Before you begin the survey ....

We appreciate your participation in this important survey.

The survey includes many large images and written passages that are best viewed on a laptop, desktop computer or large tablet. If you are currently on a mobile phone or another device with a small screen, we encourage you to change the device you are using and restart the survey.

→

For scientific purposes, only those who live in our study region are eligible to participate. If you do not, the survey will end.

Please enter the five-digit zip code (e.g., 12345) of your primary residence. Please **do not** enter a zip code connected with a P.O. Box or a place of employment.

Please enter:

→

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Thank you for taking this survey. It will take you about 30 minutes to complete. We understand you have other uses of your time and so we appreciate your participation.

The survey is being administered to households in your region. It is important for the accuracy of our analysis that you answer the questionnaire as completely and honestly as possible. **Your response is important even if you are not interested in water resources**, because it is essential that we represent a broad range of viewpoints.

Researchers at Cornell University, University of Massachusetts, University of Minnesota, University of Tennessee, and University of Wisconsin have designed the current study and will analyze the responses.

→

Water resources are important to the US economy, and effectively managing our lakes, rivers, and streams is a significant challenge. With the goal of providing reliable policy recommendations, we are conducting this survey to measure households' opinions about local and regional water quality.

This study is made possible through the financial support of the US Environmental Protection Agency (EPA) under the authority of the Clean Water Act, Section 104, 33 U.S. C. 1254. Study results will help decision makers at the federal, state and local levels, as well as private stakeholders, by quantifying the behavioral and socioeconomic consequences of water quality policies.

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In this survey, we will:

1. Ask your opinions on water resources in your area.
2. Describe the impacts of pollution in streams, rivers, and lakes.
3. Present possible public policies for improving streams, rivers, and lakes. If implemented the policies would improve water quality but increase costs for your household. You will be asked to vote yes or no on several possible alternatives.
4. Collect some additional information on your household to better understand your views on water quality.

Study reports will only present statistical summaries. All individual responses will be kept confidential. While we anticipate the risk is very low, a data breach is possible with any survey service.

← →

Part 1. Your experience with water resources

We will first ask your opinions on water resources and quality near your home.

How familiar are you with the streams, rivers, and lakes in your local area?

- ○ Very familiar
- ○ Moderately familiar
- ○ A little familiar
- ○ Not at all familiar

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In what ways are the streams, rivers, and lakes in your local area important to you? Please select **all** that apply.

- [ ] Important because they provide habitat for wildlife and plants
- [ ] Important because I use them for recreation
- [ ] Important because they provide attractive landscapes near where I live
- [ ] Important because they are a component of the overall natural environment
- [ ] Important for other reasons (please specify):
- [ ] Not important to me

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Water pollution can damage streams, rivers, and lakes and limit the ways people can safely use them. Water pollution can also reduce the diversity of plants and animals and affect the appearance of the water and shoreline.

Which of the following surface water pollution impacts concern you, if any? Please select **all** that apply.

- [ ] Diminished visual appeal in the landscape
- [ ] Diminished presence of native plants, fish, and other wildlife
- [ ] Swimming advisories
- [ ] Diminished recreation opportunities
- [ ] Frequency of harmful algal blooms
- [ ] Consumption advisories on fish
- [ ] Disruptions to traditional ways of life
- [ ] None of the above impacts concern me
- [ ] I am not aware of any impacts of pollution on surface water

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Think about times when you have been near streams, rivers, or lakes in your local area. Did you ever notice any of the following? Please select **all** that apply.

- [ ] Unpleasant odors
- [ ] Limited water clarity
- [ ] Small amounts of algae on the water surface
- [ ] Large amounts of algae on the water surface
- [ ] Murky or green water color
- [ ] Trash on shore or in the water
- [ ] Unhealthy looking vegetation near the water
- [ ] I have not been near a lake, river, or stream in my local area
- [ ] I have not noticed any of these impacts in my local area

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Experts measure the effects of water pollution in different ways. Common approaches include:

Physical Properties – How much pollution is in the water and how much is transported downstream?

Biological Properties – How many types of plants, insects, and fish have healthy populations in the water body?

Visual Properties – How clear, and what color, is the water? Is the shoreline covered by a rich variety of plants, shrubs, and trees? Is there bare soil on the banks? Does the water look weedy?

Uses by People – Is direct contact with the water safe and does the water body support a variety of recreation activities?

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Experts often combine the various techniques for measuring water pollution to compare overall quality levels across regions. For example, surface waterbodies can be divided into six categories based on how a stream, river, or lake differs from its natural state:

1 - Natural State
2 - Close to Natural State
3 - Some Changes Noticeable
4 - Many Changes Noticeable
5 - Major Degradation
6 - Extreme Degradation

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Think about any specific stream, river, or lake near your home. What is your impression of its water quality?

- 1 - Natural State
- 2 - Close to Natural State
- 3 - Some Changes Noticeable
- 4 - Many Changes Noticeable
- 5 - Major Degradation
- 6 - Extreme Degradation
- I am not able to make a guess about the quality level
- I do not know of a lake, river, or stream close to my home

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Part 2. Describing the impacts of pollution in lakes, rivers, and streams

The following illustrations provide visualizations of water bodies with different water quality levels as characterized by experts. We will first show you images that separately show the appearance, supporting uses, and biodiversity for different quality levels.

← →

Water body appearance is shown using graphics like this river image.

It illustrates the color and clarity of the water, features of the bottom, and how the shoreline looks for this level of water quality.

←

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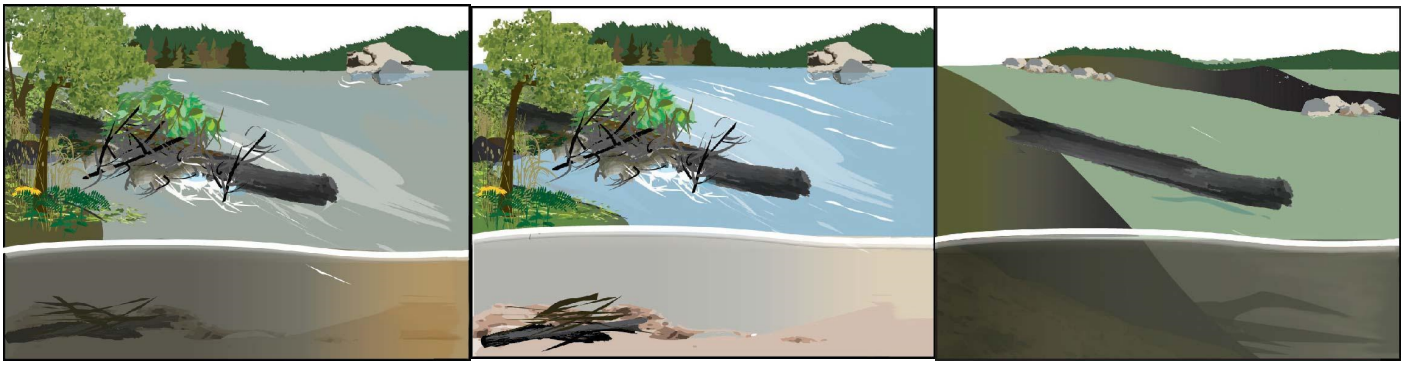
Water bodies with different water quality levels look different. Higher quality streams, rivers, and lakes have clear blue water. Lower quality streams, rivers, and lakes have cloudy or green water and there may be algae on the surface.

Which image do you think shows the **best** water quality?



