

Lake Biodiversity Activity Book



Great Blue Heron

My Name: _____

Biodiversity: The Variety of Life

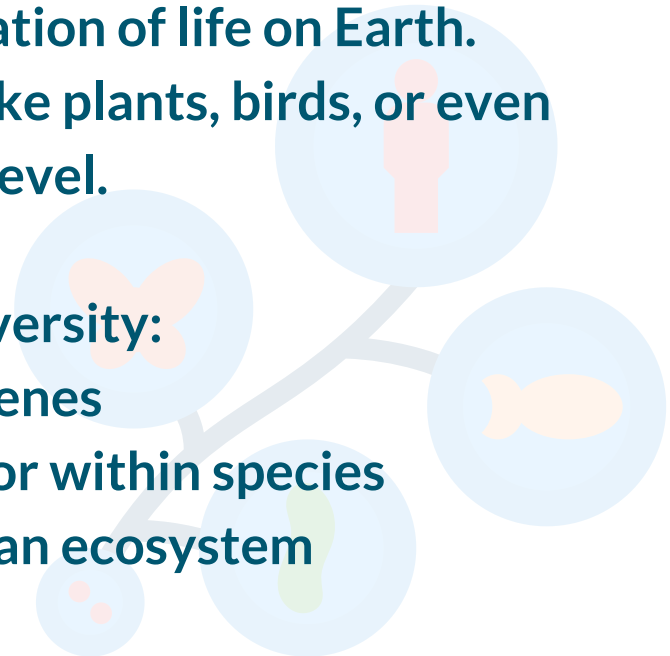


What is biodiversity?

Biodiversity, or biological diversity, refers to the variety or measure of variation of life on Earth. This includes all living things like plants, birds, or even organisms at the microscopic level.

There are three types of biodiversity:

- genetic - the variation of genes
- species - variety between or within species
- ecosystem - the variety in an ecosystem



Biodiversity

B I N G O

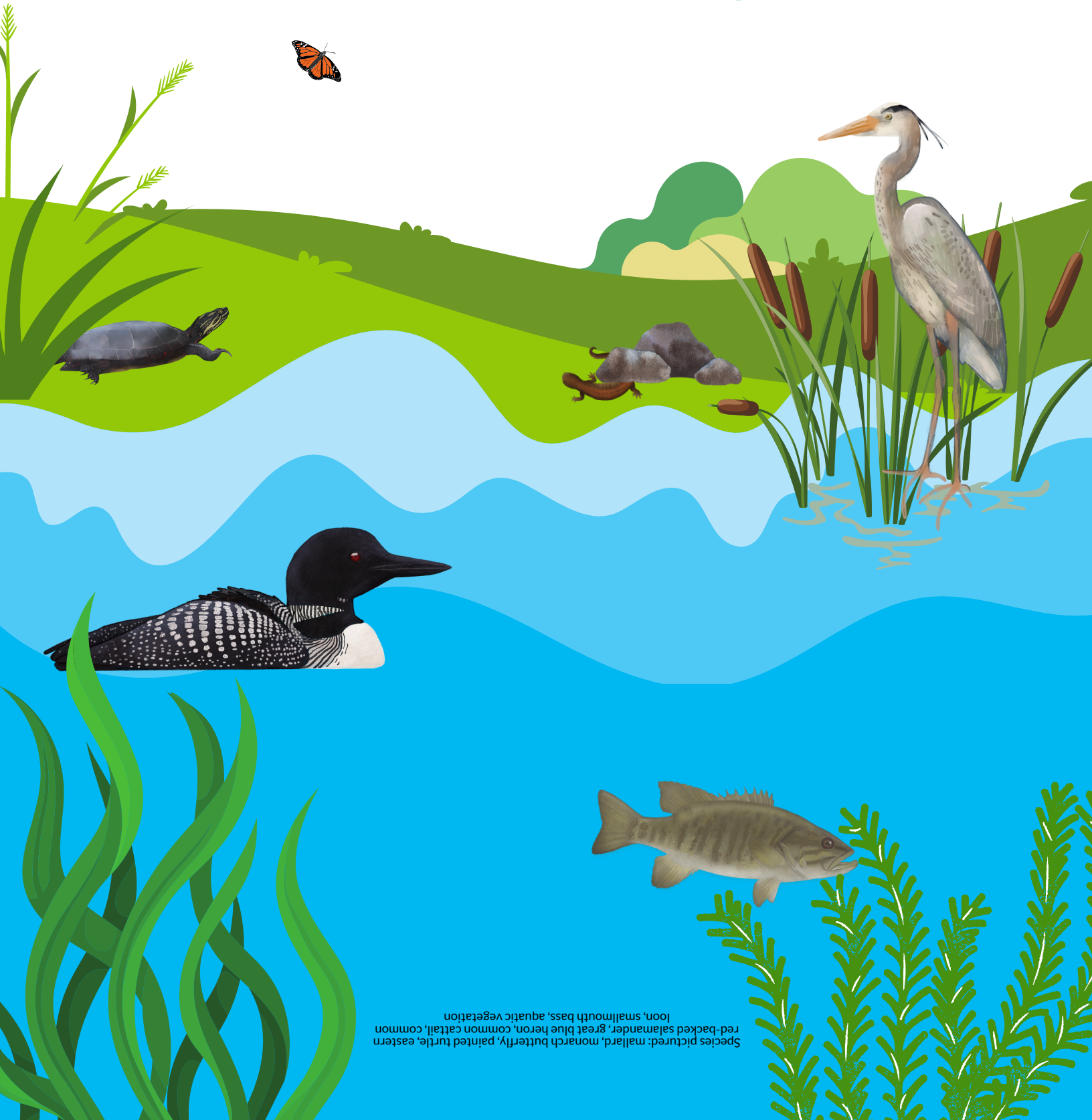
caddisfly	power of hydrogen	neutral	chlorinity	hero
storm water	acidity	runoff	ladybug	abundance
interspecies	species richness		indicator species	variation
biodiverse	genetics	dichotomous	alkalinity	resource availability
link	bioindicator	lake	ecosystem	survival

