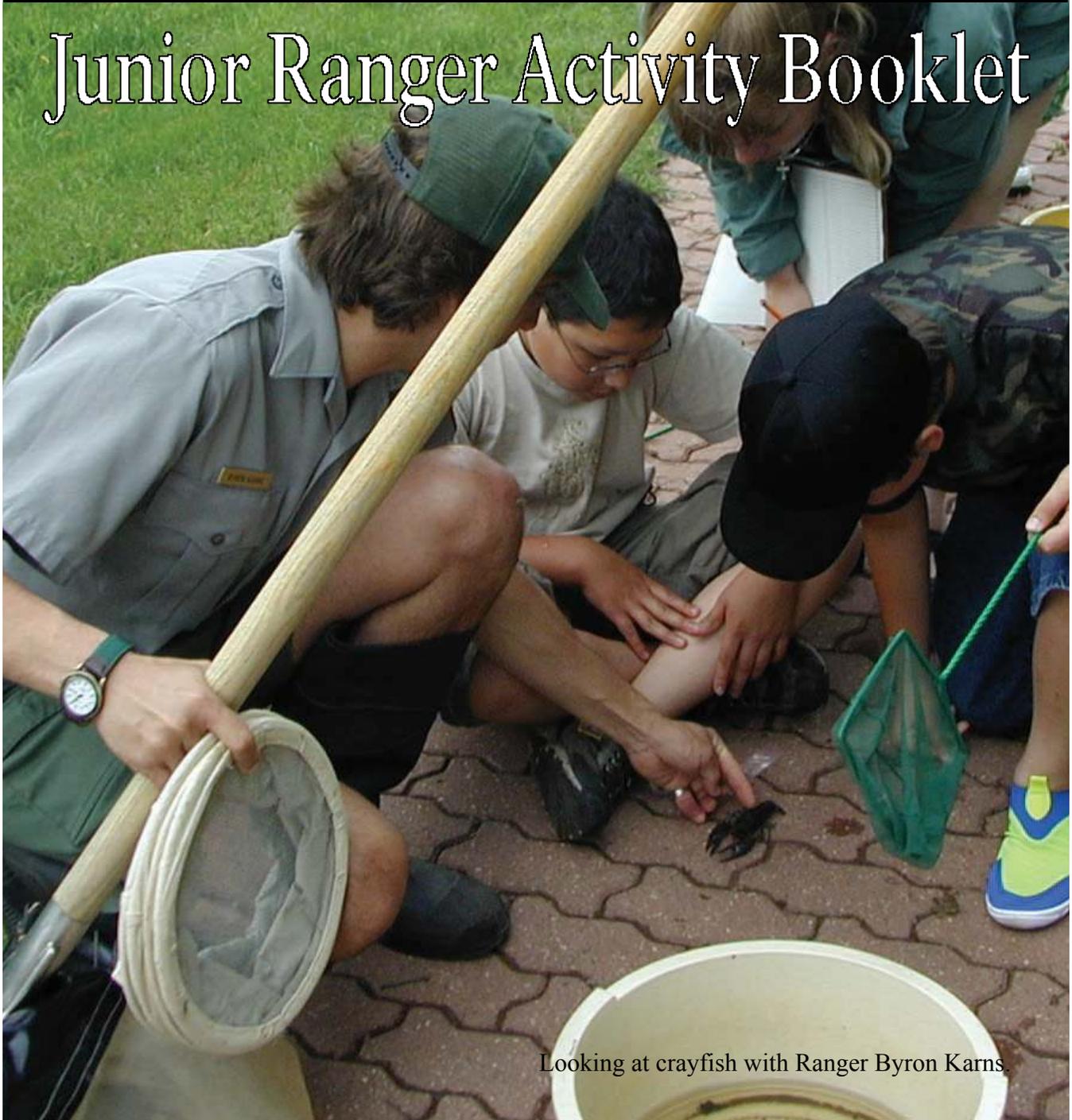




Junior Ranger Activity Booklet



Looking at crayfish with Ranger Byron Karns.

This book belongs to:

The St. Croix National Scenic Riverway consists of 252 miles of the St. Croix and Namekagon rivers in Wisconsin and Minnesota. The Riverway is located near the metropolitan area of Minneapolis and St. Paul, Minnesota, and was one of the first rivers to become protected under the Wild and Scenic Rivers Act of 1968.



The National Park Service manages the Riverway, providing opportunities for a range of recreational activities without detracting from the exceptional natural, cultural, ecological, and aesthetic values. The Junior Ranger Program provides opportunities for young people to become stewards of the Riverway. The activities presented in the Junior Ranger Activity Booklet are intended for children in the 8 to 12 year old age range. Younger children may need adult assistance.



St. Croix National Scenic Riverway

www.nps.gov/sacn

St. Croix River Visitor Center

401 North Hamilton St.
St. Croix Falls, WI 54024
715-483-2274

Summer: Open 7 days a week.
Winter: Open Monday-Friday.

Namekagon Visitor Center

Highway 63
Trego, WI 54888
715-635-8346

Open 7 days a week,
Memorial Day-Labor Day.

Marshland Center

15975 State Highway 70
Pine City, MN 55063
320-629-2148

Call for hours.



St. Croix National Scenic Riverway

Become a Junior Ranger!

To earn a badge and certificate, complete 10 or more activity pages, then sign the Junior Ranger pledge on the last page. Use the checklist below to track your progress! Bring this booklet to one of the visitor centers listed on the opposite page, or mail your completed booklet to the St. Croix River Visitor Center, to receive your awards. Your booklet will be returned.

Life Jacket Activity (at the visitor center). You may complete this activity before or after you spend time at the river. **This activity is required to earn your rewards.**

Scavenger Hunt Bingo 2 Island Song 14-15

Native Americans 3 Cinquain 16

Logging Era 4 Look-Listen-Feel 17

Fur Trade 5 Special Places 18-19

Water Safety 6 Eagles 20

Wolves 7 Animals Tracks 21

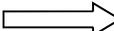
River Map 8-9 A Scenic Park 22

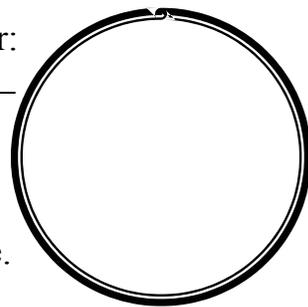
Mussels 10-11 Crossword 23

Dragonfly Game 12-13 **Junior Ranger Pledge 25**

Watch the Riverway movie at the visitor center:
"The St. Croix, A Northwoods Journey." _____

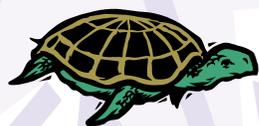
Attend a Ranger Program. _____
(Have a Park Ranger initial the blanks.)

Stamp the official seal for the  St. Croix National Scenic Riverway here.
Ask for it at a visitor center.



Scavenger Hunt Bingo

It is your job as a Junior Ranger to protect wildlife and plants at the Riverway. Learning to recognize and observe life along the rivers is an important part of this job. Watch and listen for these common river sights and sounds. As you see and hear them, circle the picture and try to get bingo (four in a row up, down, or diagonally). The empty spaces are "wild cards." Find something not on the board and draw it in.

Mussel 	Water Plant 	Water Bug 	Eagle 
Fish 	Dragonfly 	Turtle 	_____
Blue Heron 	Frog 	Song Bird 	Animal Tracks 
Duck 	_____	Crayfish 	Wild Flower 



Native Americans

The Ojibwe, Dakota, and other Native American people lived and traveled through this area before Europeans settled here. Storytelling was a very important part of life and was usually done in the winter. Stories were, and are still, passed down through generations by elders telling them to children. This is called an “oral tradition.” Stories often had a “moral” or educational “lesson” to teach. Read this Ojibwe story out loud.

