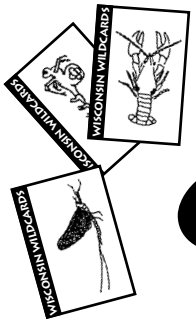
GO WILD WITH WISCONSIN WILDCARDS!



GO WILD WITH WISCONSIN WILDCARDS!

AN EDUCATORS' GUIDE WITH ACTIVITIES AND DIRECTIONS FOR GAMES, MAGIC TRICKS, AND MORE!

GO WILD WITH

WISCONSIN WILDCARDS!

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INTRODUCTION

Wisconsin Wildcards are similar to baseball trading cards, except that they feature Wisconsin's natural resources instead of ballplayers! By collecting and reading **Wildcards**, students can meet rare plants and animals, learn to identify invasive species, discover what kinds of fish they caught last summer, and visit special places all over the state.

WHO CAN USE THIS GUIDE?

Anyone can enjoy **Wildcards**, but this guide is for naturalists, teachers, youth leaders, rangers, and resource specialists around the state. Use the cards with the activities and games in this guide to help Wisconsin residents and visitors learn about the diversity and vulnerability of Wisconsin's natural resources. WDNR staff and partners can also use the cards in less formal ways. See a list of ideas on page 125.

HOW IS THE GUIDE ORGANIZED?

There are two sections to the guide. The first section contains lesson plans for use in more formal settings. The second section contains card games, magic tricks, card stunts, and puzzles.

WHO IS THE TARGET AUDIENCE?

The activities, games, and magic tricks included in this guide are designed for kids in grades 3 – 8, but you will probably find that many can be adapted to younger and older kids.

HOW DO I ORDER AN EDUCATORS' KIT?

Wisconsin educators and youth leaders may order a kit (PUB-PR-025) that contains a hard copy of the guide along with one complete deck of Wildcards plus three partial decks – that's enough cards to do everything! Place your order by mailing a **request on school or youth organization letterhead**, along with $12 payable to WDNR – Wildcards to:

Publications – CE/8
Wisconsin Department of Natural Resources
Box 7921, Madison, WI 53707

Note: Your materials will be shipped UPS, so use your street address.

WHAT IF I JUST WANT THE GUIDE?

The **Go Wild With Wisconsin Wildcards! Educators' Guide** is available as a free download from the EEK! website. You can download the whole guide or just the sections you want. <http://dnr.wi.gov/eek/teacher/wildcardguide.htm>

WHAT IF I JUST WANT WILDCARDS?

Individual **Wisconsin Wildcards** are available at most state parks, forests, and service centers. You'll also find them at special events like the Wisconsin State Fair and Sports Show. In addition, educators can order 30-packs of select Wildcards <http://dnr.wi.gov/education/pdf/wildcard.pdf> or download pdfs of select cards <http://dnr.wi.gov/eek/cool/wildcards/index.htm> and print them. However, to do many of the activities in this guide, you will need whole decks of **Wisconsin Wildcards**. Some games require multiple decks. These are only available in the educators' kit.

HOW CAN I ORGANIZE AND STORE CARDS?

That's up to you, but here are some ideas:

- Slide them into the plastic protectors designed for trading cards.
- Punch holes in the corners and put them on binder rings or hold them together with zipties.
- Put them in a pencil box. They fit great in plastic Spacemaker® boxes.

HOW CAN I MARK CARDS FOR GAMES?

You might find it helpful to mark cards so they can be quickly separated into different sets for playing games or doing activities. Here are some ideas for marking cards:

- Punch out different designs using decorative one-hole punches. Fish cards are already punched, but you can punch over the hole, if necessary.
- Stick on small colored dots or other stickers.
- Paint on small dots with paint markers or gel pens.

CARD SORTING HINT

Mark one complete set with hole punches or stickers. Mark three additional decks of the Natives Collection with three different hole punch designs or stickers. Then you can quickly sort cards for many of the games and activities in this guide.

HOW MANY WILDCARDS ARE THERE?

To date, 225 Wildcards have been published in the following major categories: Alien Invaders, Avoid Me!, Furbearers, Large Mammals, Match Your Catch!, Native Amphibians & Reptiles, Native Pests, Native Species, Native Trees, Raptors, Rare Species, Special Places, State Forests, Upland Game Birds, Waterfowl, and Wildfire Preventers. Please note the number of cards and categories will change as new cards are added or as current cards are discontinued or become temporarily unavailable.