As you learn about biodiversity in this activity book, fill out this BINGO card with the page number for each special word to get 5 in a row!



Welcome to the Lake!

Can you circle all the elements of the lake that make it a biodiverse ecosystem?



Species pictured: mallard, monarch butterfly, painted turtle, eastern loon, smallmouth bass, aquatic vegetation
red-backed salamander, great blue heron, common cattail, common

Spot the Difference!

Can you circle all the differences when there is less biodiversity in the ecosystem?



Pictured: Invasive phragmites, garbage, invasive goldfish, cut fishing line, no native species, dirty water

Let's Discuss!

1.

2.

3.

What are 3 things you noticed about the biodiverse ecosystem?

Did you notice when there is less biodiversity, there is...



...a chance for more species like invasive Phragmites to spread?



...more garbage and hazards that can hurt wildlife?

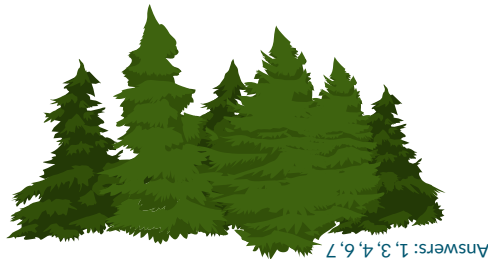


...a change in the colour and clarity of the water?

Benefits of Biodiversity

Circle the 5 positives of biodiversity.

1. Biodiversity helps fight disease.
2. When there is a lot of species abundance, an ecosystem is better.
3. Biodiverse ecosystems function better.
4. Biodiversity helps increase genetic diversity.
5. Biodiversity means more pollination.
6. With more biodiversity, there is more resource availability.
7. Species richness is a safety net.
8. Less species means more resources.

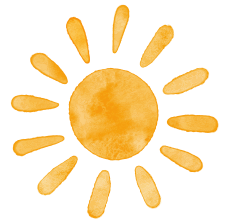


Answers: 1, 3, 4, 6, 7



Links and Interactions

Connect the animals, insects, and plants to create an interaction. Label whether the interaction is between species, within species, or within a natural environment.