○ ○ ○

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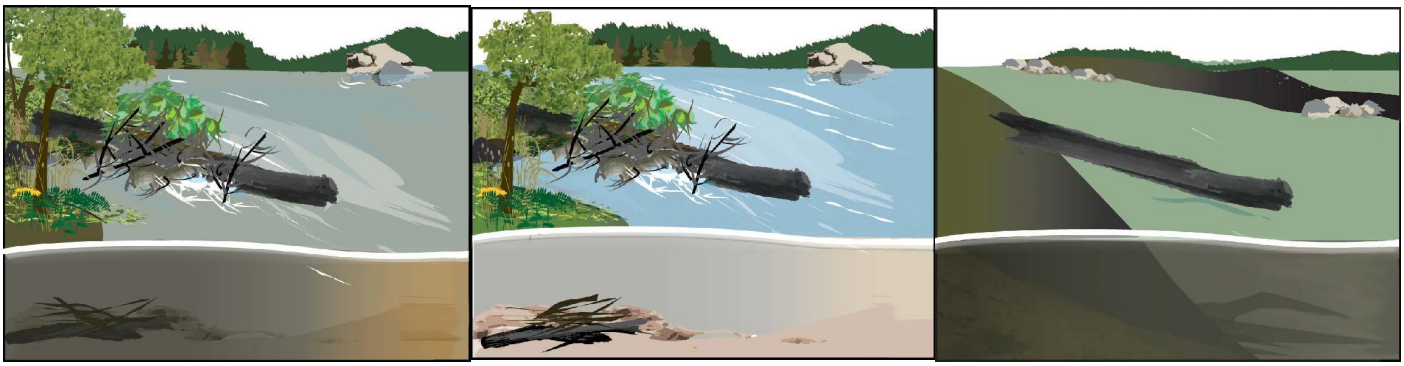
Water bodies with different water quality levels look different. Higher quality streams, rivers, and lakes have clear blue water. Lower quality streams, rivers, and lakes have cloudy or green water and there may be algae on the surface.

Which image do you think shows the **best** water quality?



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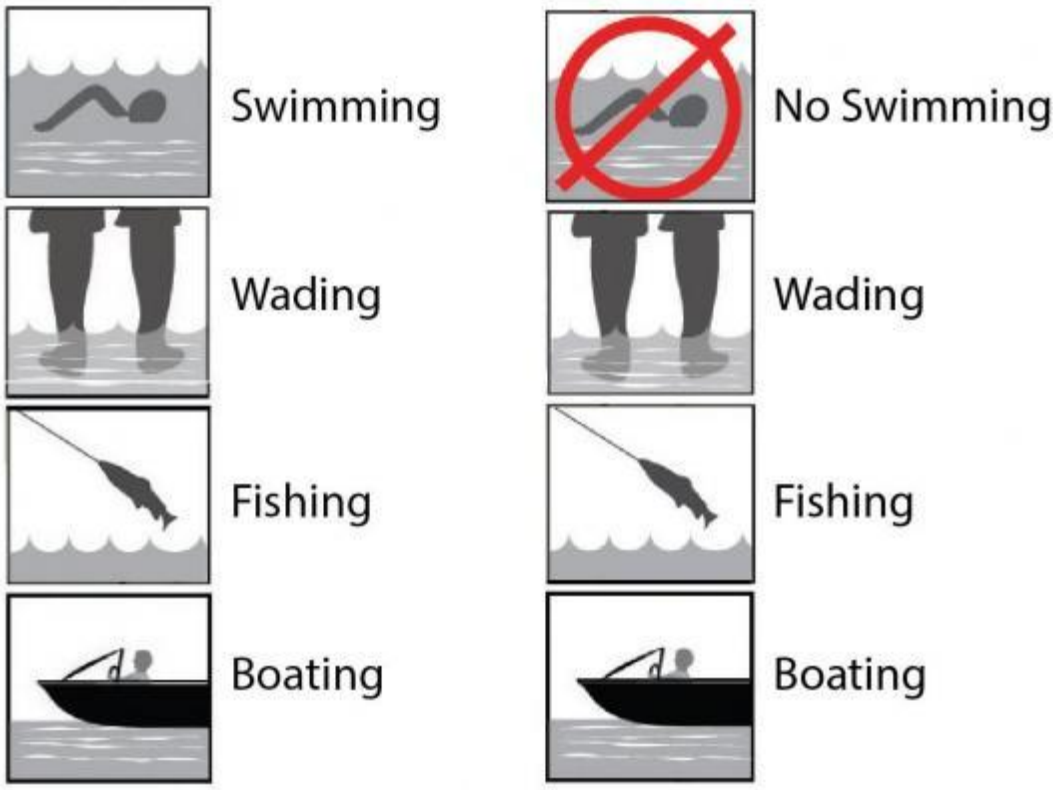
Water bodies with different quality levels can be used in different ways.



The icons show the uses that are safe in a water body. A **red cross** means that use is **not safe** in a water body, and that activity is not available.

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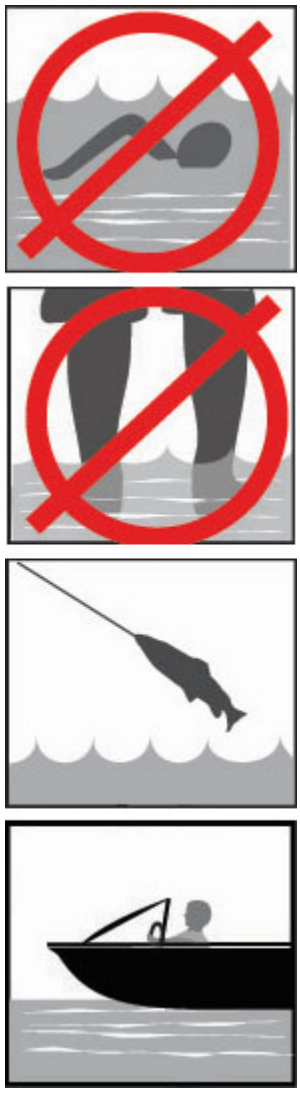
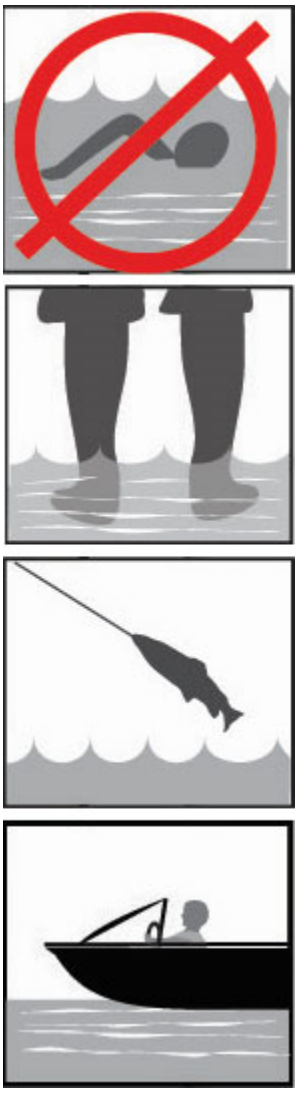
Higher water quality means direct contact with the water is safe and several non-contact uses are available. Lower water quality means some uses are not available.

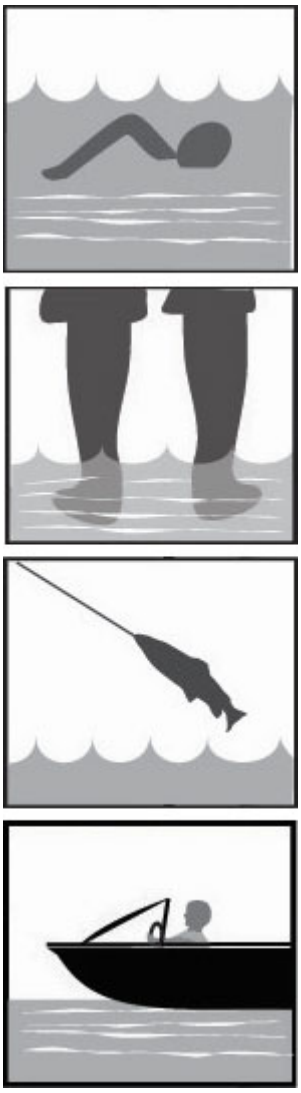
Which of these three supporting use graphics indicates the **best** water quality level?