WHO SPONSORS CARDS?

Individual cards are sponsored by various WDNR programs, with financial and in-kind assistance from other state agencies and organizations (e.g., UW-Extension, Sport Fish Restoration, Natural Resources Foundation of Wisconsin, Wisconsin Coastal Management Program, Wisconsin Wetlands Association, Wisconsin Trappers Association, Timber Wolf Alliance, and Wisconsin State Parks) If your organization is interested in sponsoring a **Wisconsin Wildcard**, contact Sherry Wise at 715-365-8966.

GO WILD ACTIVITIES

WILDCARDS NEEDED

You can do almost half of the activities in this section of the guide with one complete deck of **Wisconsin Wildcards**. See the table on page 116 for a breakdown of the cards you will need for each activity. Keep in mind, you can usually reduce the number of decks of cards you need by doing the activites at learning stations, working with smaller groups of kids in rotations, or asking kids to double up for an activity.

GRADES

The activities are designed for kids in grades 3 – 8, however, many of the activities can be adapted for use with younger and older students. Look for the table that shows activities by grade on page 117.

ACTIVITY TIME

The time listed is an estimate of the time needed to do the activity as written. It doesn't include time to complete the assessment, try the extensions, or play the games more than once!

CONNECTIONS

STANDARDS

Teachers will find that the activities have been correlated to Wisconsin's Model Academic Standards. For a summary of all correlations to the standards, see pages 118 - 121.

SCOUT BADGES AND RECOMMENDATIONS

Boy Scout and Girl Scout leaders will find connections to badge requirements included with each activity and summarized on pages 122.

PROJECT WILD & PROJECT LEARNING TREE

On pages 123 - 124, you can find a list of WILD and PLT activities that can be used to complement or extend the activities in this guide. In addition, **Wisconsin Wildcards** can enhance and "Wisconsinize" many WILD and PLT activities by providing local examples and great photographs.

WHO AM I?

METHOD

With unknown cards taped to their backs, kids try to figure out their identities by asking "yes" and "no" questions.

GRADES

3 – 8

ACTIVITY TIME

10 – 15 minutes

SETTING

Anywhere

MATERIALS

- **Wisconsin Wildcards: Natives** (see list on page 113). Randomly select a card for each kid or choose cards based on a selected topic.
- Masking tape or name badges to attach cards to kids' backs

SCOUT CONNECTIONS

Junior Girl Scouts: Animal Habitats

INTRODUCTION

Wisconsin has an amazing variety of plants and animals. Some of them are very familiar to you; some are so rare that you may never have heard of them. Today you will get a chance to meet some of these plants and animals through a game of "Who Am I?"

DOING THE ACTIVITY

1. **Learn about the plants and animals on the cards.** If the plants and animals on the cards are not familiar to the kids, spend some time getting to know them before attempting this game.
2. **Explain how to play the game.** Tell the kids you will put a mystery plant or animal on each kid's back. By asking their classmates "yes" or "no" questions, they must try to find out the identities of their Wildcards. They may ask each classmate only one question.
3. **Hand out cards without allowing kids to see them.** Attach the cards to kids' backs using tape, or slide the cards into name badges that can be worn backwards around the neck or clipped to the kids' backs.

4. **Allow kids to interact, ask questions, and figure out their cards.** When they guess their plant or animal, they can continue to answer the questions of their classmates. Be ready to help if kids need additional clues or guidance.

ASSESSING STUDENT LEARNING

Allow each student to secretly pick one **Wildcard**. Ask students to write at least five clues about the plant or animal shown on their cards. They should arrange their clues so that the clues start general and get more specific. When the students are finished, ask them to take turns reading their clues and allowing the rest of the class to guess the identities of the plants or animals described. Post the clues and **Wildcards** on the bulletin board so that everyone has a chance to read them.

EXTENDING THE LEARNING

Meet the invasives. Try the game again with invasive species cards to review Wisconsin's non-native invasive species.

FINDING OUT MORE!