Water Quality Word Search

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



pH

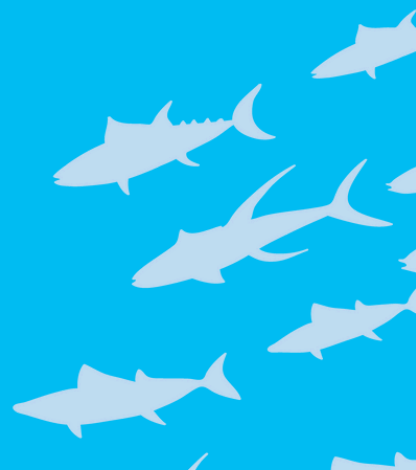
acidity

basic

neutral

alkalinity

chlorinity



Testing the Waters

Match the term to its description

1. Chlorine

a) measures the dissolved minerals in water

b) pH of 7

2. Hardness

c) pool chemical and chemical element not natural to freshwater

3. pH

d) how water resists changes in pH

4. Alkalinity

e) potential of Hydrogen, a scale of 0-14 of how acidic or basic something can be

5. Neutral

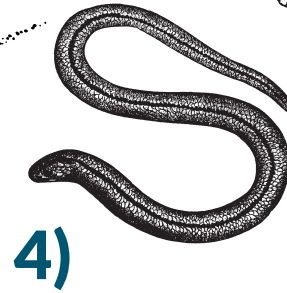
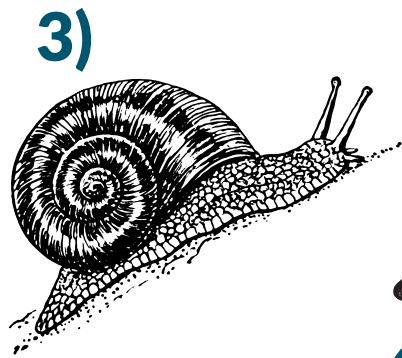
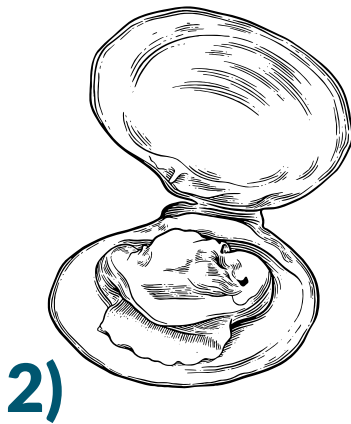


Using a Dichotomous Key

What is a dichotomous key?

It is a tool that gives options to help identify a certain item like trees or birds or even leaf types.

Help identify these creatures by using the key!



Start here

has shell

no shell

single shell

double shell

no visible wings

wings

a) Snail

b) Clam

case

no case

e) Mayfly

c) Caddisfly

d) worm

Bioindicators

What is a bioindicator?
Let's look at some examples!



Caddisflies

A group of insects in the order Trichoptera, they spend their larvae stage in water and grow into adulthood on land. They are sensitive to pollution so their appearance in water is an indicator of good water health.



Lichens

Lichens are made up of a fungus and an alga. Some types of lichens are sensitive to air pollution. This sensitivity means when they are present, there is good air quality.



Frogs

As the largest group of amphibians, frogs are an important part of their natural ecosystems. As they live some of their life in water and are easily made sick by pollution, they are only present in a healthy ecosystem. This makes them a good indicator species.

Diversity Within Species

Unscramble the letters to learn about what makes biodiversity within species so great!