○



○



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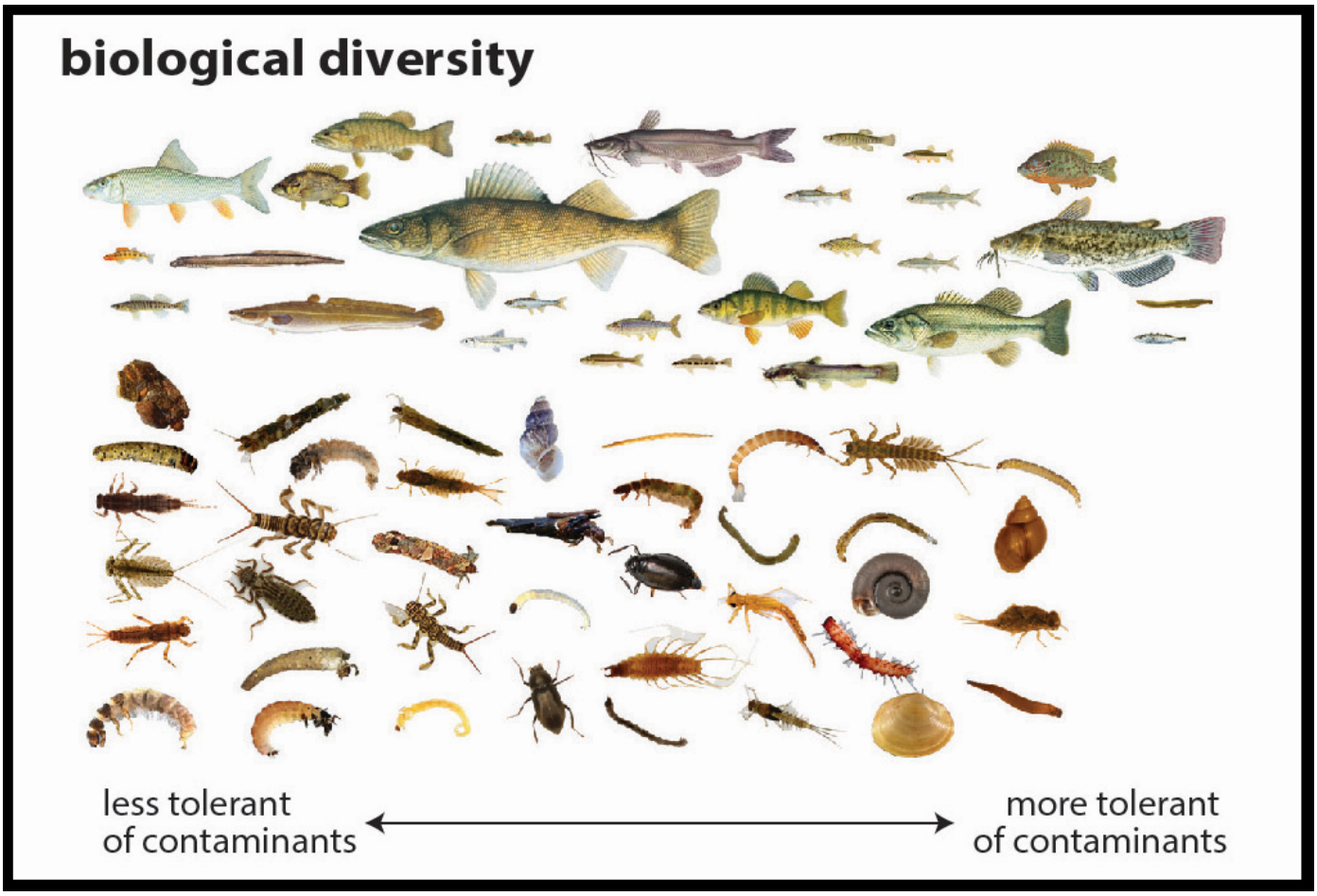
Biological diversity in a water body is illustrated using a fish and insect graphic.



Fish and insects to the left on the scale need cleaner water. Fish and insects to the right on the scale can live in more polluted water.

←

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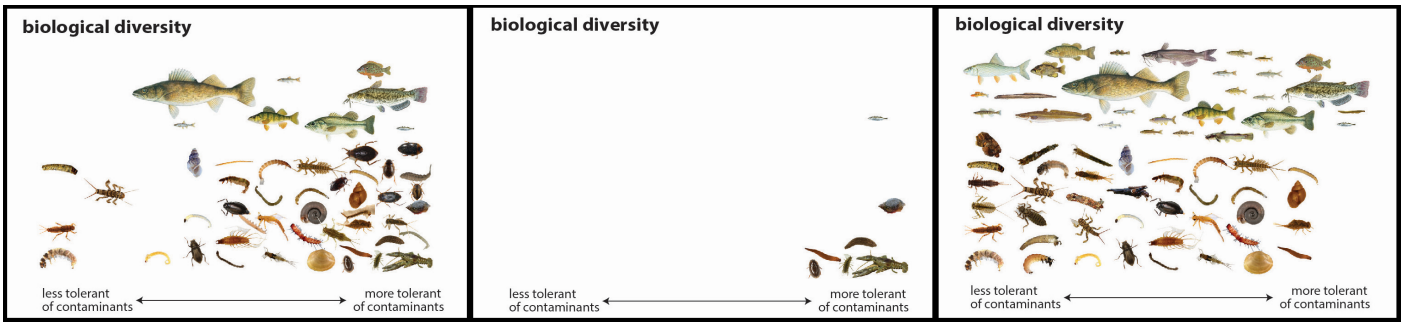
High quality water bodies have **many species** of fish and insects, including ones that need clean water. **Lower quality water bodies** have **fewer species** overall, and most tend to be tolerant of pollution.

Which of these do you think displays the **best** water quality?



○ ○ ○

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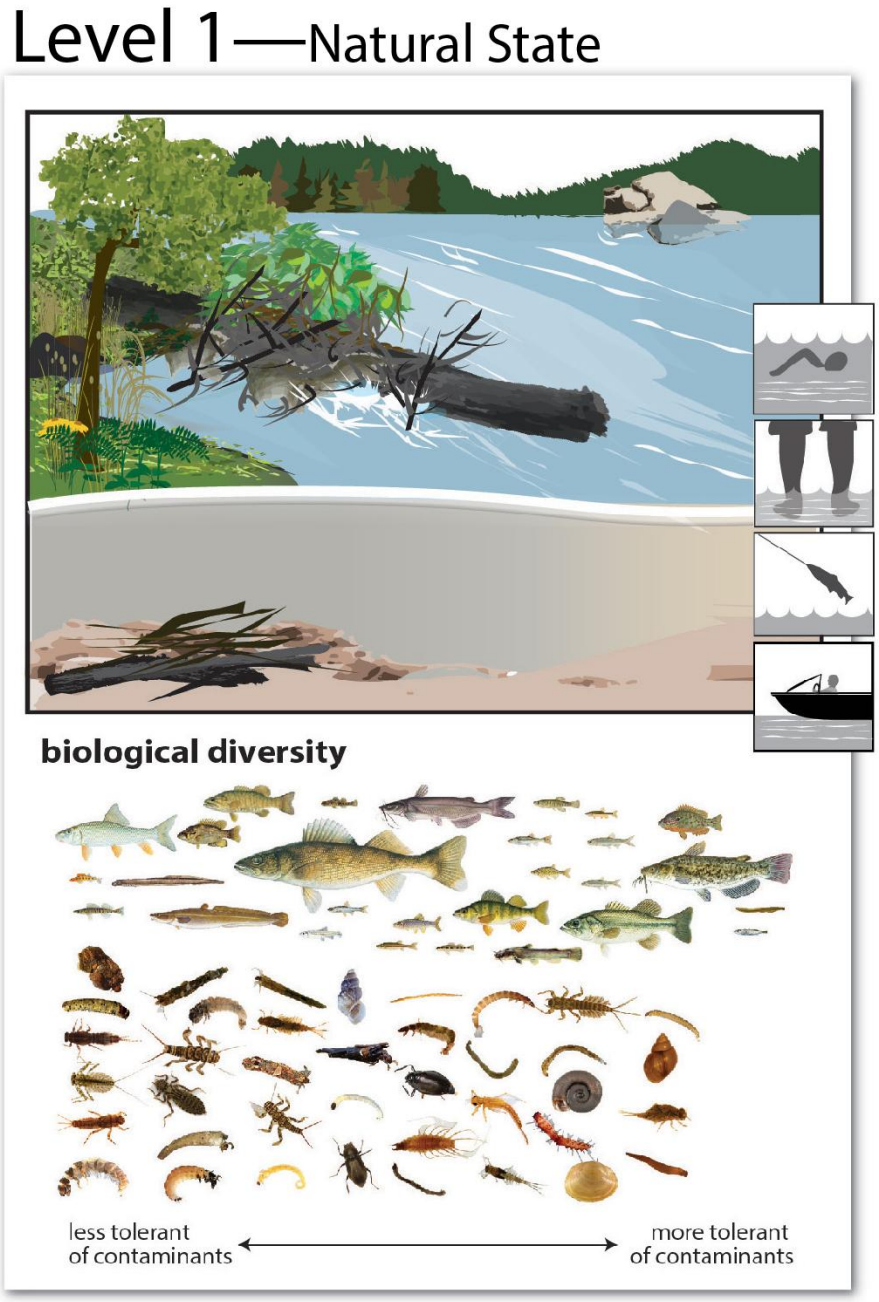
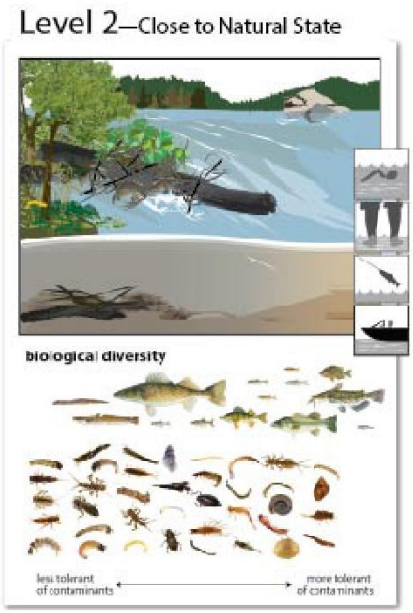
We will combine the appearance, supporting uses, and biodiversity scale in a single image to describe the different water quality levels. This graphic shows a Level 1 (Natural State) water body and a small Level 2 (Close to Natural State) graphic for comparison.