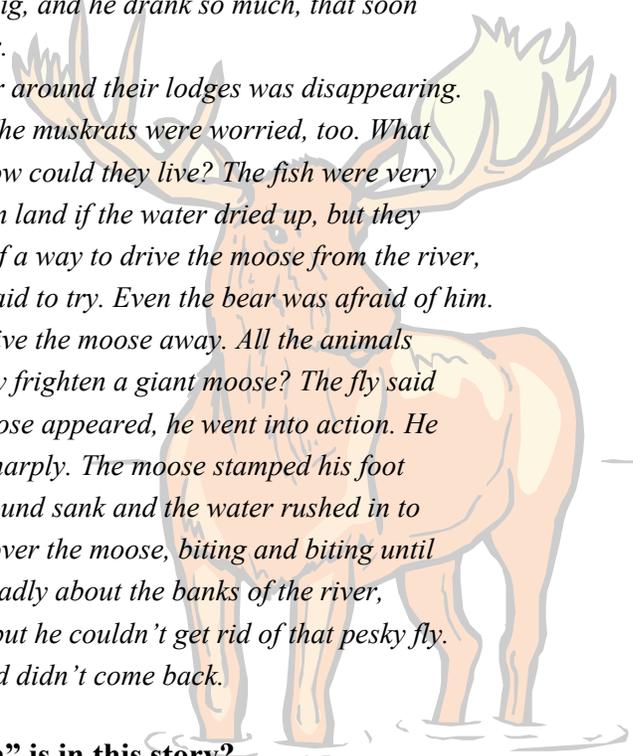


“How Fly Saved the River”

Many years ago when the world was new, there was a beautiful river. Fish in great numbers lived in this river, and its water was so pure and sweet that all the animals came there to drink. A giant moose heard about the river and he too came there to drink. But he was so big, and he drank so much, that soon the water began to sink lower and lower.

The beavers were worried. The water around their lodges was disappearing. Soon their homes would be destroyed. The muskrats were worried, too. What would they do if the water vanished? How could they live? The fish were very worried. The other animals could live on land if the water dried up, but they couldn't. All the animals tried to think of a way to drive the moose from the river, but he was so big that they were too afraid to try. Even the bear was afraid of him.

At last the fly said he would try to drive the moose away. All the animals laughed and jeered. How could a tiny fly frighten a giant moose? The fly said nothing, but that day, as soon as the moose appeared, he went into action. He landed on the moose's foreleg and bit sharply. The moose stamped his foot hard, and each time he stamped, the ground sank and the water rushed in to fill it up. Then the fly jumped about all over the moose, biting and biting until the moose was in a frenzy. He dashed madly about the banks of the river, shaking his head and stamping his feet but he couldn't get rid of that pesky fly. At last the moose fled from the river, and didn't come back.



What do you think the “moral” or “lesson” is in this story?

Start an oral tradition of your own. Ask an adult with you to tell you a story from when he or she was young. Have him or her initial here _____.



Voyageurs and the Fur Trade

Fill in the blanks from the word bank below.

The fur trade in the St. Croix area began in the late 1600s and lasted into the early 1800s. Rivers were like “_____” used to travel from place to place. The _____ were men who traded goods and supplies with Native Americans in exchange for animal pelts or _____. Most of the voyageurs were from _____. They were very strong men who could carry heavy packs of supplies on their backs over long distances. They often carried two packs at a time that were _____ pounds each! To pass the time, they sang songs. They carried items such as _____ to trade with the Native Americans. The voyageurs wanted _____ pelts most because they were valuable for making felt hats worn by men in Europe. Sometimes the Native Americans and fur traders gathered in one spot for a _____.

Word Bank

French Canada 90 cloth
beaver rendezvous
voyageurs furs highways

Trading Post

The two most popular trading companies were the North West Company and the XY Company. Since the voyageurs and the Native Americans didn't use the same currency or paper money, they used a system of bartering. Instead of buying goods with money, pelts were traded for other goods. Using the key below, check off what you could obtain.

You have 17 beaver pelts, 3 deer pelts, 2 red fox, 2 bear pelts, and 16 rabbit pelts.

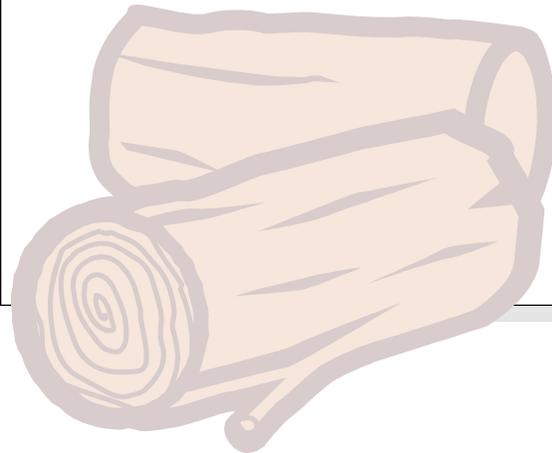
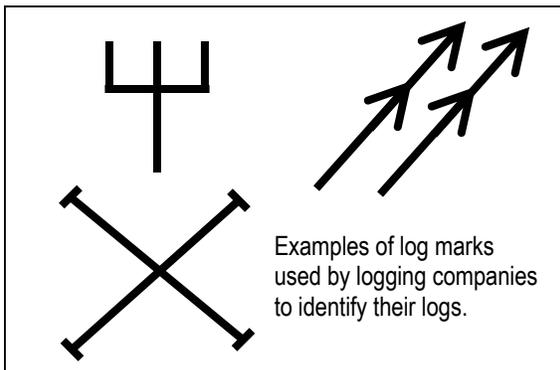
Value of pelts	Cost of goods in beaver pelts
1 Bear = 3 Beaver	<input type="checkbox"/> Chief's coat = 8 pelts
1 Deer = 1 Beaver	<input type="checkbox"/> 1 gun = 10 pelts
1 Fox = 1 Beaver	<input type="checkbox"/> Silk handkerchief = 2 pelts
8 Rabbit = 1 Beaver	<input type="checkbox"/> 1 keg powder = 50 pelts
2 Skunk = 1 Beaver	<input type="checkbox"/> 2 fine knives = 1 pelt
	<input type="checkbox"/> 1 ax = 3 pelts
	<input type="checkbox"/> Pack of cards = 1 pelt
	<input type="checkbox"/> 1 kettle = 2 pelts
	<input type="checkbox"/> 25 needles = 1 pelt
	<input type="checkbox"/> 10 pairs earrings = 1 pelt



The Logging Era

In the 1800s, lumberjacks came from all over the world to cut trees in the untouched forests along the St. Croix and Namekagon. The tree they prized most was the white pine because they floated better than other trees. In their peak year, lumberjacks cut down 450 million board feet—enough wood to make a 3 foot wide path around earth's equator!

After the trees were cut, lumberjacks used the rivers as highways to float logs to saw mills where they were cut into boards. Many different lumber companies used the river so each company used a "brand" or design that was hammered into the end of their logs for identification. If you had a lumber company, what would your unique design look like? Draw it on the end of this log.



Because they worked so hard, the lumberjacks ate large meals but there was a rule of no talking at the table! Over time, lumberjacks created many unusual names for common words. Try to match our name with the lumberjacks' name, then check page 24. See if you can use one of these new names while you are eating today.