cegtnei tsvideriy

eidsaes retnpveoni

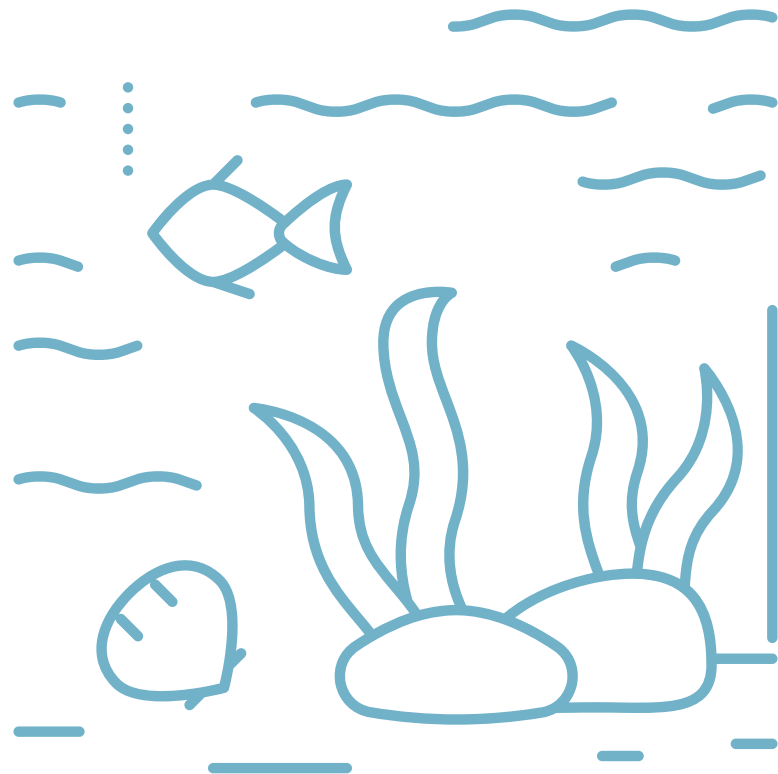
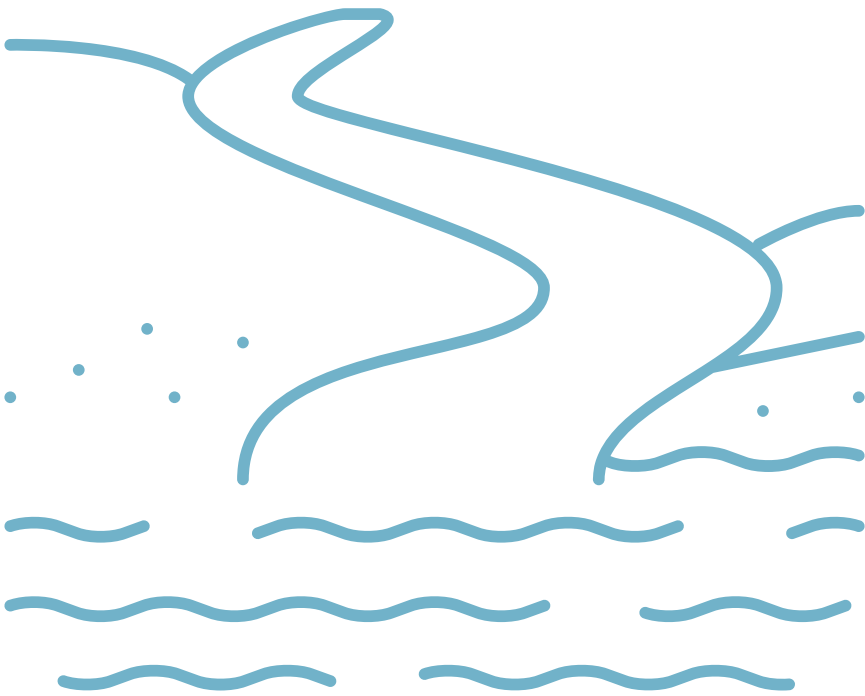
aiolibogcl atiavorin

iruvsvla

atdantoaip

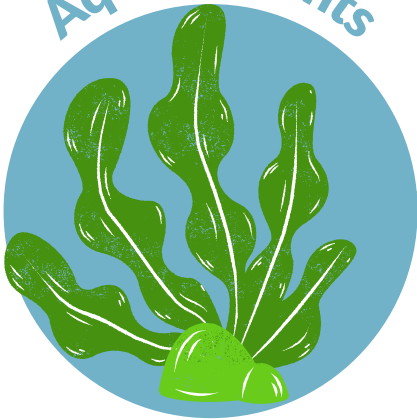
Community Biodiversity

Everything is connected! Add your own drawings to connect the communities to create a more biodiverse and resilient environment.