EEK! (Environmental Education for Kids!). Ed. Carrie Morgan. Wisconsin Department of Natural Resources. 2012. Electronic magazine for kids in grades 4 - 8. <http://dnr.wi.gov/eek/>

Amphibians of Wisconsin, **Snakes of Wisconsin**, and **Turtles & Lizards of Wisconsin**. Rebecca Christoffel, Robert Hay, Michelle Wolfgram, Lisa Ramirez, and Megan Monroe. Wisconsin Department of Natural Resources. <http://dnr.wi.gov/topic/WildlifeHabitat/herpBooks.html>

Tree Identification. Leaf–Wisconsin's K-12 Forestry Education. 2012. <www.uwsp.edu/cnr-ap/leaf/Pages/TreeKey/treeToIdentify.aspx?feature=Main>

Wisconsin State Endangered and Threatened Species. Wisconsin Department of Natural Resources. 2012. <http://dnr.wi.gov/topic/endangeredresources/etlist.html>

Fishing Wisconsin. Wisconsin Department of Natural Resources. 2012. <http://dnr.wi.gov/topic/fishing/>

Wonderful, Wacky, Water Creatures. Suzanne Wade. University of Wisconsin – Extension. 2001. GWQ023 <http://clean-water.uwex.edu/pubs/pdf/wwwc.pdf>

Birds of Wisconsin. Stan Tekiela. 1999.

Fishes of Wisconsin. George C. Becker. 1983, 2001.

Mammals of Wisconsin. Hartley H. T. Jackson and A.W. Schorger. 1961.

Wildflowers of Wisconsin. Stan Tekiela. 2000.

FAVORITE WISCONSIN

WILD THINGS

METHOD

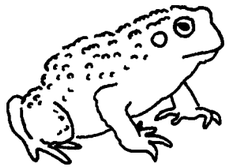
Impress the kids with a simple magic trick. Then, let them discover the natural charm of Wisconsin's native plants and animals.

GRADES

3 – 6

ACTIVITY TIME

One or two 50-minute periods



SETTING

Inside

MATERIALS

- **Wisconsin Wildcards: Natives** (see list on page 113). You will need 21 different cards for each group of 3 - 4 kids.
- Reference books
- Internet access

SCOUT CONNECTIONS

Junior Girl Scouts: Animal Habitats

INTRODUCTION

Wisconsin is packed full of wild plants and animals. In fact, we have some very cool wild things. From whooping cranes to dune thistles, most everyone can find something fascinating, beautiful, or weird to marvel at.

DOING THE ACTIVITY

1. **Impress the kids with a magic trick.** Use the directions on page 95.
2. **Share the secret of the trick with the kids.** If you choose, you can teach the kids how to do the trick. Divide the kids into groups of 3 - 4 and give each group 21 cards to practice.
3. **Allow the kids to select their favorite Wisconsin natives.** Display the Wildcards featuring native plants and animals and encourage the kids to pick one card each to learn more about.

4. **Do some research.** Using the information on the cards, websites listed below, library books, or other reference materials, encourage the kids to find out interesting facts, stories, or other information to share with their classmates and friends.
5. **Present the information.** The kids can write a story, draw a picture, or give a talk about their favorite Wisconsin native.

ASSESSING STUDENT LEARNING

Assess the completeness and effectiveness of individual presentations. If you will be grading presentations, give students a rubric.

FINDING OUT MORE!

EEK! (Environmental Education for Kids!). Ed. Carrie Morgan. Wisconsin Department of Natural Resources. 2012. Electronic magazine for kids in grades 4 - 8. <http://dnr.wi.gov/eek/>

enature. National Wildlife Federation. 2012. Online field guide to plants and animals. <www.enature.com>

Ranger Rick's Go Wild. National Wildlife Federation. 2012. Online version of **Ranger Rick** magazine filled with information and activities. Click on the Ranger Rick icon. <www.nwf.org/kidzone>

Bird, Butterfly & Moth, Pond & River, Mammal, Insect, Tree, and more. Eyewitness Books series. Books with great photographs and interesting information in a very attractive format.

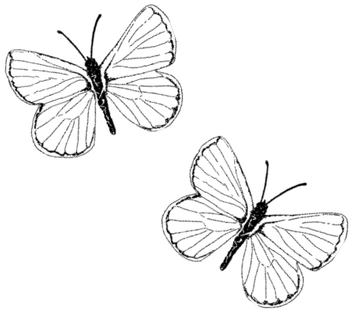
RARE SKETCHES

METHOD

With kids sitting back-to-back in pairs, one kid sketches a rare plant or animal while the other kid describes it without saying the name or giving away the identity. Afterwards, kids discover the value of natural history sketches.

