RIVERS ARE ALIVE

K-12 ENVIRONMENTAL EDUCATION PROGRAM
Rivers Are Alive is a K-12 environmental education program offered in partnership by the St. Croix River Association and the St. Croix National Scenic Riverway throughout the St Croix watershed in every season. This whole school model connects students to this National Park and its watershed in a learning progression. Rivers Are Alive offers engaging, standards aligned, science activities. We believe in the benefits of reconnecting with students throughout their school career to provide a holistic approach to environmental education so that rivers are always alive and present in their learning. We also believe in empowering educators to be river and watershed experts through valuable on-river workshops and training.

To learn more…

Contact Jaime Souza, SCRA Education and Outreach Coordinator at 715-483-3300 or jaimess@scramail.com

To learn more and request a Rivers Are Alive program online: https://www.stcroixriverassociation.org/learn-explore/rivers-are-alive/
RIVERS ARE ALIVE (GRADES K - 2)

Learners explore what a river is by investigating underwater life, the life above the river and at its edges.

BIG IDEAS

- Rivers are more than a moving, stream of water
- Rivers are a home (habitat) to many plants and animals
- Rivers are a highway for fish and migrating birds
- The forests along the river are home to many plants and animals
- Rivers Are Alive in every season

IN THE CLASSROOM OR SCHOOL YARD

- Let’s Go Snowshoeing (January - March)
- My River Community

ON THE RIVER

- Let’s Go Snowshoeing (January - March)
- Observation Olympics
- Visitor Center Scavenger Hunt & Film (At the Namekagon and St. Croix River Visitor Centers only)
- What is a River?

Recommended Teacher Guided Pre Activities

- Mapping my National Park

Recommended Teacher Guided Post Activities

- Where the Wild Things Art
- The Written River
Learners discover their personal connections to the river ecosystem while experiencing the dynamic life that lives there.

**BIG IDEAS**
- Rivers are full of diverse aquatic and terrestrial life
- Animals and plants are adapted to live in their river home
- The living and nonliving parts of a river ecosystem are connected
- Humans are connected by rivers
- Humans have an impact on and can protect rivers

**IN THE CLASSROOM OR SCHOOL YARD**
- Let's Go Snowshoeing (January - March)
- Out of Place? All About Aquatic Invasive Species
- River Connections in the Classroom
- What is a Watershed?

**ON THE RIVER**
- The Flooded Forest
- Let's Go Mucking
- Let's Go Snowshoeing (January - March)
- Visitor Center Scavenger Hunt (At the Namekagon and St. Croix River Visitor Centers)
- What is a River?

**Recommended Teacher Guided Pre Activities**
- *Macroinverte-What?*
- *Mapping My National Park*

**Recommended Teacher Guided Post Activity**
- *Macroinverte-Wow!*
- *River Research – The River Wild*
- *Snowshoe Science*
- *The Written River*
WE NEED HEALTHY RIVERS (GRADES 6 - 8)

Learners explore the interconnectedness of the river ecosystem and the role humans play in maintaining its health.

**Big Ideas**
- Rivers are full of diverse aquatic and terrestrial life
- Humans have an impact on and can protect water quality
- Invasive species, introduced by humans, can often disrupt ecosystem balance
- Biologists study aquatic and terrestrial ecosystems to learn about animal behavior, life styles and population health (even in the winter)

**In the Classroom or School Yard**
- Conservation Careers (1/2 hour Conservation Careers presentation)
- Into the Weeds (Invasive Species Exploration)
- River Connections in the Classroom
- Snowshoe Sleuths (January - March)
- The Watershed Game

**On the River**
- Let’s Go Mucking
- Let’s Go Paddling (Custom program)
- Our Forest Biome Home
- Snowshoe Sleuths (January - March)
- What’s In a River? (Water Quality Testing)

**Recommended Teacher Guided Pre Activity**
- Macroinverte-What?
- Mapping My National Park
- A Training for Tracking

**Recommended Teacher Guided Post Activity**
- Macroinverte-Wow!
- River Research – Plant Power
- The Written River
WE ARE RIVER RESPONSIBLE (GRADES 9 - 12)

Students are engaged in citizen science, career path exploration, and river research