Building Resilience through Biodiversity

Aquatic plants



As the lungs of the lake, aquatic plants produce oxygen and filter out carbon dioxide.

Shoreline vegetation



Acting like a shield, shoreline vegetation prevents erosion and invading invasive species!

Upland forests

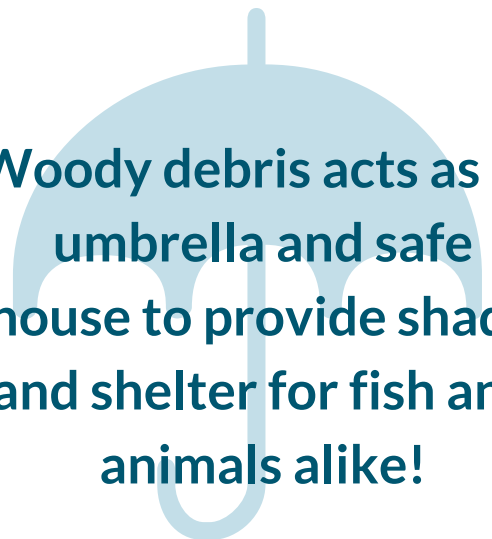


Forests are known to provide a breath of fresh air through oxygen production, and are important habitat.



Did you know?
Even woody debris can play a role in supporting life in the environment!

Woody debris acts as an umbrella and safe house to provide shade and shelter for fish and animals alike!



What happens to the river?



warmth

salt

fertilizer

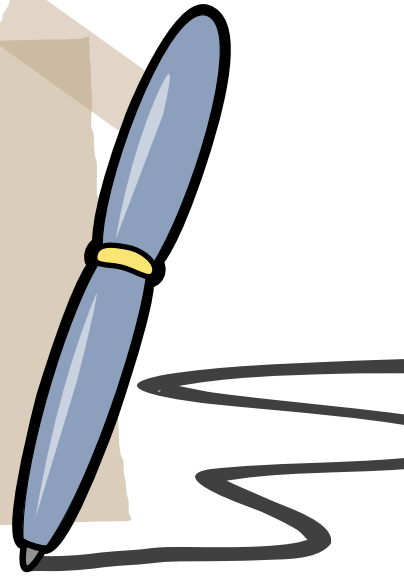
nutrients

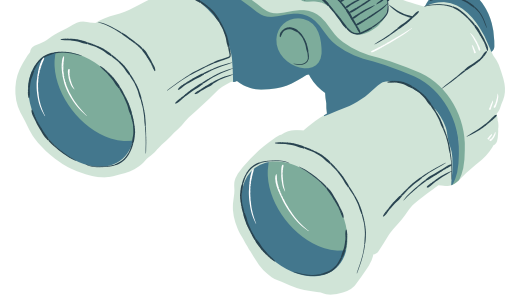
sediments

Use your detective skills to make an inference – a conclusion reached based on evidence and reason – about what happens to the river when there is too much of each of the bubbled features. Draw or write on the river what you think happens when each is added.

Write your own poem!

Use the space below to show your appreciation for nature by writing a poem.





Backyard Species Count

Take some time outside and count what you can find!



Number of pollinators



Number of birds



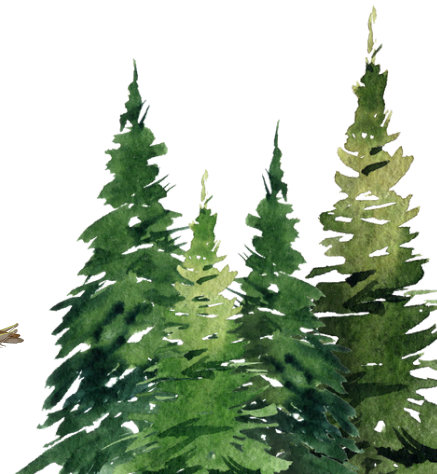
Number of trees



Number of bugs



Number of wildflowers



Save the River!



The river needs a hero like YOU!

What can you do to help save the river from pollution and storm water runoff?

Write down your action plan here!



Created by:



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