GRADES

4 – 8



ACTIVITY TIME

20 – 30 minutes, plus homework

SETTING

Anywhere

MATERIALS

- **Wisconsin Wildcards: Natives** (see list on page 113). Select from the following cards: Black Rat Snake, Blanding's Turtle, Bullsnake, Butler's Gartersnake, Eastern Hognose Snake, Eastern Massasauga Rattlesnake, Eastern Racer, Northern Ribbon Snake, Ornate Box Turtle, Queen Snake, Timber Rattlesnake, Western Ribbon Snake, Western Slender Glass Lizard, Wood Turtle, Blanchard's Cricket Frog, American Woodcock, Blue-winged Teal, Canvasback, Common Loon, Great Blue Heron, Greater Prairie-chicken, Northern Bobwhite, Peregrine Falcon, Redhead, Sharp-tailed Grouse, Short-eared Owl, Trumpeter Swan, Whooping Crane, American Bison, Elk, Canada Lynx, Dwarf Lake Iris, Dune Thistle, Prairie Bush Clover, Karner Blue Butterfly, Paddlefish
- Paper, pencils, and hard surface for sketching (1 for each pair of kids)
- Lewis and Clark's journals on the Internet or the published works of John James Audubon and other famous naturalists

STANDARDS

English Language Arts: B.4.1, B.8.1

SCOUT CONNECTIONS

Boy Scouts of America: Environmental Science
Junior Girl Scouts: Camper

INTRODUCTION

Who likes to draw? Sketching is a great pastime, but that's not all. Sketching can help people relax, record valuable information, express deep feelings, and remember details. Sketching is particularly valuable for people who enjoy spending time outdoors.

DOING THE ACTIVITY

1. **Try a practice sketch.** Read the description on page 17. Ask the students to make a simple sketch as you read the description aloud. Ask them to say nothing as you read, even if they think they know what they are drawing!
2. **Compare the sketches to the original drawing.** Make a quick sketch of the drawing on a chalkboard or poster board. How closely do the kids' drawings match the original drawing? What was difficult about the sketching? What was easy? Discuss what types of details would help them draw more accurate sketches.
3. **Divide kids into pairs.** Ask the kids to sit back-to-back. The sketcher in each pair will need a piece of paper, a pencil, and a clipboard or book to write on.
4. **Give each pair a Wildcard.** Don't let the sketchers see the cards!
5. **Start talking and sketching.** The kids with the cards should describe the plants or animals featured on their cards using as much detail as possible. They should not say anything about the plants or animals other than describing shapes, colors, and orientations.
6. **Compare the sketches with the photos on the cards.**
7. **Switch places and do the activity again with a new card.**
8. **Think about the value of sketches.** Scientists, naturalists, and explorers have been making sketches to document new species, rare species, and unusual variations in species for years. Lewis and Clark didn't just explore, they documented amazing plant and animal life for people who would never see the western areas of our continent. It's difficult to sketch something you can't see. It's not that hard to sketch something you can see. Look at the works of Lewis and Clark, Audubon, or other early explorers.
9. **Try a field sketch.** Ask kids to do more detailed field sketches of plants or animals located near their homes. Tell them to model their field sketches after the sketches you looked at in books, on the Internet, and on page 18. They should include distinguishing features, color attributes, different positions, and narrative to accompany the sketch.

ASSESSING STUDENT LEARNING

Evaluate field sketches according to the criteria outlined in class.

EXTENDING THE LEARNING

Invent a version of Pictionary® to play with the Wildcards.

Investigate rare things. Encourage the kids to find out more about the plants or animals that they sketched. Why are they rare? Where are they found in the state? What is being done to stabilize their populations? Visit the Wisconsin Department of Natural Resources – Bureau of Endangered Resources Web page. <http://dnr.wi.gov/topic/endangeredresources/etlist.html>

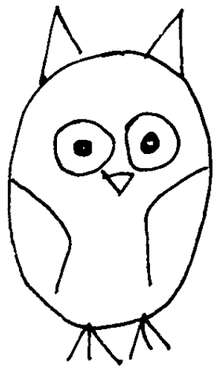
FINDING OUT MORE!