**BIG IDEAS**

- We all have an impact on and can protect water quality
- Invasive species and pollutants disrupt ecosystem balance
- Scientists are always actively studying the St. Croix National Scenic Riverway
- There are important career and volunteer opportunities in conservation
- There are threats to the river, but we can be part of the solution

**IN THE CLASSROOM OR SCHOOL YARD**

- Conservation Careers (1/2 hour Conservation Careers presentation)
- Into the Weeds (Invasive Species Exploration)
- River Connections in the Classroom
- Snowshoe Sleuths (January - March)
- The Watershed Game

**ON THE RIVER**

- Let’s Go Mucking
- Let’s Go Paddling (Custom program)
- Forest Futures (Coming soon…)
- Snowshoe Sleuths (January - March)
- What’s In a River? (Water Quality Testing)

**Recommended Teacher Guided Pre Activity**

- Macroinverte-What?
- Mapping My National Park
- A Training for Tracking

**Recommended Teacher Guided Post Activity**

- Macroinverte-Wow!
- River Research – Wild and Scenic Forever
- The Written River
At the River
FIELD TRIPS TO THE ST. CROIX NATIONAL SCENIC RIVERWAY

Trego, WI
Namekagon River Visitor Center
For northern watershed schools, a visit to the Namekagon River National Park Visitor Center makes for a fun and educational field trip! Students will explore the Visitor Center, watch a fantastic film and discover the underwater life in the Namekagon River.

St. Croix Falls, WI
St. Croix River Visitor Center
For central and southern watershed schools, a visit to the St. Croix National Scenic Riverway Visitor Center makes for a fun and educational field trip! Students will explore the Visitor Center, watch a fantastic film and discover the wild and scenic St. Croix River.

Custom Field Trip
Rivers Are Alive in Your Community
Rivers Are Alive will travel! We can meet your class at a tributary or river landing near you or even at a local park or preserve. Students will experience how their community is connected to our watershed and to this National Park.

MN AND WI STATE PARKS
We work closely with MN and WI state park in the St. Croix River watershed to bring students to all of the state parks in the St. Croix River watershed. Hiking and hands-on learning are an integral part of these state park adventures!
Stillwater, MN
Wild River Journey
Students will experience the beauty of the St. Croix River by paddleboat in scenic Stillwater, MN. Throughout the journey, students will be engaged in hands-on learning stations that introduces them to the geology, human history, and flora and fauna of the St. Croix.

Field Trip Details:
Wild River Journey
Cost: $7/student
April, May, Sept & Oct
You pick your date, we schedule the riverboat!
2 hour experience
Morning & Afternoon cruises

Let’s Go Paddling
Jr High and HS Students Only
We will organize a custom day or overnight paddling trip for middle and high school students in the watershed, May – September. Program emphasis: river systems, flood plains, flora and fauna, and leadership.

ON THE RIVER ADVENTURES
Being on the river offers students a different and unique perspective. Your students will experience the wild and scenic qualities of the St. Croix National Scenic Riverway. Take your students on a National Park adventure!
**Science**

**Classroom Connections**
We will bring the river to life for your students in the classroom. Students will explore the interconnectedness of their local river ecosystem discovering the animals that make their home here, and then work together to build an ecosystem model.

**Science**

**Watershed Ed**
Students will define what a watershed is, build their own watershed model, recognize how humans impact the watershed by testing a watershed model, and ultimately learn how they can care for the water in their community which will protect this National Park.

**Science**

**Invasive Species**
Invasive species may forever change the way we live our lives. Students will identify how invasive species affect our economies and ecosystems, and the role we all can play to prevent their further spread through ID, monitoring and taking action.

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**Fourth Grade National Park Pass**

**EVERY KID IN A PARK**

Fourth grade teachers, we can help your students receive their Every Kid in a Park Pass which gets them into National Park and other Federal sites for free! Learn more: [https://everykidinapark.gov/](https://everykidinapark.gov/)
# Winter in the Watershed

## SNOWSHOE ADVENTURES

### National Park

**Winter Field Trip**

The St. Croix National Scenic Riverway is home to many great winter trails. We will meet your class at one of these trails to snowshoe as part of our *Let’s Go Snowshoeing* or *Snowshoe Sleuths* class.

### Your School

**Snowshoe Fun at School**

We have a variety of snowshoes that will fit students in grades K-12. Choose from our basic *Let’s Go Snowshoeing* class for grades K-5 or our *Snowshoe Sleuths* class for grades 6 - 12.