- | | |
|-----------------|------------------|
| 1. ___ Pancakes | a. Mud |
| 2. ___ Coffee | b. Sun Toast |
| 3. ___ Bread | c. Cackleberries |
| 4. ___ Eggs | d. Flapjacks |
| 5. ___ Beans | e. Sinkers |
| 6. ___ Donuts | f. Firecrackers |



WATER SAFETY

There are a couple of tips that are important to remember when you are on or near the water. Look at the key to find the letter pattern, then solve the riddle below using that code. The first three letters are filled in for you. Check page 24 for the answers.

key A B C 1 2 3 S T C R O I X
Z A B 0 1 2 R S B Q N H W

1. A L W
Z K V Z X R Q D L D L A D Q

X N T Q R T M R B Q D D M

2.
L Z J D C Q H M J H M F

V Z S D Q Z Q N T S H M D

3.
S G D B T Q Q D M S H R

R S Q N M F

4.
A Q H M F Z

K H E D I Z B J D S Z K N M F

5.
Z M C V D Z Q H S H E

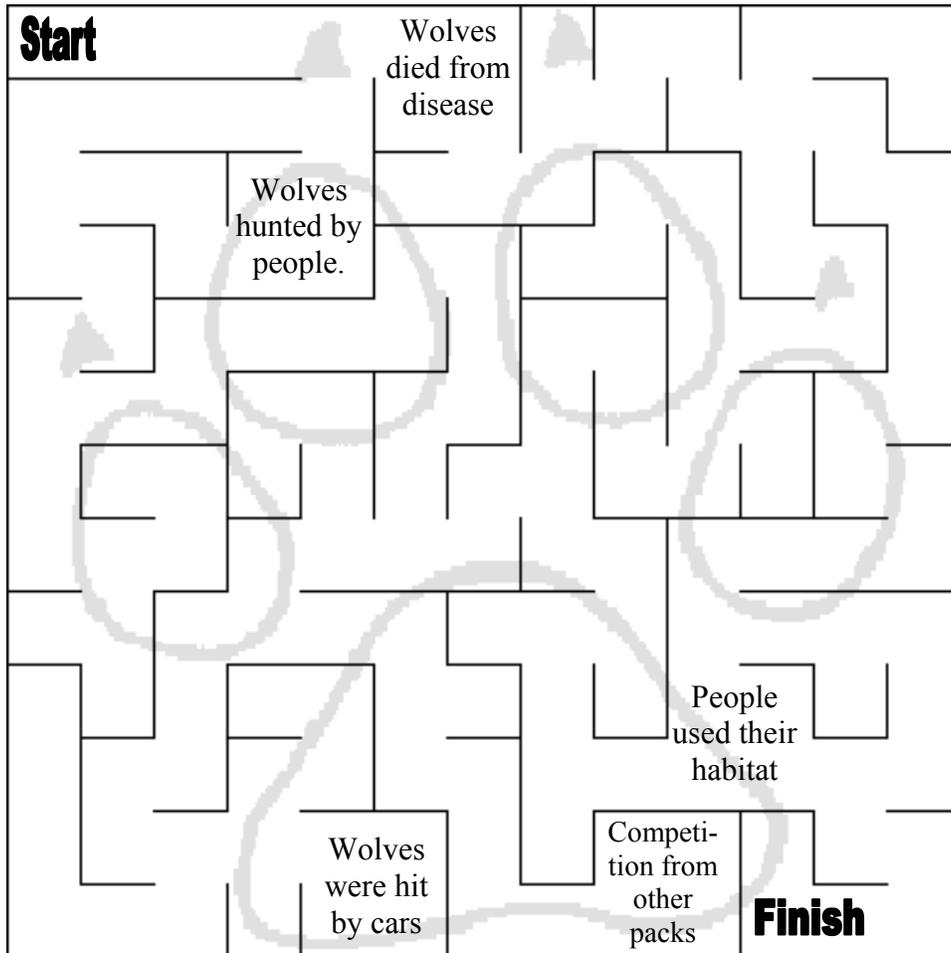
T M C D Q 0 2



Wolves on the Riverway

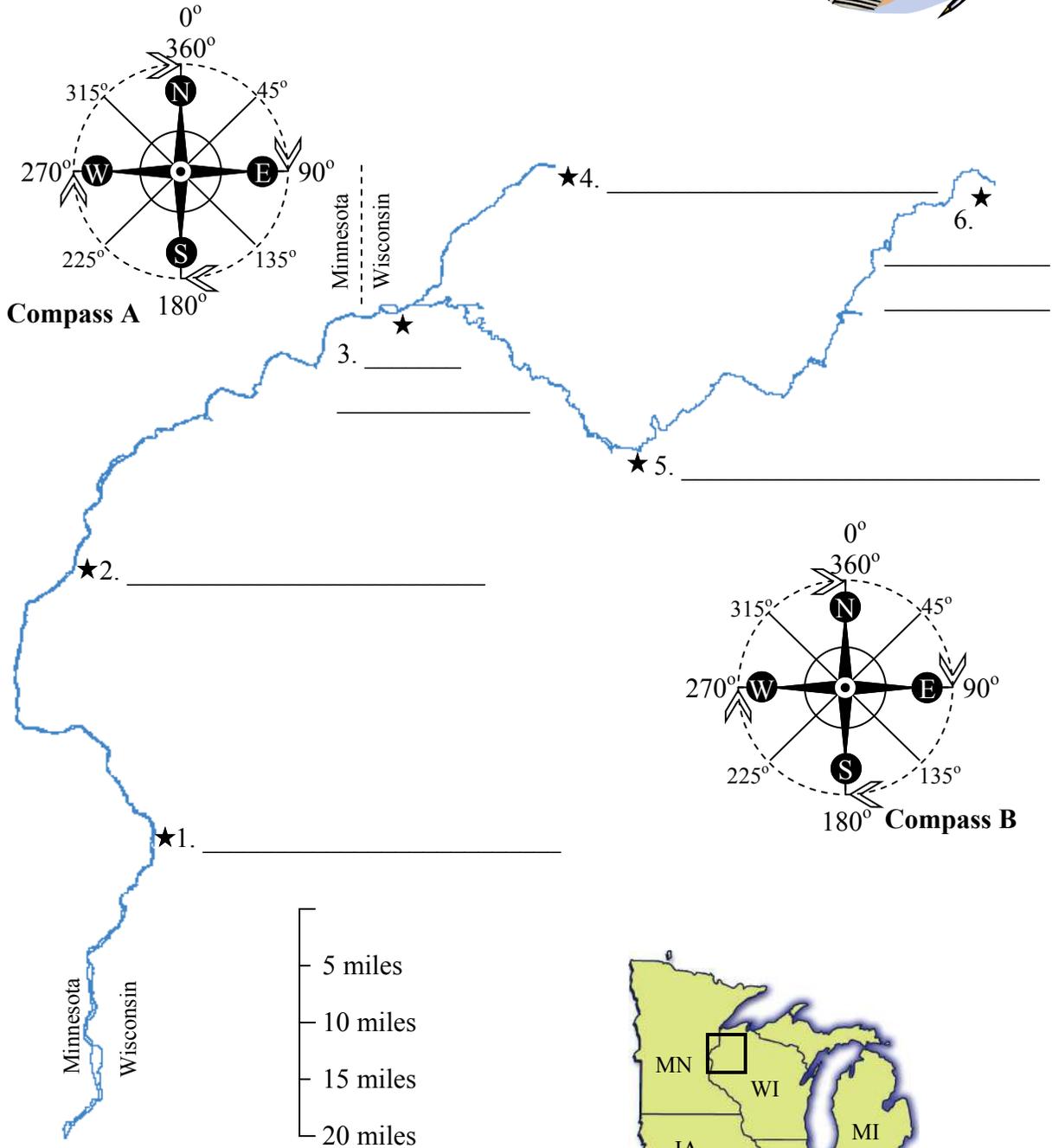
After many years on the endangered species list, wolves in this area are now returning to healthy populations. There are as many as nine wolf packs along the Riverway today. The undeveloped lands near the river are good habitat for wolves as they offer food, shelter, and quiet areas where wolves can have their dens.

Eighty percent of their diet is whitetailed deer, which are common along the rivers. As you make your way through this maze, you'll see some obstacles that wolves overcame to rebuild their populations. The problems they encountered are barriers you need to go around in this maze. Notice the paw print in the background. It is the actual size of a wolf track.



