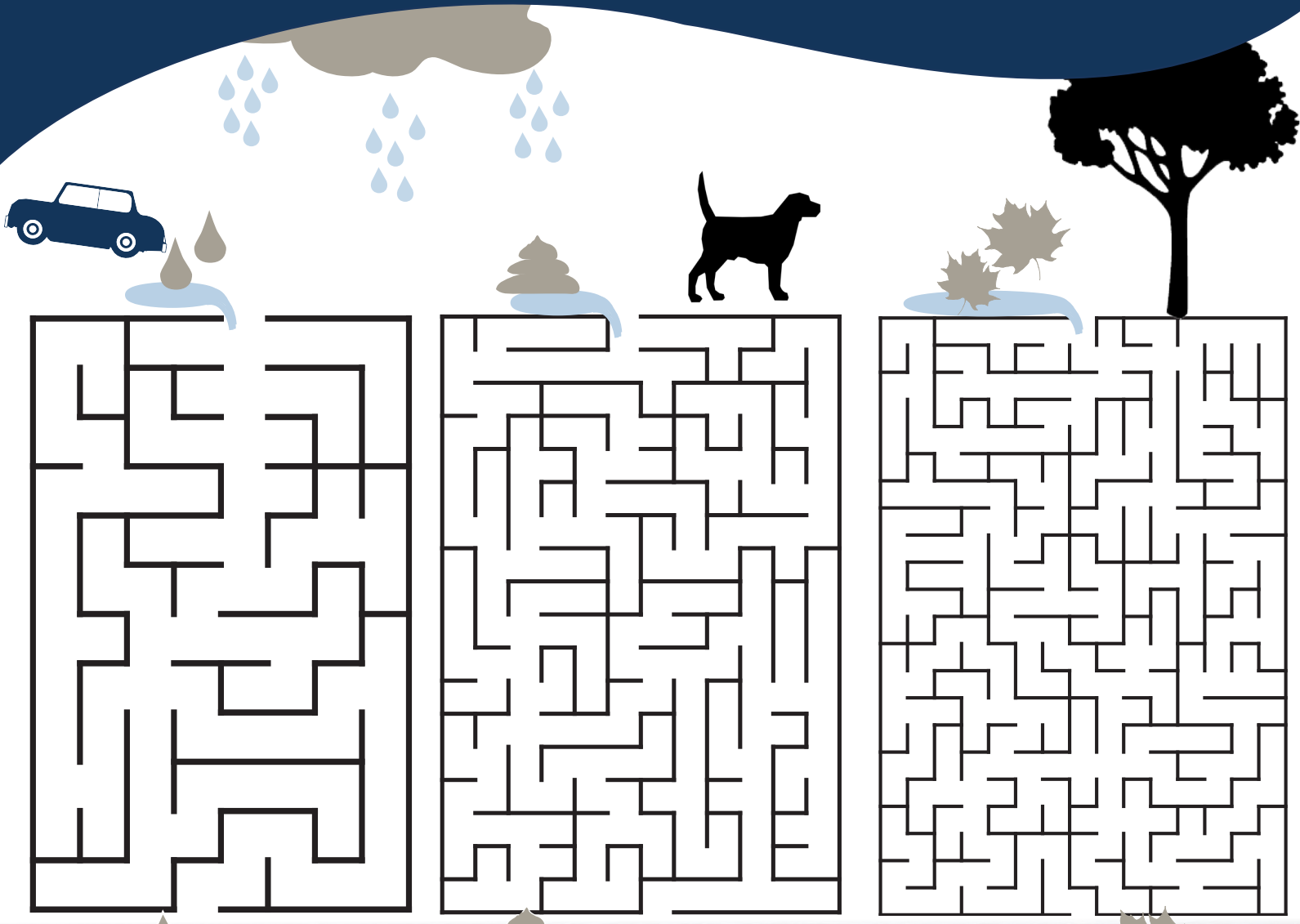
Water that is not moved through infiltration or evapotranspiration flows across the landscape to a storm drain, creek, or other water body.

In the past, most rain water soaked into the ground or was released into the air. Today, our landscapes are covered with roads, buildings, and parking lots. Since it cannot soak down into these surfaces, more water flows across the land (surface runoff). This means that more water enters streams and lakes, causing erosion and other problems. Surface runoff also carries pollutants from our streets and sidewalks, and brings these pollutants into lakes, creeks, and wetlands.

# TRACE THE POLLUTION

Urban and suburban environments often have large amounts of surface runoff. When it rains, stormwater carries pollutants like trash, oil from cars, chemicals, fertilizers, and dog poop, from our sidewalks and roads. The water travels through storm drains and ends up in creeks, lakes, and wetlands.

*Trace the paths of these different pollutants, as they make their way into a lake.*



What other pollutants do you think stormwater might carry from our roads, yards, and buildings and bring into lakes and rivers? Make a list here.