### State Park

**Winter Field Trip**

We will meet your class at your favorite Minnesota or Wisconsin State Park in the St. Croix River watershed. There are many great trails to explore and signs of wildlife to discover during winter in the watershed.

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### RIVERS ARE ALIVE...EVEN IN WINTER

The *Let’s Go Snowshoeing* class for grades K – 5 introduces students to snowshoeing through hiking, games, and sensory experiences.

The *Snowshoe Sleuths* class for grades 6 - 12 fosters discovery and exploration as students actively search for winter wildlife signs and tracks.
Step 1 – Request Program
Email us for more info: info@scramail.com

Step 2 – Complete online form
1. Complete online request form:
   https://www.stcroixriverassociation.org/learn-explore/rivers-are-alive/rivers-are-alive-program-info-request/
2. Press submit.
3. We will contact you to coordinate your program.

Program Costs
At the River – FREE, you cover transportation costs
On the River - $5 - 7 per student plus transportation

Classroom Presentation – FREE
Snowshoe Program – FREE

Some transportation scholarships available, please ask if your school has a need.

Donations of $2 - $3 per student are encouraged to ensure this program continues for long into the future.

"We can’t thank you enough for the learning you facilitated with our students. We were all so impressed and the students were so engaged. We will definitely be contacting you next fall for a similar experience. THANK YOU!" – River Crest Elementary Teacher

K-12 ENVIRONMENTAL EDUCATION AND NATIONAL PARK FIELD TRIP PROGRAM
https://www.stcroixriverassociation.org/learn-explore/rivers-are-alive/
Classroom Connections

**Grades K – 2**

**LET’S GO SNOWSHOEING (JAN – MARCH)**

Essential Understanding
Let’s find out why people have been using snowshoes for over 6,000 years by putting on and practicing using snowshoes. Students will be introduced to snowshoeing through experiential learning, exploration and snow fun.

**MY RIVER COMMUNITY**

Essential Understanding
Rivers Are Alive! They are home to many amazing animals and plants. We will introduce students to the animals that are part of the river community in their community and offer the opportunity for observation of animal parts, activity station collaboration and discovery.

**Grades 3 – 5**

**RIVERS CONNECTIONS IN THE CLASSROOM**

Essential Understanding
We can learn a lot by observing the animals that live near us, even if we are only observing animal objects. In this class, we will bring the river to your classroom. Students will step into the shoes of scientists and participate in observation, collaboration, and team teaching. Finally, they will discover the interconnectedness of a river ecosystem, in which humans are part of, by creating an ecosystem model.

**LET’S GO SNOWSHOEING (JAN – MARCH)**

Essential Understanding
Let’s find out why people have been using snowshoes for over 6,000 years by putting on and practicing using snowshoes. Students will be introduced to snowshoeing through experiential learning, exploration and snow fun.

**OUT OF PLACE?**

Essential Understanding
Have you ever been the new kid and felt a little out of place? Sometimes in nature, animals and plants are introduced to an ecosystem where they are considered out of place, and they have to figure out a way to thrive and survive. And sometimes, those out of place animals and plants figure out a survival strategy that works too well.
and they make it hard for the animals and plants that have always lived in that ecosystem to survive. Students will participate in an interactive game to explore this idea.

**WHAT IS A WATERSHED?**

**Essential Understanding**

The ponds, streams, creeks, rivers and lakes in our communities are full of life, and they are all connected to each other. Students will be introduced to watersheds by constructing their own watershed and experimenting with a watershed model. They will understand that we all live in a watershed and are connected by them, and how we care for the water in our communities can positively or negatively impact our downstream neighbors and the quality of water within a watershed.

**Grades 6 - 12**

**CONSERVATION CAREERS**

**Essential Understanding**

There are many opportunities to pursue a career in natural resource conservation and protection. Students will explore conservation career paths during this brief, half hour presentation.

**INTO THE WEEDS**

**Essential Understanding**

Invasive species may forever change the way we live our lives. From gardeners to hikers, farmers to landowners, humans are impacted by these fast-spreading species. Students will identify how terrestrial invasive species affect our economies and ecosystems, and the role we all can play to prevent their further spread through plant ID and problem solving activities.