St. Croix National Scenic Riverway Map Lesson on Bearings

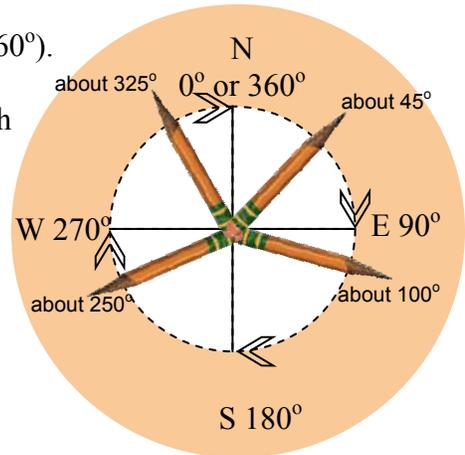
Instructions for this activity are on the next page.



People use degrees, or angles, on a compass face and distance to figure out locations on maps. Do the following activity to figure out the location of Riverway landmarks.

To measure the angle: A circle has 360 degrees (360°).

Angles are measured in a clockwise direction. Straight east measures 90° , south is 180° , west is 270° , and north is the starting and ending point going around the circle so it is both 0° and 360° . To find an angle, estimate what it might be based on the angles you know around it. You don't need to be exact. To find your angles, put the end of your pencil in the middle of the circle and have the end pointing out where the angle would be. There are 4 examples of estimations of angles on the compass above: 45° , 100° , 250° , and 325° .



To measure distance: First find something you can use to measure with. For example, maybe your pointer finger is the width of 5 miles. Then you would know that three pointer fingers equal 15 miles. Once you have your angle, measure the distance down the line of your pencil, away from the center, and you should have your location.

On the map, find and label each landmark. (Hint—each place is marked with a star.)

Example: to find Compass B, angle 130° from compass A, then follow down your pencil about **80** miles.

- St. Croix River Visitor Center**
 180° angle from compass A, follow down your pencil about **60** miles.
- Marshland Center**
 280° angle from compass B, follow down your pencil about **65** miles.
- Namekagon River Visitor Center**
 315° angle from compass B, follow down your pencil about **25** miles.
- St. Croix Flowage** (the start of the St. Croix)
 90° angle from compass A, follow down your pencil about **30** miles.
- Namekagon Dam** (the start of the Namekagon)
 20° angle from compass B, follow down your pencil about **45** miles.
- The Confluence** (where the St. Croix and Namekagon meet)
 130° angle from compass A, follow down your pencil about **25** miles.

What part of the river did you visit? Make a star on the map, label it, and write in the location instructions. You can choose the starting point as compass A or B.

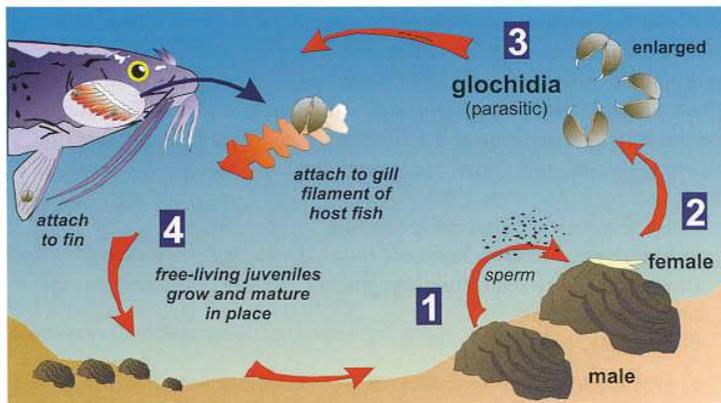
- _____ angle from compass ____, follow down your pencil about ____ miles.

FRESHWATER MUSSELS OF THE ST. CROIX

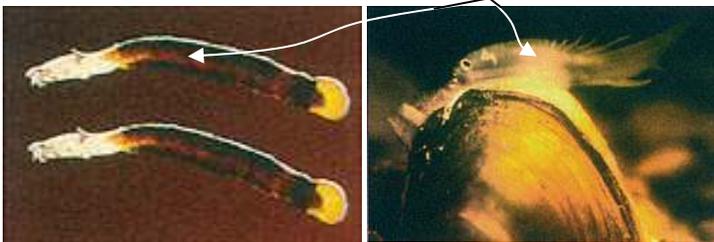
Freshwater mussels are amazing animals with many surprises. They filter water through their gills for food which also cleans the water. Mussels are called “indicator species,” which means if there is a problem with the health of the river, problems often show up first in the health of the mussels.

Baby mussels, called glochidia, must attach to fish to get nutrients so their body organs can grow. Mussels have many interesting ways to attract fish close enough to give the glochidia a chance to attach. The glochidia drop off the fish after a couple of weeks.

The Riverway is home to 40 different species of mussels. Freshwater mussels are one of the most endangered groups of animals in the world. So far, none of the species that were here when scientists first started to identify the species in the St. Croix or Namekagon rivers have gone extinct.



Mussel lures that attract fish. Glochidia are inside.



You can help protect mussels!

Mussels can suffocate if they are placed in the water upside-down.

It is best to leave mussels in the water.

Empty mussel shells are used by fish for shelter and are a good place to lay eggs.

Leave empty shells in the river.

MUSSEL I.D



Here are some of the most common mus-
sels on the Riverway. Try to figure out
their names and check your answers in
the back. If you need help, ask for the
“Mussel Fact Sheet” at a visitor center.
The mussels in the shaded boxes are
federally endangered.

1 5 7 9  -B 

1 _____

6 _____

2 _____



3 _____

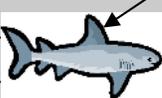
 +ED 

7 _____

F+ -B M+ -B 

4 _____



H+ -P +G+ -F +S  

5 _____

Note: the game board continues on the next page.

Dragonfly Dance

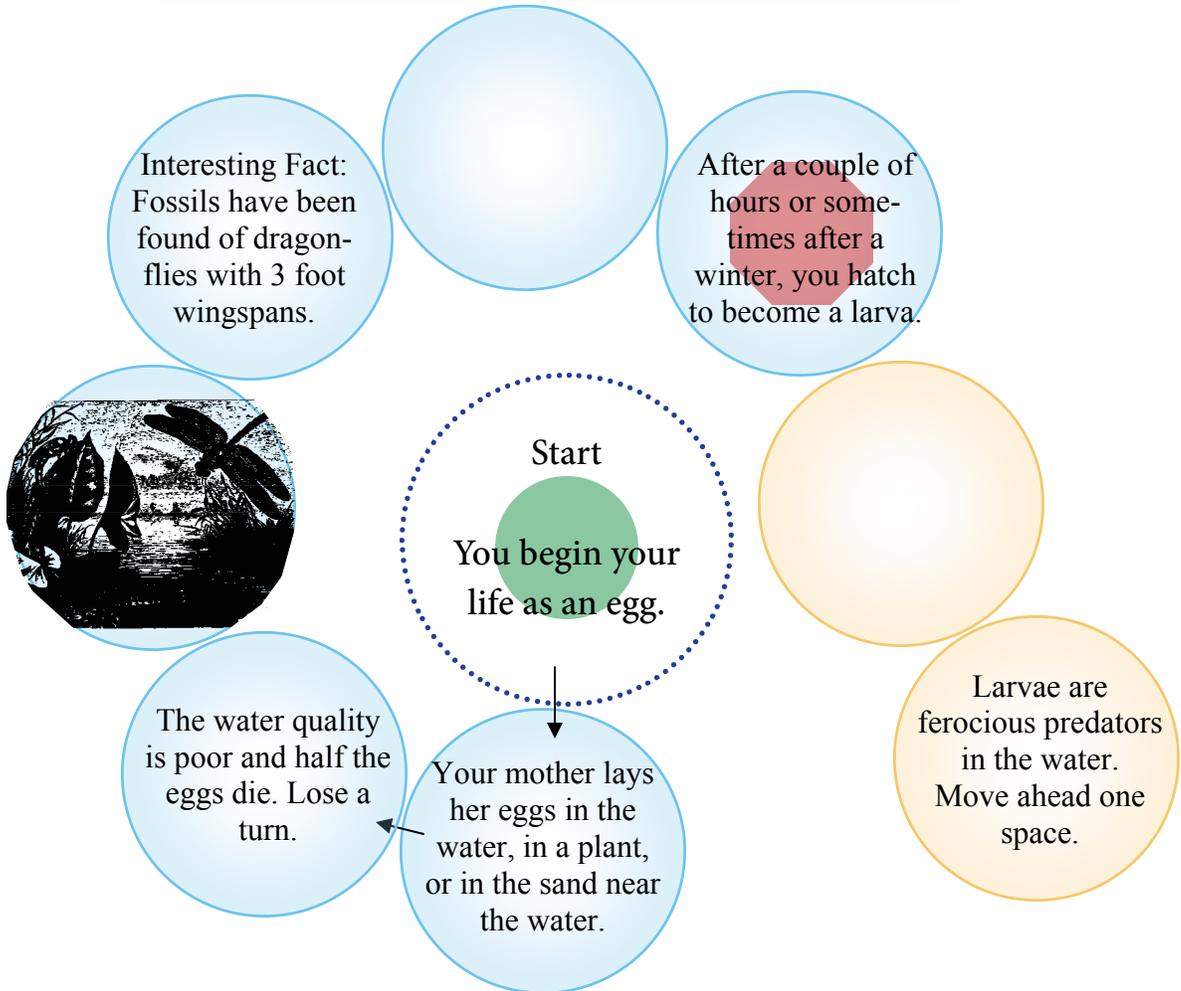
Start at the first circle and take turns flipping a coin, heads moves two, tails moves one.