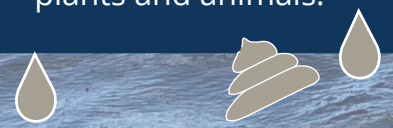
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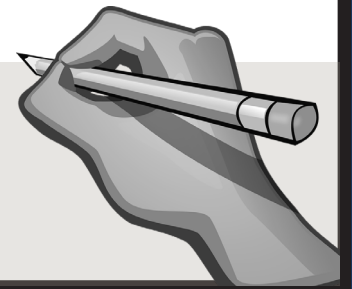
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These pollutants can add chemicals and bacteria into the water, which makes it unhealthy and harms plants and animals.





**DRAW!**



**Draw a picture of your favorite lake or creek!  
What kinds of animals and plants live there?**

**What will you do to help keep this place clean and healthy? Write  
or draw some ideas in the space below.**

A large, empty rectangular area with a light gray background, intended for the student to draw or write their ideas. The area is framed by a dark green border.

# PROTECTING THE WATERSHED

What can you do?



Using the words below, fill in the blanks to create a list of ways that you can help protect the watershed.

CUT OUT THIS PAGE AND HANG IT UP TO REMIND YOU HOW YOU CAN HELP

native plant

dog poop


rain water


storm drain


pick up


teaching others


salt


 Adopt a \_\_\_\_\_. Is there one near your home or school? Make sure it stays clean and keep it clear of leaves, sticks, dirt, and other things. Anything in the drain will get carried into lakes and creeks.


 \_\_\_\_\_ trash. Trash in our lakes and streams can make the water unhealthy for animals and people to enjoy. Clean it up before it gets into the water! Be sure to protect your hands by wearing gloves.

 Sweep up extra \_\_\_\_\_ in the winter, and use only what you need. This is used to help melt ice on roads and sidewalks, but be careful how much you use. Just one teaspoon can permanently pollute 5 gallons of water!

 Always be sure to scoop up \_\_\_\_\_ from your pet. If this reaches a lake, it can pollute the water and make it unsafe for people and animals. We don't want this in the water that we swim, fish, and boat in!

 Plant a \_\_\_\_\_. These plants have long roots that can help clean the water and soak it into the ground.

 Collect \_\_\_\_\_. Ask your family to use a rain barrel to collect water from the roof and save it to water a lawn or garden.

 Tell your friends and family about what you learned! An important part of water conservation is \_\_\_\_\_ and spreading the word.

 **OTHER** Write your own idea here: \_\_\_\_\_  
\_\_\_\_\_



# CONGRATULATIONS!

This certifies that \_\_\_\_\_ has completed all activities necessary to be a Junior Explorer of the Riley, Purgatory, and Bluff Creek Watersheds.

**Junior Explorer Pledge:** As a junior explorer, I pledge to appreciate and protect the lakes, streams, wetlands, and groundwater resources in the Riley Purgatory Bluff Creek Watershed District. I will learn about the natural world around me, do what I can to protect water quality, and encourage others to do the same.



I have completed this book to the best of my ability and would like a Junior Explorer Badge!

Mail the bottom of this page:  
RPBCWD  
18681 Lake Drive East  
Chanhassen, MN 55317

OR

Email Eleanor at [emahon@rpbcd.org](mailto:emahon@rpbcd.org) with your name, age, and mailing address, along with a photo of this page.



Your Name: \_\_\_\_\_ Age: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

**One thing I will do to protect water:** \_\_\_\_\_

Parent/Guardian Signature: \_\_\_\_\_

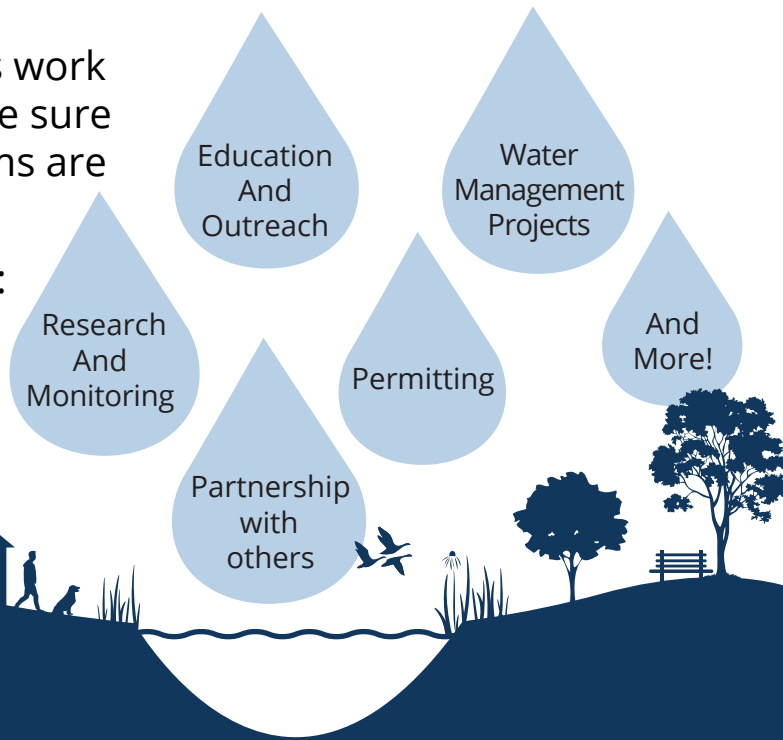
My child has completed this activity book to the best of their ability.