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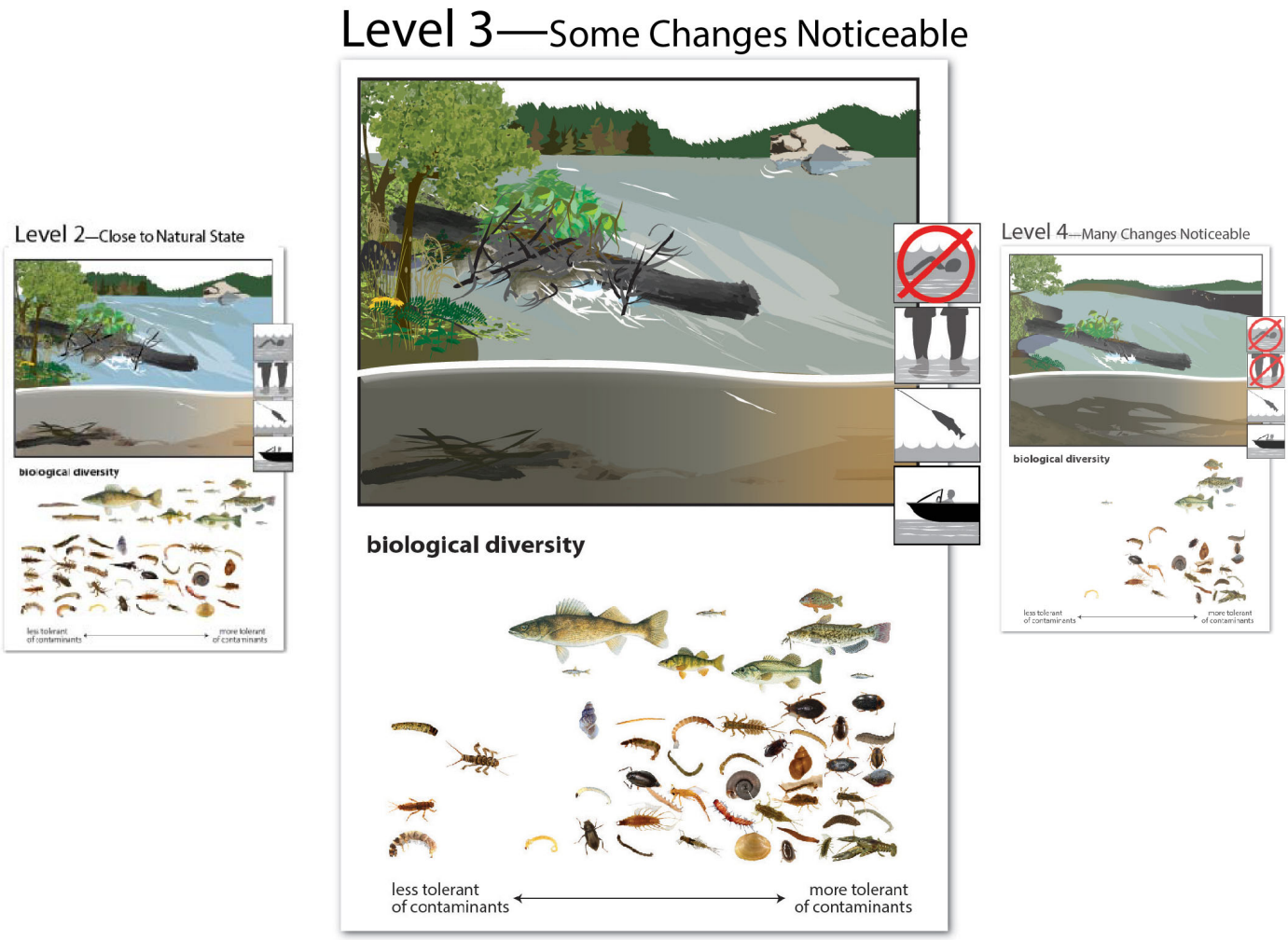
This graphic shows a Level 3 (Some Changes Noticeable) water body with smaller Level 2 (Close to Natural State) and Level 4 (Many Changes Noticeable) graphics for comparison.



←

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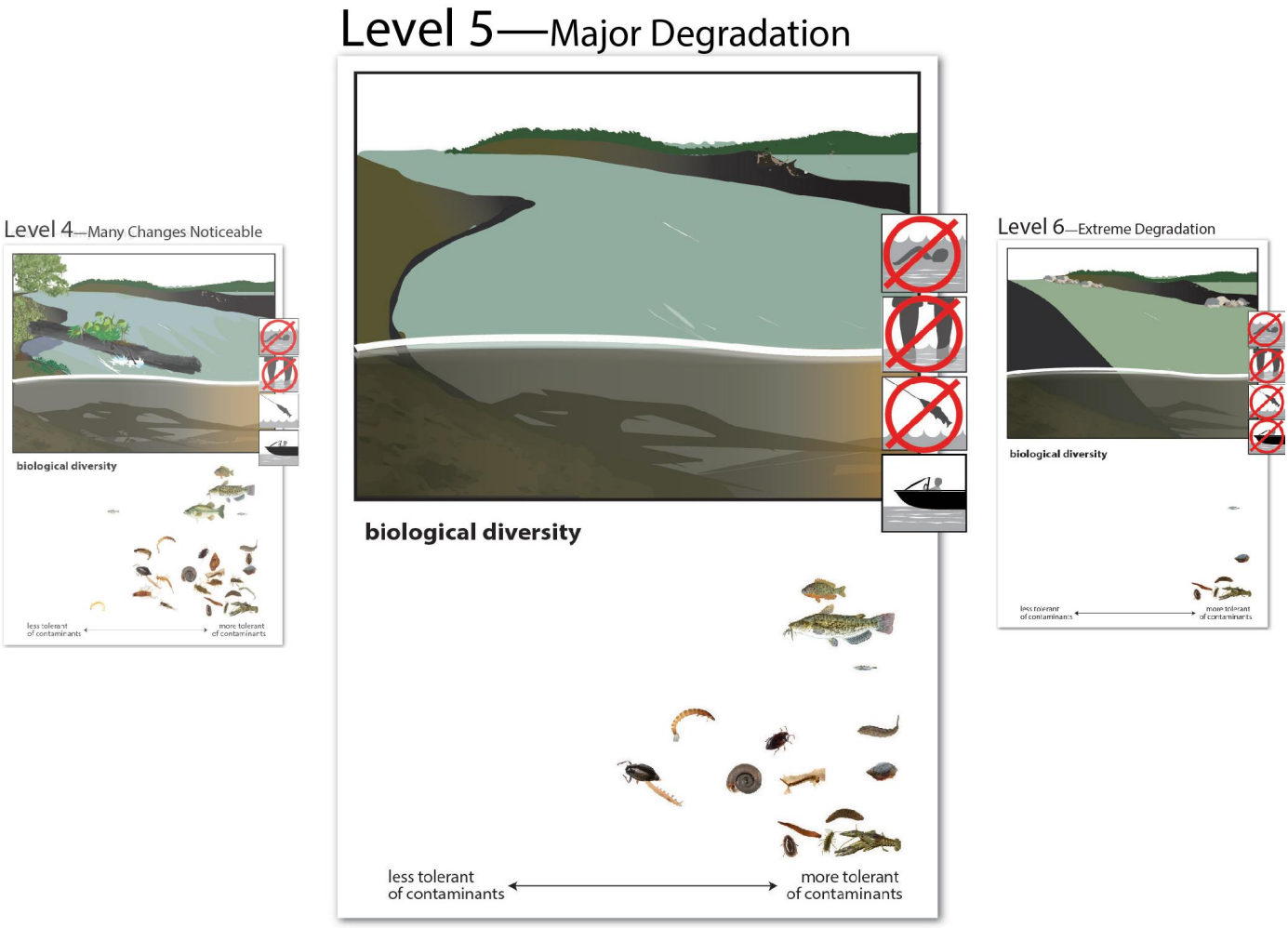
This graphic shows a Level 5 (Major Degradation) water body with smaller Level 4 (Many Changes Noticeable) and Level 6 (Extreme Degradation) graphics for comparison.