As you land on each circle, read the information or follow the instructions.

When you reach a circle with a stop sign, your change life cycles. Stand up and do a dragonfly dance!

**For two
or more
players**

**Each player needs
a playing piece
such as a pebble
or small stick.**



Today you eat 60 mosquitoes. Move ahead one space.

Your large eyes give you nearly a 360 degree field of vision.

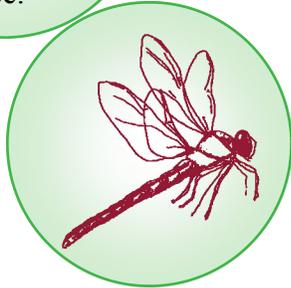
90% of the emerging dragonflies are eaten by birds and frogs. Lose a turn.

FINISH!
Congratulations, you are now a mature adult dragonfly!

You meet a St. Croix Snaketail which was discovered in this area. Move ahead one space.



Dragonflies are the fastest insects in the world.



You are starting to become an adult dragonfly.



After up to 8 years in the water for some species, you crawl up on shore...

Using air to puff up your body, you burst through your outer skin...



ISLANDS

No matter where you are on the St. Croix and Namekagon rivers, you will likely see islands. Islands serve many important functions on the rivers. Sing the song below to the tune of “On Top of Spaghetti” to find out why they are important. You could sing the song around a campfire with your family. Draw some or all of the underlined words on the blank picture frame on the next page.

When out in the kayak,
On river St. Croix,
I glide past an island—
A habitat joy.

On top of the island,
A bird drops a seed.
It may be a pine tree—
I hope not a weed.

How come there are islands,
In numbers so great?
How did they get here?
And what is their fate?

Roots hold soil together,
And keep islands strong.
Some islands are shrinking.
There is something wrong.

Some islands have outcrops,
Of rock at their core.
Some started as sandbars,
And then became more.

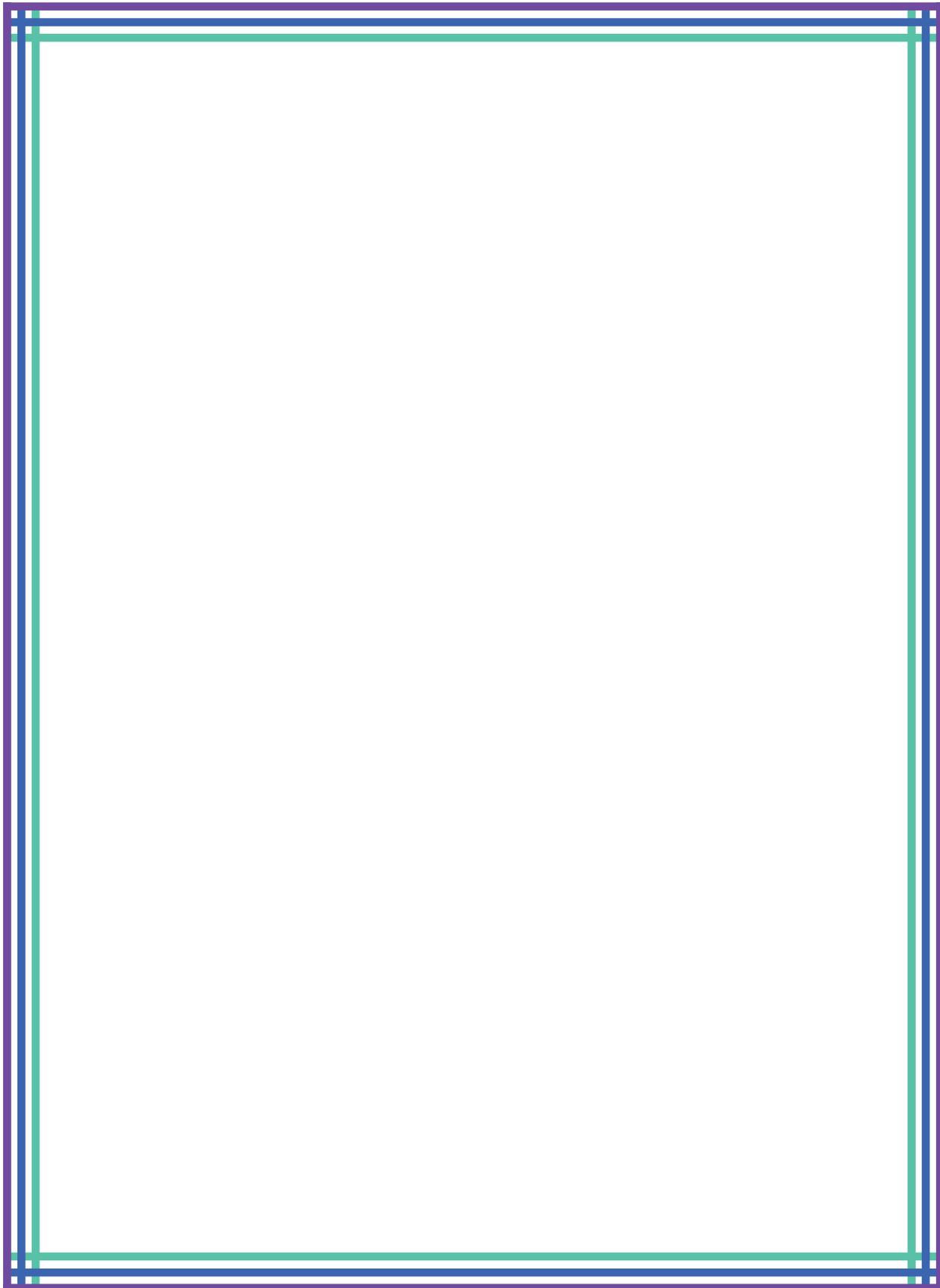
Sometimes speed boats whiz by,
And without a doubt,
Big waves strike the islands,
And carve overhangs out.

When trees float the river,
They sometimes get caught,
On sand island shores,
And pile up a lot.