The Journals of Lewis and Clark. American Philosophical Society. 2012. <www.amphilsoc.org/exhibits/treasures/landc.htm>

Drawing from Nature. Jim Arnosky. 1982. Learn to draw water, land, plants, and animals.

PRACTICE SKETCH

Read these directions slowly. Ask the students to make a simple sketch as you read. Tell them that this is a challenging exercise and their drawings won't be perfect. Advise them that their success will be based more on listening skills than on drawing skills. Ask them to say nothing as you read, even if they think they know what they are drawing! Read each step in the directions two times. Ask students to listen the first time and follow the directions the second time.



"Start by drawing an oval shape that is taller than wide. Draw a very light vertical line that cuts the oval in half. Go to the top of the oval. On one side of the center line, draw a small upside down "V" outside the oval. Be sure the two ends of the "V" touch the outside of the oval. Repeat on the other side of the center line.

"Divide the oval into three parts from top to bottom by drawing two very light lines from side to side. Go to the top third of the oval. On either side of the center line, draw two circles so that the circles take up about half of the horizontal distance. Inside the circles, draw smaller circles and color them black. Centered just under the large circles, draw an isosceles triangle with the point down.

"Go to the bottom of the oval. On one side of the vertical center line, draw an upside down "V" on the outside of the oval. Be sure that the bottom point of the "V" touches the outside of the oval. Draw another "V" on the other side of the vertical center line. Draw a vertical line through the center of each "V" to cut the angle it makes in half.

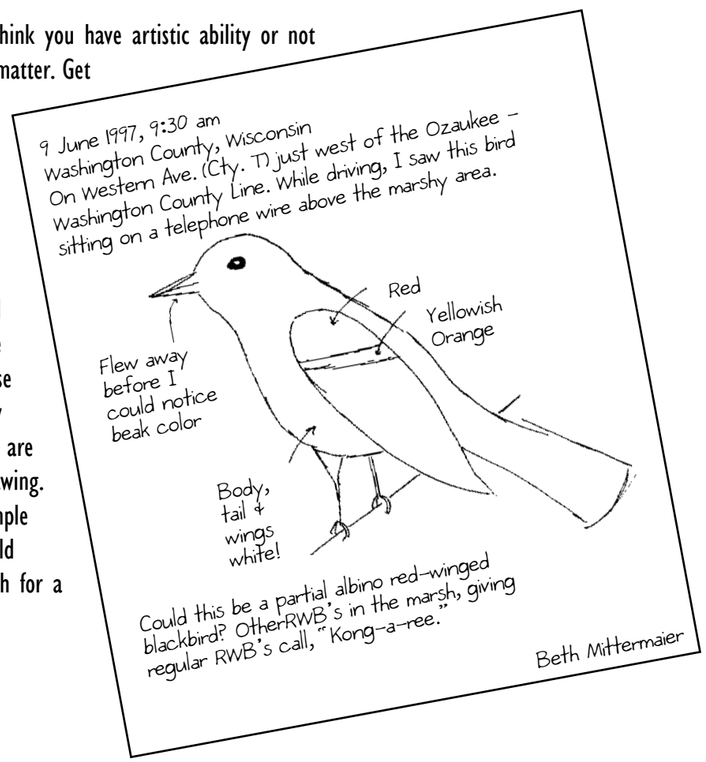
"Go to the middle of the right side of the oval. Starting just inside the oval, draw a line that slopes gradually downward toward the middle of the oval. Before you get to the center line, make a gentle curve and head back toward the outline of the oval. Your line should end up to the right of the upside down "V's" at the bottom. Make a mirror image of this line on the other side. What do you have?"

WHAT'S RARE OR UNUSUAL?