**RILEY  
PURGATORY  
BLUFF CREEK  
WATERSHED DISTRICT**

Watershed Districts work with people to make sure our lakes and streams are clean and healthy.

We do this through:



*This book was created by the Riley Purgatory Bluff Creek Watershed District. For more information or to adapt this book for other educational uses, contact Eleanor Mahon at [emahon@rpbcwd.org](mailto:emahon@rpbcwd.org).*

**Contact us**

and find out how you can get involved

**DISTRICT OFFICE**

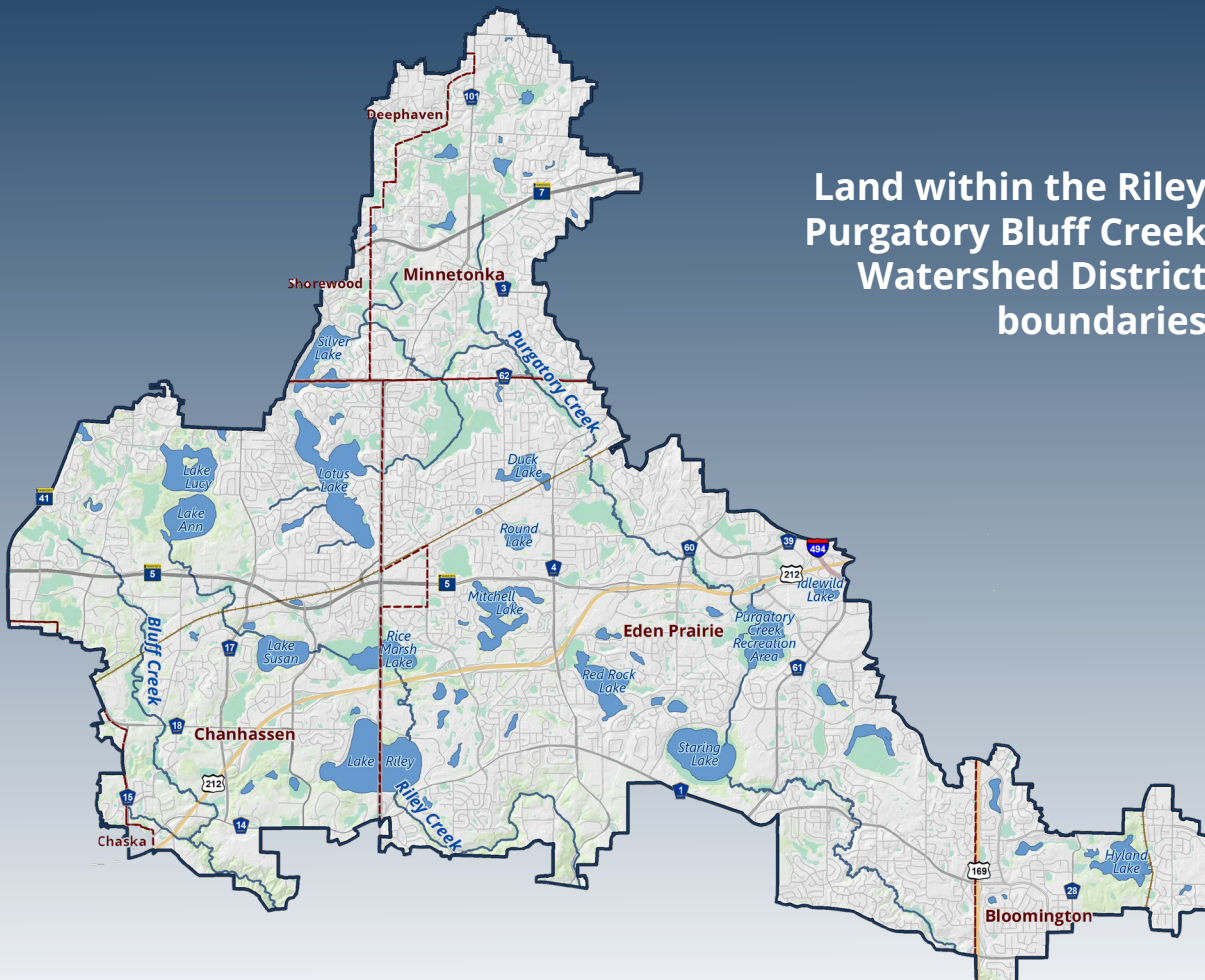
18681 Lake Drive East  
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**Land within the Riley Purgatory Bluff Creek Watershed District boundaries**