Why in such a hurry?
Don't speeders enjoy,
The wildlife and landscape,
Of scenic St. Croix?

Log piles provide shelter,
For turtles and fish.
They're great little nurseries—
A smallmouth bass wish!

So when on the river,
Slow down and explore.
Take care of the islands,
Take care of the shores.



Cinquain

Writing poetry is a way to share your knowledge or feelings about a topic in your own personal way. One type of poetry is called a cinquain (sing-keyn). A cinquain is a five-line poem, written in a specific way or “form” that describes a person, place, or thing. Find something in or near the river that you want to write about. Read the “form” below, then write your own cinquain on the lines below.

Line 1: one word, the subject or title of the poem

Line 2: two words, describing the title

Line 3: three words, describing the actions of the title

Line 4: four or five words, phrase about the title

Line 5: one word, describes your feelings about the title

Example:

Turtle
Snug, Strong
Diving, swimming, basking
Watcher of the river
Prehistoric

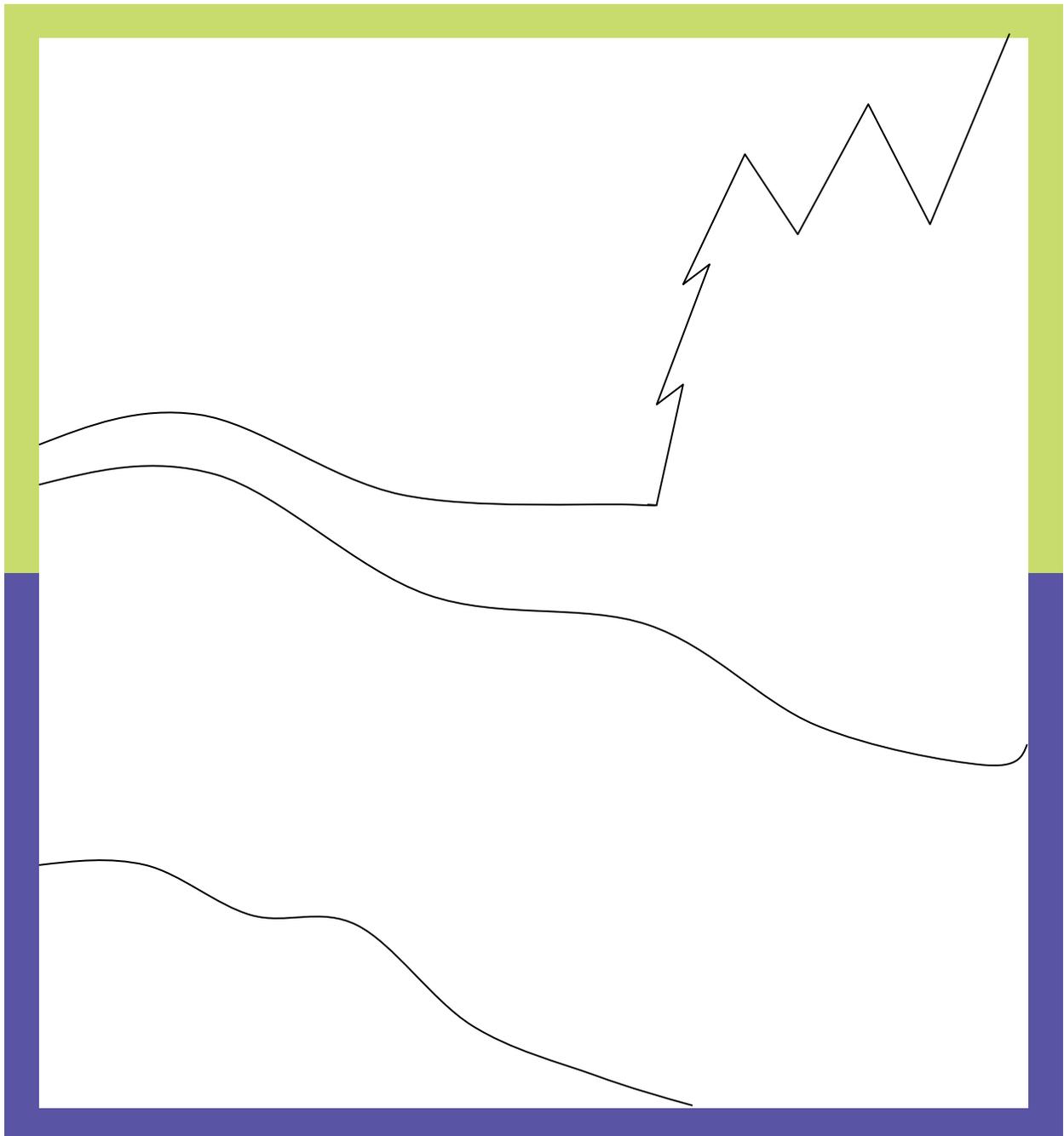


Two Painted Turtles

1. _____
2. _____
3. _____
4. _____
5. _____

LOOK-LISTEN-FEEL

Take a couple of minutes to look around to see what is in the river, on the shore, and in the air. Different types of flora (plants) and fauna (animals) live in the different types of habitat. Close your eyes and listen to the sounds in those three areas. Then feel for temperatures or textures around you. Fill in the empty drawing below with pictures and descriptions of what you saw, heard, and felt.

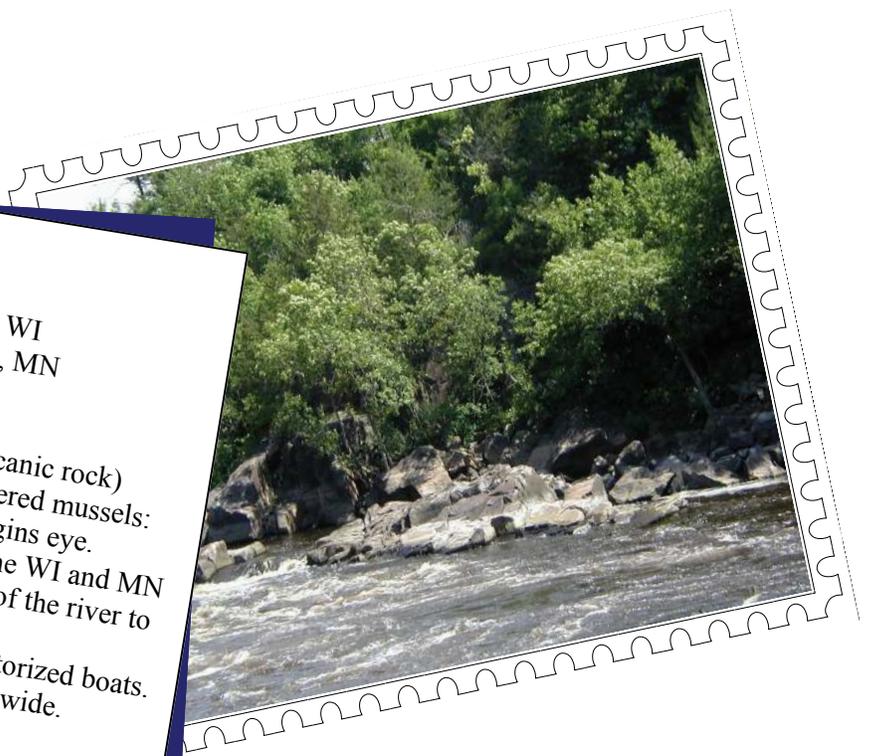


{ SPECIAL PLACES }

The St. Croix National Scenic Riverway includes 252 miles of the St. Croix and Namekagon rivers. This means there are over 500 miles of shoreline to explore, along with countless islands and backwaters within the national park boundary. Each part of the river is unique and special. You may have seen some of the “special places” described on this page and the following page. Describe a place on the river that is special to you.