**RIVERS CONNECTIONS IN THE CLASSROOM**

**ESSENTIAL UNDERSTANDING**

We can learn a lot about how animals are adapted to survive in their habitat by observing their structures and behaviors, even if we are only observing animal objects. In this class, we will bring the river to your classroom. Students will step into the shoes of scientists and participate in observation, collaboration, and team teaching. Finally, they will discover the interconnectedness of an animal's structures and behaviors and the greater river ecosystem by creating an ecosystem model.

**SNOWSHOE SLEUTHS (Jan - March)**

**Essential Understanding**

Winter is a cold and quiet time of the year, but animal life is active all winter long. Many animals migrate or hibernate during the winter months but many animal species are toughing out the cold weather and we can tell who is still around by the clues and signs of life they leave in the snow. Students will put on snowshoes and discover how rivers are alive, even in the winter by searching for animal signs and learning animal tracking basics.

**THE WATERSHED GAME**

**Essential Understanding**

The Watershed Game is an interactive, educational tool created by the University of MN Extension and Minnesota Sea Grant that helps individuals understand the connection between land use and water quality. Participants learn how a variety of land uses impact water and natural resources, increase their knowledge of best management practices (BMPs), and learn how their choices can prevent adverse impacts. Participants apply the tools of plans, practices, and policies that help them achieve clean water goals for protection and restoration while providing for community growth.
Field Trip Fun

Grades K – 2

LET’S GO SNOWSHOEING (JAN – MARCH)

**Essential Understanding**

Let’s find out why people have been using snowshoes for over 6,000 years by putting on and practicing using snowshoes. Students will be introduced to snowshoeing through experiential learning, exploration and snow fun.

OBSERVATION OLYMPICS

**Essential Understanding**

Our eyes are not the only tool we can use to make observations of the natural world. We can use all five of our senses to experience and explore nature...and it can be fun! This fast paced, hands-on class makes observation fun. When we are actively observing like scientists, one could argue that observation could even be an Olympic sport!

VISITOR CENTER SCAVENGER HUNT

**Essential Understanding**

We do not have to travel too far to visit a National Park or Monument. An interactive scavenger hunt during your field trip to the Namekagon or St. Croix Visitor Center will inspire your students to learn more about this incredible Riverway. Students will also view a short film that tells the story of the St. Croix and how it became designated as a Wild and Scenic River through the National Wild and Scenic Rivers Act.

WHAT IS A RIVER?

**Essential Understanding**

Learners will consider that how a river is more than just a flowing, moving stream of water. It is a home and highway for many living organisms.

Grades 3 – 5

THE FLOODED FOREST

**Essential Understanding**

Along the banks of the St. Croix River, beneath the shimmering leaves of silver maple trees, lives a special community of creatures. These organisms have been shrouded in mystery, until now! Students will become science sleuths, using magnifying lenses, identifying birds, and using their observation skills to untangle the ecosystem web of this fascinating place.

LET’S GO MUCKING

**Essential Understanding**

Sometimes it’s the smallest creatures in an ecosystem that tell us the most about its health. It doesn’t get any more hands-on than mucking in the river for macroinvertebrates. In this class, students become biologists and use a variety of tools and materials to collect, observe and identify the tiny creatures that are big indicators of how healthy a body of water is.
LET'S GO SNOWSHOEING (JAN – MARCH)

Essential Understanding
Let’s find out why people have been using snowshoes for over 6,000 years by putting on and practicing using snowshoes. Students will be introduced to snowshoeing through experiential learning, exploration and snow fun.

VISITOR CENTER SCAVENGER HUNT

Essential Understanding
We do not have to travel too far to visit a National Park or Monument. An interactive scavenger hunt during your field trip to the Namekagon or St. Croix Visitor Center will inspire your students to learn more about this incredible Riverway. Students will also view a short film that tells the story of the St. Croix and how it became designated as a Wild and Scenic River through the National Wild and Scenic Rivers Act.

WHAT IS A RIVER?

Essential Understanding
Grades 3-5 will investigate what causes a river to bend, move and flow and where they start and end. Students will learn about how the St. Croix and Namekagon Rivers were formed.

Grades 6 - 12

FOREST FUTURES

Essential Understanding
Coming soon...