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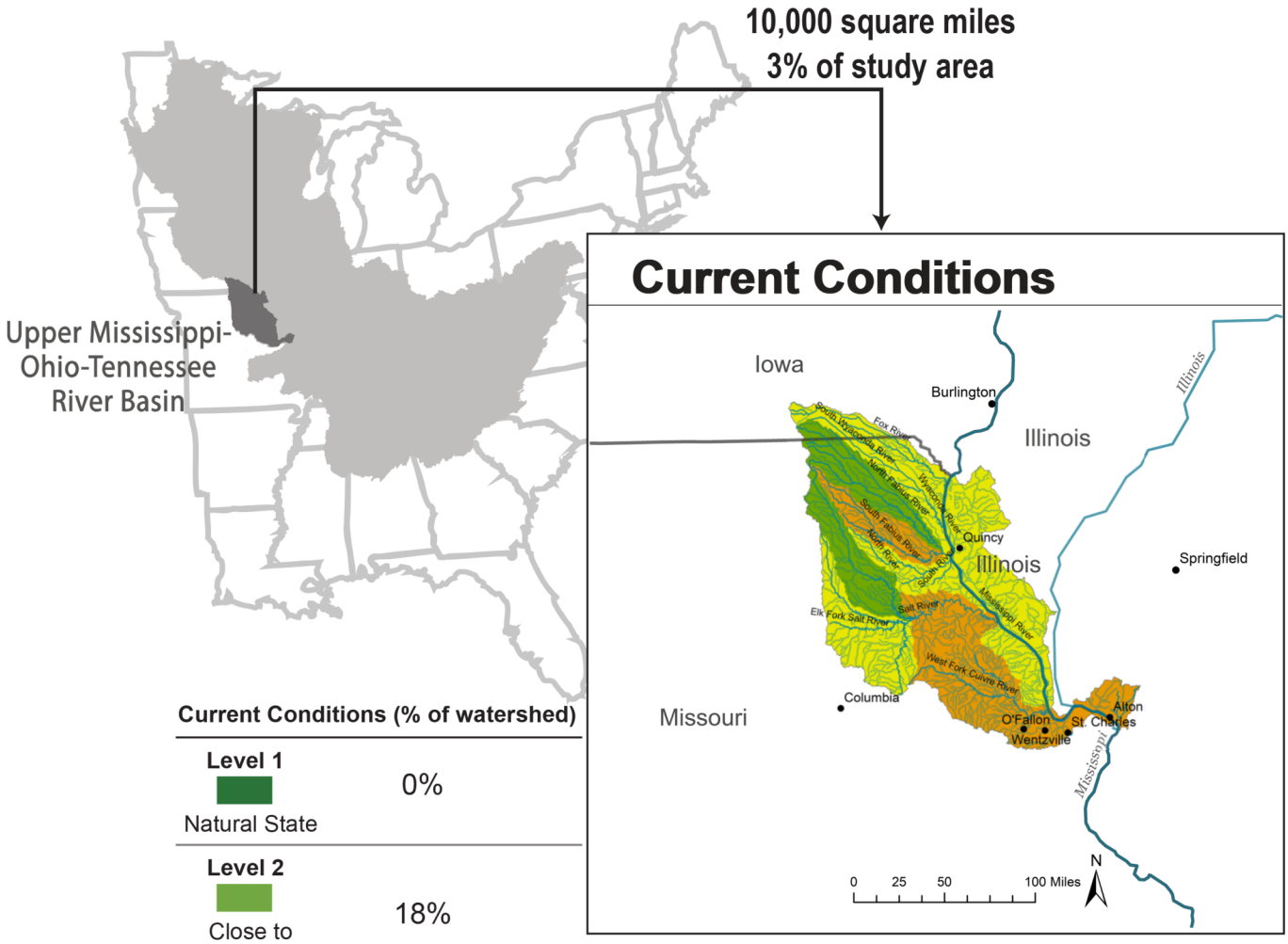
Water quality maps

This map shows how different levels of water quality at lakes, rivers, and streams are distributed in a particular watershed located in the Upper Mississippi, Ohio, or Tennessee River Basin. Based on the zip code you provided us, this watershed does **not** include your home.

We have data collected from many water quality monitoring stations. These data were used to determine the average water quality level for each of several sub-areas within the watershed.



Current Conditions (% of watershed)	
Level 1 Natural State	0%
Level 2 Close to Natural State	18%
Level 3 Some Changes Noticeable	49%
Level 4 Many Changes Noticeable	33%
Level 5 Major Degradation	0%
Level 6 Extreme Degradation	0%
Average Level	3.15

Please locate the city of **Quincy** (Illinois) on the map. According to the map, what is the water quality near Quincy?

- Level 1 - Natural State
- Level 2 - Close to Natural State
- Level 3 - Some Changes Noticeable
- Level 4 - Many Changes Noticeable
- Level 5 - Major Degradation
- Level 6 - Extreme Degradation