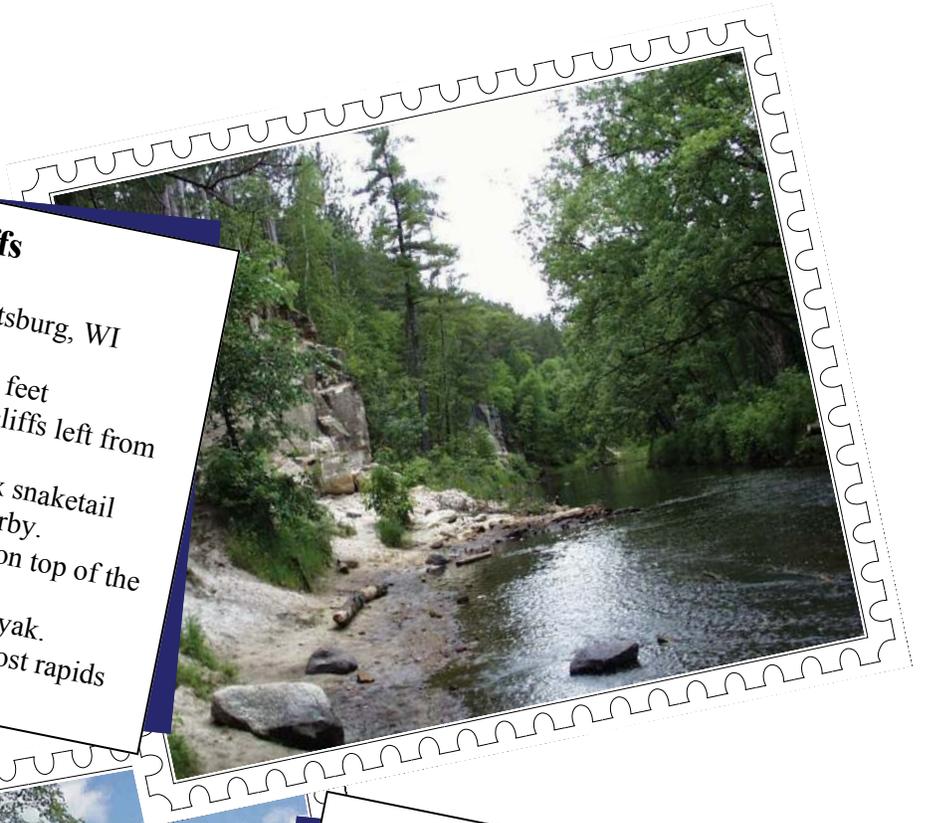
The Dalles

- Location:** St. Croix Falls, WI
& Taylors Falls, MN
- River Width:** 130—500 feet
- River Depth:** over 100 feet
- Geography:** Basalt cliffs (volcanic rock)
Federally endangered mussels:
the winged mapleleaf and the Higgins eye.
- Home to:** Federally endangered mussels:
the winged mapleleaf and the Higgins eye.
- Featured activity:** Hiking. Visit the WI and MN
Interstate Park trails on either side of the river to
see potholes formed by the glaciers.
- Transportation:** Canoe, kayak, motorized boats.
- Water characteristics:** Slow, deep, wide.



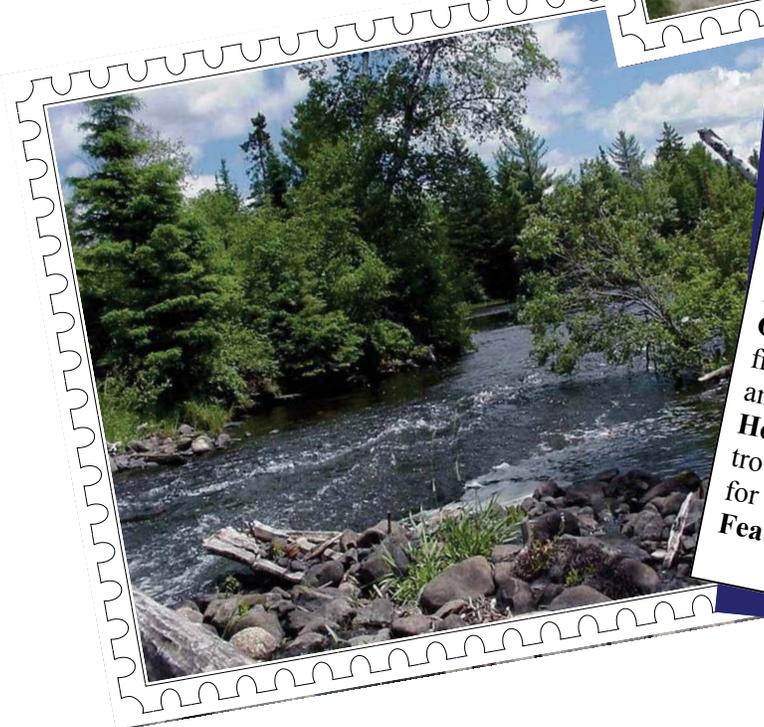
The Sandrock Cliffs

Location: near Grantsburg, WI
River Width: 50 feet
River Depth: usually 1-2 feet
Geography: Sandstone cliffs left from glacial lake deposits.
Home to: The St. Croix snaketail dragonfly was discovered nearby.
Featured Activity: Camping on top of the sandstone cliffs.
Transportation: Canoe and kayak.
Water characteristics: Fast, most rapids are found upstream from here.



The Upper Namekagon River

Location: Hayward, WI
River Width: 30-75 feet
River Depth: 2-3 feet
Geography: Gentle rolling hills left from the glaciers with a mixture of sand and rock.
Home to: Brook, rainbow, and brown trout and sturgeon (Namekagon is Ojibwe for "where the sturgeon spawn").
Featured Activity: Flyfishing.





Bald Eagles

The bald eagle is the national symbol of the United States. They have made an amazing recovery from the brink of extinction. Habitat protection has been one factor in their recovery. For this activity, complete the math problems in the bubbles, then fill in the “Amazing Eagle Facts” blanks by matching the bubble number with the fact number. Check page 24 for the answers.

1.
23
-19
—

2.
9 | 135

3.
 $x \div 4 = 8$

4.
4.5
0.63
+1.87

5.
 $12 + 6 + 9 + 13 =$

6.
1,400
x 5

7.
 $12\frac{1}{2} \times 8 =$

8.
 $91 - y = 81$

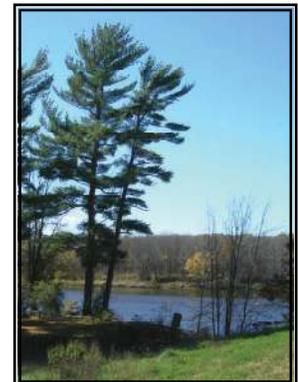
9.
 $20 \times 50 =$

Amazing Eagle Facts

1. After ____ years, their head and tail turn white.
2. Female eagles weigh about ____ pounds.
3. On average, they stand ____ inches tall.
4. A female’s wingspan is about ____ feet.
5. Eagles live to be about ____ years old.
6. Eagles have about ____ feathers.
7. They can reach diving speeds (flying downward) of ____ miles per hour.
8. Their nests can be up to ____ feet in diameter (the distance across it).
9. Their nests on average weigh ____ pounds.

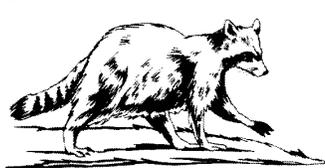
Eagle Trees

White pine trees are great places to look for bald eagles. The pines are usually the tallest trees around and are great places for the eagles to build their nests. The adult eagles can perch up high and look for trouble. Can you see any white pines nearby? Look for their up-turned branches and long needles.



Animal Tracks

Animal tracks are evidence of life that you may see on the river even if you don't see the animal. Match the animal picture to the name; then match the name to the animal's track. Remember to always observe wildlife from a distance and never feed them.