LET'S GO MUCKING

Essential Understanding
Sometimes it’s the smallest creatures in an ecosystem that tell us the most about its health. It doesn’t get any more hands-on than mucking in the river for macroinvertebrates. In this class, students become biologists and use a variety of tools and materials to collect, observe and identify the tiny creatures that are big indicators of how healthy a body of water is.

LET'S GO PADDLING (MAY – SEPT)

Essential Understanding
There is nothing quite like getting students on the river! It is much easier to learn about and study the river ecosystem when you are paddling in a quiet, backwater channel. We will work with you to customize a paddling program for your students (there are size limitations) with a focus on river systems, floodplains, and river health.

OUR FOREST BIOME HOME

Essential Understanding
Different forests have different “looks” and “feels;” a forest in northern Minnesota or Wisconsin “look” and “feel” different than a forest might than a central or southern Minnesota or Wisconsin forest. In this class students will explore the layers and vegetative life of the forest.

SNOWSHOE SLEUTHS (Jan - March)

Essential Understanding
Winter is a cold and quiet time of the year, but animal life is active all winter long. Many animals migrate or hibernate during the winter months but many animal species are toughing out the cold weather and we can tell who is still around by the clues and signs of life they leave in the snow. Students will put on snowshoes and discover how rivers are alive, even in the winter by searching for animal signs and learning animal tracking basics.
WHAT’S IN THE RIVER?

Essential Understanding
Sometimes you can tell how healthy water is just by looking at it, but sometimes you can’t. In this class, students become hydrologists and use a variety of tools and materials to measure the quality of water.

DIY Pre and Post Activities

PRE ACTIVITY: MACROINVERTE-WHAT? (GRADES 3 – 12)

Essential Understanding
Macroinvertebrate is a mouthful and what even is a macroinvertebrate? This activity will prepare your students for their Let’s Go Mucking field trip with Rivers Are Alive.

PRE ACTIVITY: MAPPING MY NATIONAL PARK (ALL GRADE LEVELS)

Essential Understanding
Provide your students with a sense of place before their Rivers Are Alive experience. We will send you a grade level appropriate mapping activity so they are familiar with the St. Croix River and its watershed.

PRE ACTIVITY: A TRAINING FOR TRACKING (GRADES 6 – 12)

Essential Understanding
The winter landscape is a journal upon which animals write their stories. Students will view an interactive PowerPoint that quizzes them on their animal track expertise and trains them on track patterns prior to their Snowshoe Sleuths adventure.

POST ACTIVITY: MACROINVERTE-WOW! (GRADES 3 – 12)

Essential Understanding
This activity will close out your students’ Let’s Go Mucking experience in a powerful way. Students will discover how macroinvertebrates are indicators of water quality by using the Pollution Tolerance Index.

POST ACTIVITY: RESEARCH PROJECT (GRADES 3 – 12)

Essential Understanding

**Grades 3 – 5: The River Wild** – Research a wild animal that lives in the St. Croix National Scenic Riverway, and why it is an important member of the river ecosystem.

**Grades 6 – 8: Plant Power** - Research a tree that lives along the banks of the St. Croix National Scenic Riverway, and why it is an important member of the river ecosystem.

**Grades 9 – 12: Wild and Scenic Forever** - Research environmental threats to the St. Croix National Scenic Riverway and its watershed and work in teams to engineer possible solutions.

POST ACTIVITY: SNOWSHOE SCIENCE (GRADES 3 – 5)

Essential Understanding
Review the concept of biomimicry with your students (the imitation of the models, systems, and elements of nature for the purpose of solving complex human problems) and how snowshoes were designed after observation of animals like the snowshoe hare. Brainstorm other examples of biomimicry and how these items make our lives easier.
POST ACTIVITY: WHERE THE WILD THINGS ART (GRADES K – 3)

Essential Understanding
Just like we have a home that provides shelter, space, food and water, there are many creatures who make their home in a stream or river and this habitat provides everything they need to survive. Students will recreate one river or woodland animal’s habitat through art.

POST ACTIVITY: THE WRITTEN RIVER (GRADES K – 12)

Essential Understanding
From children’s literature (K – 3) to poetry (4 – 6) to conservationist writing to protect rivers (7 – 12), the words written about rivers live on in articles, books, and in the hearts and minds of people who love rivers. Give your students the opportunity to reflect upon their Rivers Are Alive experience through writing a simple St. Croix Haiku, exploring river literature and other forms of writing.