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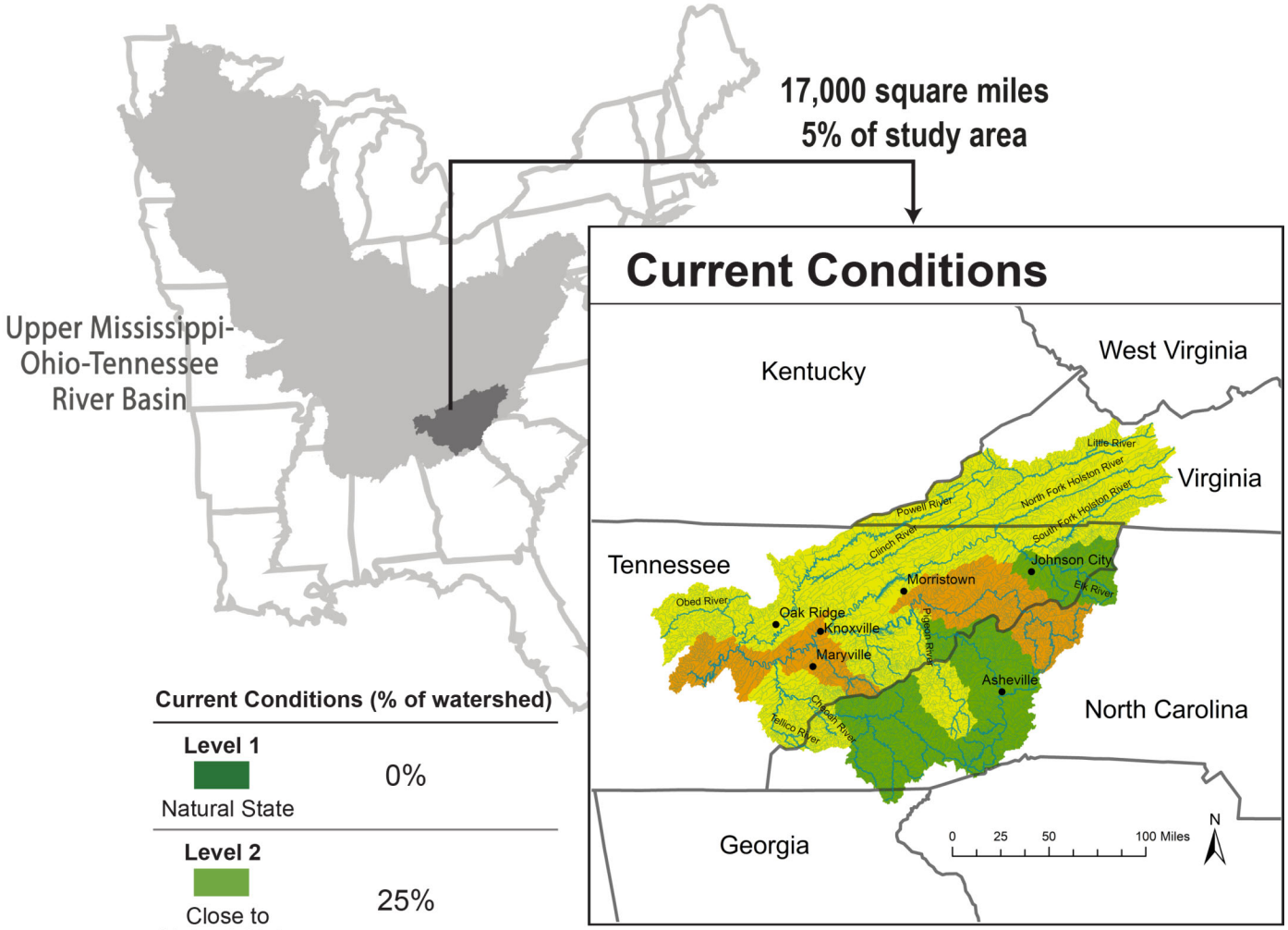
Water quality in your area

We will now provide information about water quality in your area, using the residential zip code you provided. We will show you a map and ask you to identify the water quality level near your home.

→

This map shows how different levels of water quality in streams, rivers, and lakes are distributed in **your watershed**. Your watershed is within our study region, which includes the the Upper Mississippi, Ohio, and Tennessee River Basins.

We have data collected from many water quality monitoring stations. These data were used to determine the average water quality level for each of several sub-areas within the watershed.



Current Conditions (% of watershed)	
Level 1 Natural State	0%
Level 2 Close to Natural State	25%
Level 3 Some Changes Noticeable	57%
Level 4 Many Changes Noticeable	18%
Level 5 Major Degradation	0%
Level 6 Extreme Degradation	0%
Average Level	2.93

We realize that your town or city may not appear on the map, but we ask you to locate where you live as best as you can. **According to the map**, what is the water quality near

your home?

- ○ Level 1 - Natural State
- ○ Level 2 - Close to Natural State
- ○ Level 3 - Some Changes Noticeable
- ○ Level 4 - Many Changes Noticeable
- ○ Level 5 - Major Degradation
- ○ Level 6 - Extreme Degradation

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How does the water quality level near your home compare with what you expected before seeing the map?

- ○ Worse than I expected
- ○ About what I expected
- ○ Better than I expected

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Part 3. Voting on water quality policies

Proposals are sometimes made for local, state, and federal governments to start new programs. Governments do not want to start a new program unless enough voters are willing to pay for it.

Today, we will give you information about possible policies **to improve water quality**, so that you can share your opinion about them.

After we tell you about the policies, we will ask you to vote for or against them, and we will ask you why you voted the way you did.

We want to know the opinions of people who think a new policy is needed, and the opinions of people who think a new policy is not needed.

We will ask you about programs that can improve water quality in different parts of the Upper Mississippi, Ohio, and Tennessee River Basins, including where you live.

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How would a new policy improve water quality?

Policies to improve water quality require reductions in the amount of pollution released into lakes, rivers, and streams from different sources. Some examples include:

- Improved treatment of wastewater (sewage) before releasing it into waterways
- Changing the way rainfall is managed when land is altered for development
- Reducing the amount of fertilizer, soil, and animal waste that runs off of farmland
- Setting stricter limits on pollution that industrial sources release into waterways

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How would a new policy be paid for?

A new policy would be funded through an increase in your federal, state, and local taxes. The increase would be set up so that households cannot avoid payment or alter the amount they are supposed to pay. The tax increases would last for five years and would end after that time. To be sure that the funds are used only for their intended purpose, the funds will be administered like the Pittman-Robertson Federal Aid in Wildlife Restoration Act (16 U.S. C. 669-669i; 50 Stat. 917) which provides funding for wildlife habitat and legislatively dictates that the funds cannot be diverted to other uses. The funds would be used to maintain improvements even after the tax ends in five years.

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Voting on policy proposals

There are valid reasons you might vote for or against any proposal. Some people may vote for a proposal because they feel the water quality changes are worth their cost.

Some people will vote against a proposal because

- they feel the water quality changes are not worth their cost, or
- they prefer to spend the money on something else instead, or
- they have some other reason to vote against the plan.

Some people may like a proposal, but still vote against it because they feel

- the changes in water quality are too small, or
- there are not enough changes in areas they care about.

Whatever your reasons, a vote for or against a proposal is legitimate. We need you to consider the water quality changes and their cost, and then decide what is best for you.

← →

We will now present you with several proposals, and ask you to vote yes or no on each of them. We are presenting you with multiple proposals because many policy options are available. **Please consider each proposal separately from the others.**

Voting results will be shared with public authorities, and these authorities may consider this information when determining future environmental policy decisions.

← →

In the next three to four proposals, we will ask how you would vote on water quality changes in **a non-local watershed**. This is different from your local watershed and does **not** include your home.

Specifics about the water quality changes, and the cost to your household in additional taxes, will vary across the proposals.

You will be asked to vote on a total of six to ten proposals in this survey.

→

You will now be asked to vote on a specific policy. For us to interpret your votes correctly, we ask that you:

- Consider all characteristics of the proposal we present to you (impacted region, changes in water quality, cost to your household).
- Vote on the proposal based only on the information provided within that proposal (and not information in other proposals).
- Vote as if the proposal is the **only one being considered**.

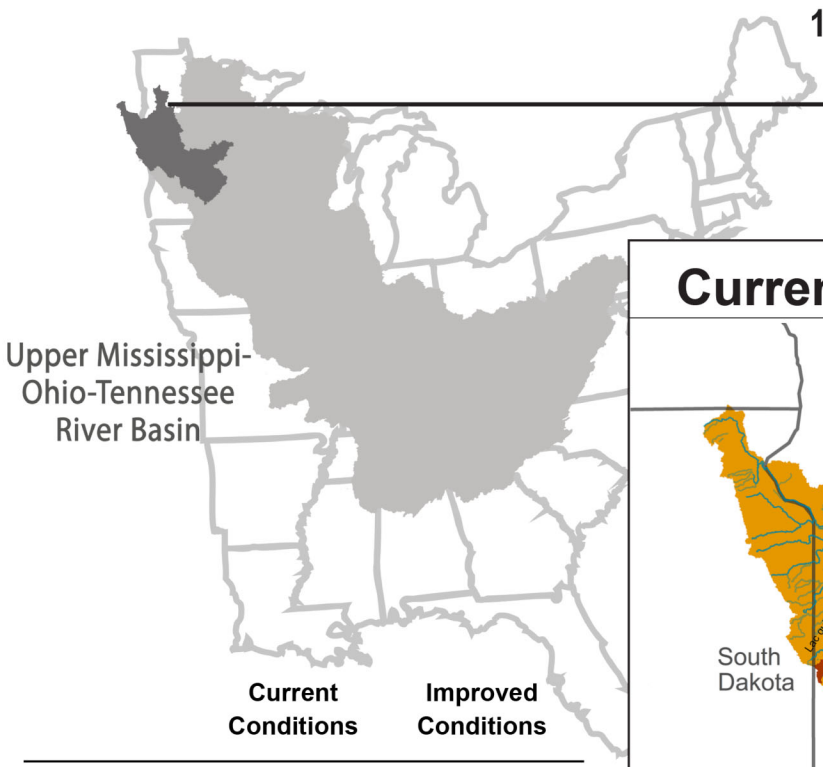
If you follow these directions, we will be able to know how you would vote on this specific proposal if it appeared in a future election.