1.		Wolf		A
2.		Otter		B
3.		Canada Goose		C
4.		Muskrat		D
5.		Beaver		E
6.		Great Blue Heron		F
7.		Raccoon		G



A SCENIC PARK

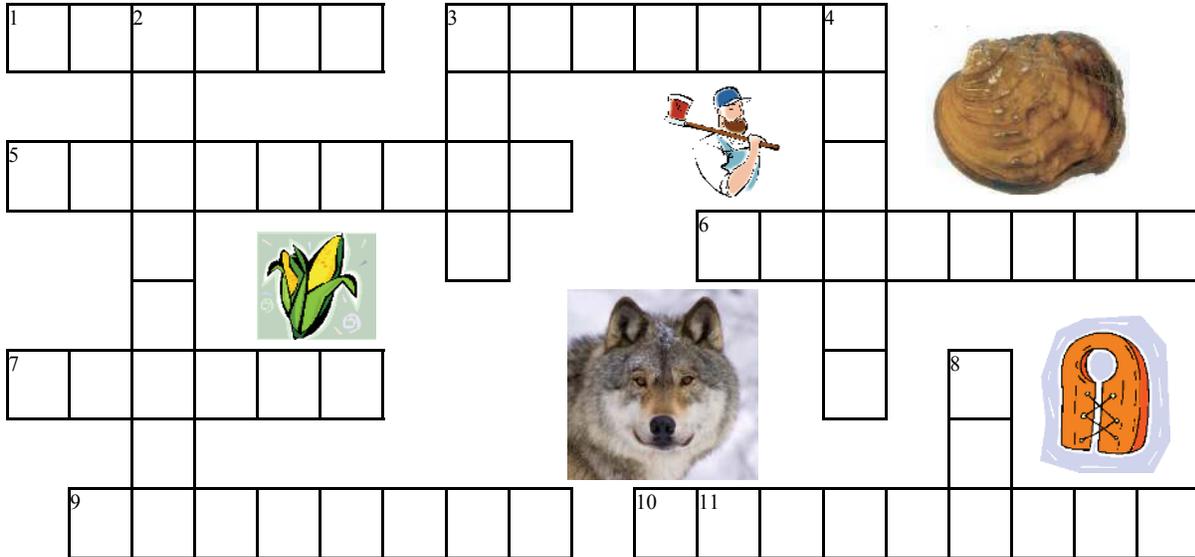
The St. Croix National Scenic Riverway is a “scenic” national park. That means it was set aside to protect the scenery, or the landscape and things people would see in the landscape. More than 500,000 people visit the Riverway each year and even little changes made by each visitor can have a big impact on the scenery.

Describe the impacts these changes would make on the Riverway.

<p>If each visitor picked wildflowers... X 500,000 visitors</p> <p>...what would happen?</p>		<p>If each visitor took mussels or mussel shells... X 500,000 visitors</p> <p>...what would happen?</p>	
<p>If each visitor left a glass bottle in the river... X 500,000 visitors</p> <p>...what would happen?</p>		<p>If each visitor had a campfire outside a metal ring... X 500,000 visitors</p> <p>...what would happen?</p>	

CROSSWORD PUZZLE

All the answers can be found in this booklet



ACROSS

1. Many stories told by Native Americans have a moral or _____
3. A circle has 360 _____
5. What you should always wear on the river
6. A type of poem written in a specific way or "form"

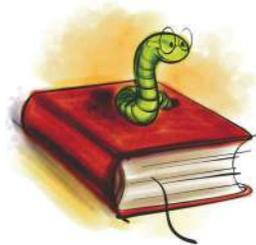
7. The most popular fur traded
9. In the Ojibwe language, Namekagon means "where the _____ are"
10. After being released from the female mussel, the _____ attach to their host fish
12. Another name for plant life
13. Islands create extra _____ for many river insects, mammals, and fish

DOWN

2. The name loggers called bread
3. 80% of a wolf's diet is whitetailed _____
4. St. Croix National _____ Riverway
8. An eagle's favorite nesting tree
11. The stage of a dragonfly's life when they are considered ferocious predators

If you want to learn more about some of these topics, check out any of these books from your local library.

- * Signs Along the River, by Kayo Robertson
- * The Lorax, by Dr. Seuss
- * River Life, by Barbara Taylor
- * Three Days on the River in a Red Canoe, by Vera B. Williams
- * Fresh Water Fish and Fishing, by Jim Arnosky
- * A River Ran Wild, by Lynn Cherry
- * Letting Swift River Go, by Barbara Cooney
- * Dragonflies, by Molly McLaughlin
- * The Fascinating World of Wolves, by Maria Julivert
- * Soaring with the Wind, The Bald Eagle, by Gail Gibbons



Answers

Pg. 4 **Logging**—1d, 2a, 3b, 4c, 5f, 6e

Pg. 5 **Fur Trade**—1) voyageurs, 2) fur, 3) French Canada, 4) 90, 5) cloth, 6) beaver, 7) rendezvous

Pg. 6 Water Safety

1. Always remember your sunscreen
2. Make drinking water a routine
3. The current is strong
4. Bring a lifejacket along
5. And wear it if under 13

Pg. 9 **Riverway map**—1) St. Croix River Visitor Center 2) Marshland Visitor Center 3) the Confluence 4) St. Croix Flowage 5) Namekagon River Visitor Center 6) Namekagon Dam

Pg. 11 **Mussel I.D.**—1) Three Ridge 2) Black Sandshell 3) Rock Pocketbook 4) Fat Mucket 5) Higgins Eye 6) Sheepnose 7) Winged Mapleleaf

Pg. 20 **Bald Eagles**—1)4, 2)15, 3)32, 4)7, 5)40, 6)7000, 7)100, 8)10, 9)1000

Pg. 21 **Animal Tracks**—1) Beaver-B, 2) Great Blue Heron-A, 3) Otter-F, 4) Canada Goose-E, 5) Wolf-G, 6) Muskrat-C, 7) Raccoon-D

Pg. 23 Crossword

Across—1) lesson 3) degrees 5) sunscreen 6) cinquain 7) beaver 9) sturgeon 10) glochidia 12) flora 13) habitat
Down—2) suntoast 3) deer 4) scenic 8) whitepine 11) larva

Pg. 3: Ojibwe story from Canku Ota, An Online Newsletter Celebrating Native America. www.turtleback.org/
Pg. 11: mussel photos courtesy of the Wisconsin Department of Natural Resources

Junior Ranger Pledge

*As a Junior Ranger, I _____,
promise to protect and preserve the plants,
animals, and history of the St. Croix National
Scenic Riverway and to keep the air, water, and
land clean. I will share what I have learned about
National Parks with others and will continue to
explore these national treasures.*

X _____
(your signature) (date)

X _____
(witness signature)

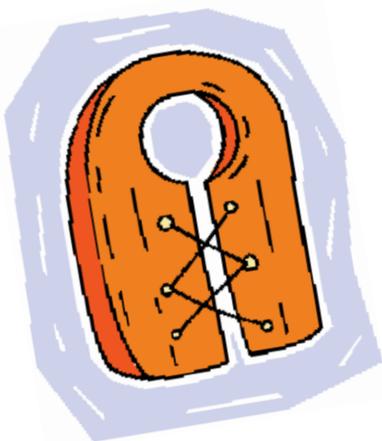


Life Jacket Activity

When you visit one of the centers listed in the front of this booklet, speak to the person behind the information desk and tell them you are working on your Junior Ranger badge.

They will ask you to show them how you put on a life jacket.

You will have several life jackets to use. Try to choose the life jacket that fits you best and don't forget to buckle all the buckles. Remember that everyone under the age of 13 needs to wear a life jacket while on moving vessels when they are on the river.



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To learn more about the online National Park Service Junior Ranger program, visit: www.nps.gov/webrangers



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***Junior Ranger Motto:
Explore. Learn. Protect.***