When you visit a park or nature center for the first time, everything is rare and unusual! But if you spend a lot of time outside, you will begin to recognize the common plants and animals. You'll also learn how they should look and act at different times of the year. When you are very familiar with a place, you will also notice when something is really new, rare, or unusual. For example, you might notice a flower that you have never seen before. It could be a flower that only blooms for a day or two, it could be an invasive species that just invaded your favorite place, or it could be a rare species that only blooms once in its lifetime. This is your big chance! You alone can document it. Here are some things you probably want to include in your documentation so that others can learn from your discovery:

- Name of observer
- Date and time
- Specific location so someone else can find the right area (e.g., trail, road, county)
- Written description
- Sketch

Whether you think you have artistic ability or not really doesn't matter. Get out a piece of paper and make a rough sketch. Try to get the basic shape. Add colors and patterns in the right places. Use notes to clarify the things you are seeing and drawing. Here's an example of a simple field note and sketch for a strange bird.



5-MINUTE UGLY

METHOD

Take a look at **Wildcards** showing "less-than-popular" plants and animals and find something good about them. Follow up with a look at truly hazardous plants and animals.

GRADES

3 – 8

ACTIVITY TIME

20 – 40 minutes

SETTING

Anywhere

MATERIALS

- **Wisconsin Wildcards: Natives and Alien Invaders** (see pages 113 and 114). Select the following cards: Poison Ivy, Wild Parsnip, Leafy Spurge, Eurasian Water Milfoil, Earthworms, Gypsy Moth Caterpillar, Gypsy Moth Egg Mass, Eastern Tent Caterpillar, Forest Tent Caterpillar, Web Worm, Friendly Fly, Asian Lady Beetle, Eastern Massasauga Rattlesnake, Black Rat Snake, Timber Rattlesnake, Muskrat, Striped Skunk, Giant Silkmoth Caterpillar, Black Fly Larva, Riffle Beetle, Sowbug, Dobsonfly Larva, Leech, Snipe Fly Larva, Paddlefish, Shovelnose Sturgeon, Common Carp, Black Spot, Three Spine Stickleback, Spiny Water Flea, Sea Lamprey, and Rusty Crayfish. These 32 cards provide a good variety of "less-than-popular" plants and animals. Use doubles if you need more.

SCOUT CONNECTIONS

Webelos: Naturalist

INTRODUCTION

There are a lot of plants and animals to see in Wisconsin. Some are beautiful; some are ugly. There are only a few really "bad" ones, and they can itch, sting, bite, and drive you crazy! We're talking poisonous plants, blood-sucking insects, and other outdoor hazards. Your best defense is a good offense. Know the enemy!

DOING THE ACTIVITY

1. **Look at Wildcards.** Sit in a circle. Spread the assortment of cards in the center of the circle. Take five minutes for the kids to point out cards that they think show "ugly" plants or animals.
2. **Talk about their choices.** Are there any plants or animals that everyone thinks are "ugly." Are some so ugly they're cute? Why do we think they are ugly? Are the reasons based on fact or fear? Use the backs of the cards to list at least one "good",

"beautiful", or "amazing" thing about each "ugly" plant and animal. Remind kids that it doesn't really matter what we think! Plants and animals have important jobs in nature, and they do them no matter how they look! What about the invasive species? Do they have any redeeming qualities?

3. **Separate the opinions from the facts.** Take one more look at the cards. Identify the plants and animals that could be hazardous to people. Look at the cards for poison ivy, wild parsnip, striped skunk, leafy spurge, gypsy moth egg cases and caterpillars, and eastern tent caterpillars. Find out why you wouldn't want to touch any of these. Talk about where timber rattlesnakes and massasaugas live. See **Outdoor Hazards in Wisconsin** for more information. Reference below.
4. **Discuss how to protect yourself from hazardous plants and animals.** See page 21 for discussion points.

Assessing Student Learning

Using the information from the discussion, ask kids to draw a picture of someone with the right clothing and equipment to protect them from any hazardous plant or animal they might encounter. Give the students permission to have fun with this assignment!

Extending the Learning

Invent a hazard-avoidance device. Challenge kids to invent something to protect themselves from a particular outdoor hazard. The inventions can be real or make-believe. For example, they could invent a poison ivy alarm that goes off when a poison ivy plant is detected within a 25-foot radius or a personal mosquito zapper that attracts and kills any mosquito that lands on a person's body or clothing.

Collect bee sting remedies. While some people are extremely allergic to bee stings, for most of us a bee sting is not much more than a painful inconvenience. People have tried all kinds of things to take away the sting! How many home remedies can your kids find? Is anyone willing to test them next time they get a sting? Here are some real odd ones to get you started: toothpaste, onion slices, ear wax, and meat tenderizer!