→

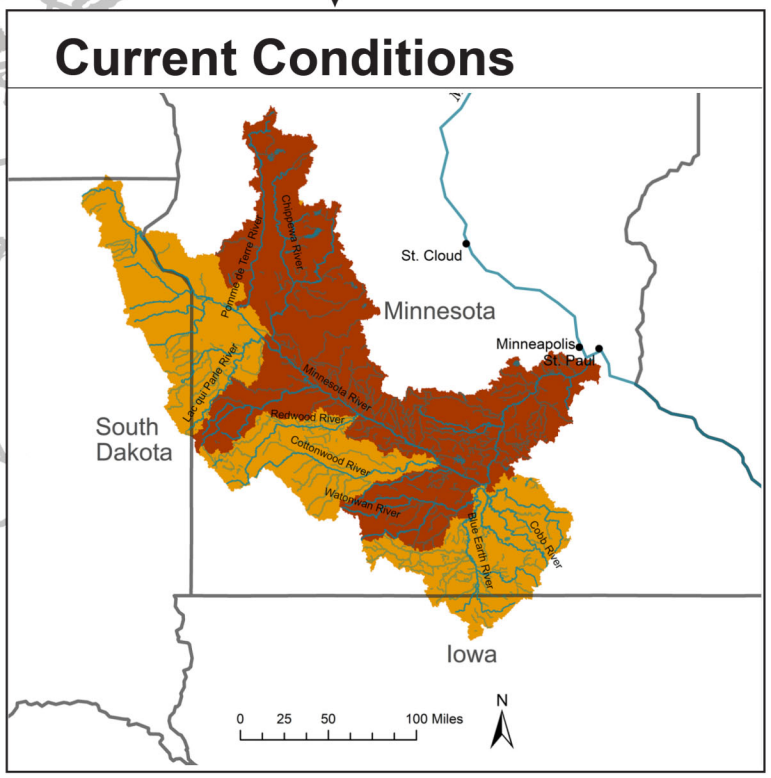
Policy proposal No. 1

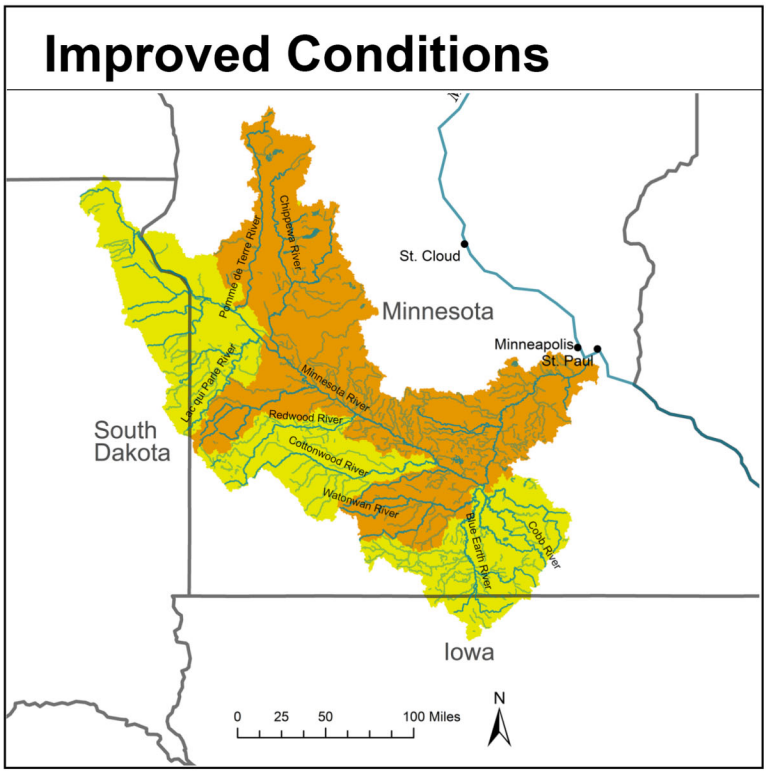
The water quality changes described below would occur only in the highlighted policy region on the maps.

Improvements would occur gradually, reaching the new conditions by about 2026, and then remain at the new levels. The tax increase would last 5 years, and be in place from 2022 to 2026.

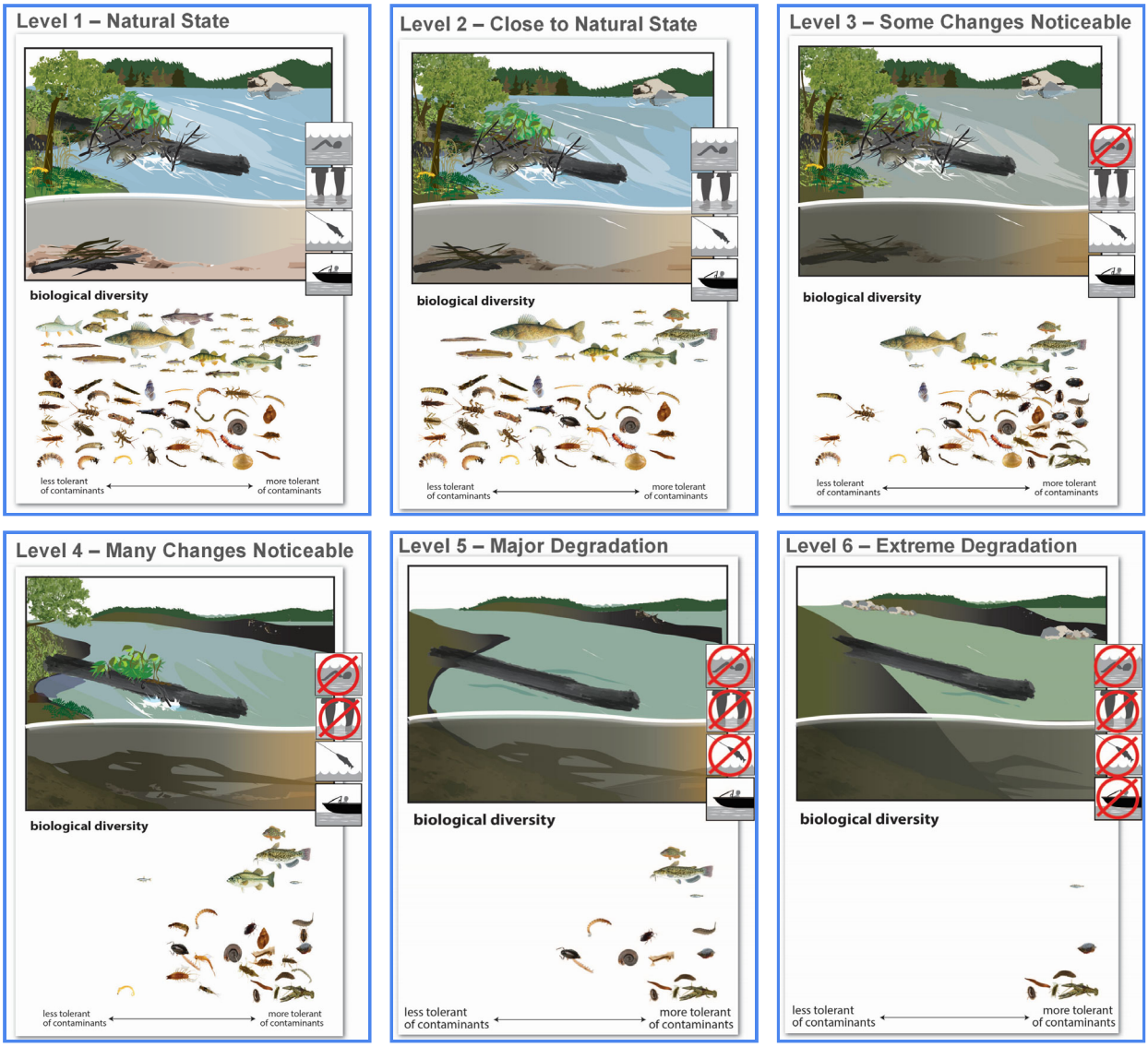


	Current Conditions	Improved Conditions
	(% of watershed)	
Level 1 Natural State	0%	0%
Level 2 Close to Natural State	0%	0%
Level 3 Some Changes Noticeable	0%	47%
Level 4 Many Changes Noticeable	47%	53%
Level 5 Major Degradation	53%	0%
Level 6 Extreme Degradation	0%	0%
Average Level	4.53	3.53





Below are the water quality graphics. You can enlarge an image by clicking on it (this will open a new tab/window -- make sure NOT to close the survey).



Policy Summary

Description of policy region: A **non-local** watershed, which does not include your home.
Size of policy region: 17,000 square miles.

	No policy (current conditions)	Proposed policy (improved conditions)

	No policy (current conditions)	Proposed policy (improved conditions)
Description of change	None	All areas within region improve by one level
Water quality throughout region (average)	4.53	3.53
Increase in taxes to your household (per year, for the next 5 years)	None	$100

Advisory Referendum

Should the authorities implement this proposed policy to improve water quality?

- I vote "No" (against the proposed policy)
- I vote "Yes" (for the proposed policy)

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Please think about why you voted the way you did for the proposals. With this in mind, please indicate your level of agreement with the following statements.

	Disagree	Neutral	Agree
I voted as if my household would face the stated costs.	○	○	○
I am certain that I voted the same way I would if I were voting in a public election.	○	○	○
I voted on each proposal without any consideration of the other proposals.	○	○	○
I voted as if the policies would achieve the stated improvements in water quality.	○	○	○
I voted as if the information collected in this survey will be used to inform policy makers.	○	○	○

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When deciding whether to vote yes or no on the water quality proposals, how much did each of the policy features influence your votes?

	Little or no effect	Moderate effect	Large effect
The cost of the policy in additional taxes.	○	○	○
The size of the region affected by the policy.	○	○	○
Whether the policy improved water quality near my home.	○	○	○
Improvements in the water quality level.	○	○	○

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How certain are you about your votes on the water quality proposals?

Uncertain	Somewhat uncertain	Somewhat certain	Certain
O	O	O	O

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When voting on the policy proposals, how did you imagine that the tax increase would be distributed across households?

- ○ Households with higher incomes would pay more in taxes than lower income households.
- ○ No households would have to pay more in taxes.
- ○ All households would pay about the same amount in taxes.
- ○ I did not think about this when voting.

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When voting on the policy proposals, which households did you imagine would face the tax increase?

- ○ All households living in the Upper Mississippi, Ohio, and Tennessee River Basins, regardless of the where the water quality improvements would take place.
- ○ Only households living in or near areas where water quality would improve.
- ○ No households would have to pay more in taxes.
- ○ All households in the U.S.
- ○ I did not think about this when voting.

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To learn more about your general thoughts towards the water quality proposals you voted on, please select **all** statements that apply to you.

- [ ] I believe that new policies are important for the well-being of people.
- [ ] I am not worried about water quality.
- [ ] I believe that new policies are important for the well-being of wildlife and plants.
- [ ] I did not read the information on the proposals carefully.
- [ ] I did not have enough information to make comfortable decisions.
- [ ] I would like to see water quality improved, but I cannot afford to pay much for it.
- [ ] I believe that my taxes are too high already and am against any initiative that will increase taxes.
- [ ] I believe that funding a new water quality policy is well worth it to me.
- [ ] It was difficult for me to decide how to vote.
- [ ] Other (please specify):

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Thinking about this survey and what you read, did the survey push you to vote one way or another, or did it let you make up your mind about which way to vote on the various proposals?

- ○ The survey pushed me to vote against new water quality policies
- ○ The survey let me make up my own mind
- ○ The survey pushed me to vote in favor of new water quality policies

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Part 4. About your household, recreation activities, and COVID-19

In this final part of the survey, we will ask about your household to help us better understand your views on water quality.

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Are you currently a member of an environmental organization?

- Yes
- No

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How long has your household been living at its current address?

- ○ Less than 2 years
- ○ 2 to 5 years
- ○ 6 to 10 years
- ○ 11 to 20 years
- ○ More than 20 years

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When you decided to live in your current house or apartment, did you consider the water quality in nearby streams, rivers, or lakes?

- ○ Yes
- ○ No
- ○ I did not choose my current location

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When you decided to live in your current house or apartment, did you consider the quality of drinking water from your public drinking water source or private well?

- ○ Yes
- ○ No
- ○ I did not choose my current location

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In a typical year, do you take one or more trips to visit streams, rivers, or lakes with the main purpose of participating in water-based recreation activities (e.g., boating, swimming, walking, etc.)?

- ○ Yes
- ○ No

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In a typical year, what is the **farthest** you travel (one way) with the main purpose of participating in water-based recreation activities at a stream, river, or lake?

- ○ Less than 25 miles
- ○ 25 to 49 miles
- ○ 50 to 99 miles
- ○ 100 to 149 miles
- ○ 150 to 500 miles
- ○ More than 500 miles

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Please think about your most recent trip to a stream, river, or lake. What did you visit?

- ○ A stream, creek, or small river
- ○ A large river
- ○ A lake

On this trip which activities did you do? Please select **all** that apply.

- ☐ Fishing
- ☐ Motorized boating
- ☐ Wildlife watching
- ☐ Non-motorized boating
- ☐ Swimming
- ☐ Walking, running, and/or cycling near the shore
- ☐ Relaxing near the shore
- ☐ Other (please specify:)

On this trip, how far did you travel to get there (one way)?

- ○ Less than 25 miles
- ○ 25 to 49 miles
- ○ 50 to 99 miles
- ○ 100 to 149 miles
- ○ 150 to 500 miles
- ○ More than 500 miles
- ○ I am not sure

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Using the level 1 (natural state) to level 6 (extreme degradation) categories, how would you rate the water quality at the place you visited? We are interested in your impression so please do not worry if your rating is not accurate.

- 1 - Natural
- 2 - Close to Natural
- 3 - Some Changes Noticable
- 4 - Many Changes Noticable
- 5 - Major Degradation
- 6 - Extreme Degradation
- I am not able to make a guess about the quality level

In deciding where to go on this recent trip, how important was water quality to your decision?

- Not important
- Somewhat important
- Very important

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We would like to understand how the COVID-19 pandemic has affected your use and enjoyment of local lakes rivers, and streams over the past few months.

Has the pandemic affected your household income?

- ○ No, my income has not been affected much
- ○ Yes, my income is lower because of the pandemic
- ○ Yes, my income is higher because of the pandemic

Has the pandemic changed how much free time you have available?

- ○ No, I have about the same amount of free time
- ○ Yes, I have less free time
- ○ Yes, I have more free time

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How have you changed your behavior with respect to visiting local streams, rivers, and lakes? (Please consider all waters that are within walking distance as well as those within 50 miles of where you live.)

- I have spent more time visiting local lakes, rivers, and streams
- I have spent less time visiting local lakes, rivers, and streams
- I haven't changed the amount of time I have spent visiting local lakes, rivers, and streams

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What are the reasons for your decreased visits? Check ALL that apply

- [ ] I am concerned about the risk of interacting with others who may expose me to COVID-19
- [ ] My child care and/or job situation changed so I have less time to do so
- [ ] Other

About how many fewer visits per month have you made to local lakes, rivers, and streams since the pandemic began?

- ○ 1 to 2
- ○ 3 to 5
- ○ 5 to 10
- ○ over 10

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You have reached the end of the survey. We are interested in any feedback you have. If you have any comments on this survey, please provide them here.

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