Read about animals whose reputations have been tarnished. The big bad wolf might not be as big and bad as children's stories indicate. Read **The True Story of the 3 Little Pigs by A. Wolf** by Jon Sciezska or **The Three Little Wolves and the Big Bad Pig** by Eugene Trivizas for a fresh and funny look at our perceptions of wolves.

Finding Out More!

Outdoor Hazards in Wisconsin: A Guide to Noxious Insects, Plants and Wildlife. Scott R. Craven, Robert C. Newman, and Phillip J. Pellitteri. 2004. Cooperative Extension of the University of Wisconsin – Extension. <http://learningstore.uwex.edu/Assets/pdfs/G3564.pdf>

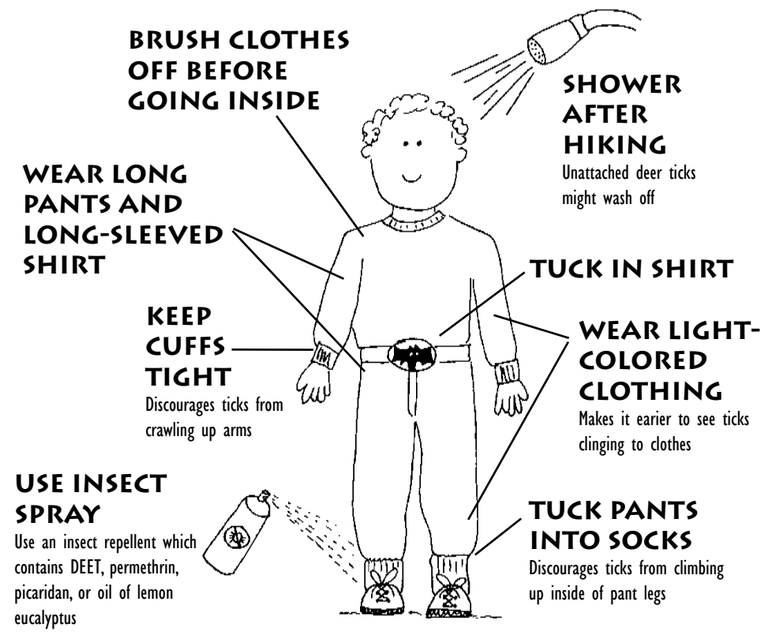
GO WILD WITH WISCONSIN WILDCARDS!

Enjoy the Good Avoid the Bad

Following some simple guidelines can really improve your outdoor experience. Try these:

- Always let an adult know where you are going and when you will return.
- Talk with an adult about what hazards you might encounter.
- Wear long sleeves and long pants to minimize exposed skin.
- Wear light-colored clothing so that ticks are easier to see.
- Leave perfumes, shampoos, deodorants, and other "smelly" personal products at home.
- If you think you have touched a poisonous plant, wash your body and your clothes thoroughly with soap and water.
- If you are allergic to bees or other stinging insects, carry your medication with you when you hike and wear your medical alert identification.
- Use insect repellents containing DEET carefully. Follow the manufacturer's label.
- In bear country, talk and sing with friends or make noise so that you don't surprise a bear.
- Don't try to capture an animal that you are unfamiliar with (e.g., snakes, snapping turtles, mudpuppies, shrews, hairy caterpillars, dragonfly larvae, and other potential slimers and biters). Remember, if an animal surprises you and you drop it, the animal might get hurt.
- Don't taste any wild plant, berry, nut, or mushroom unless you are sure of its identification and edibility.

Dress Defensively Against Ticks!



NATURE IN JEOPARDY?

METHOD

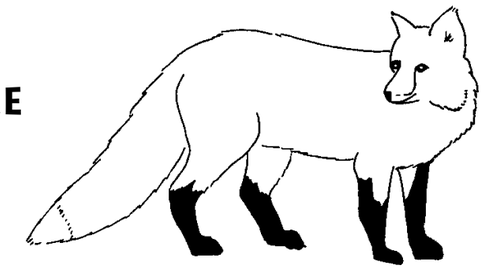
Discover how scientists know so much about Wisconsin's plants and animals, why there are so many things they don't know, and how they are trying to find the answers to some of the questions before it's too late.

GRADES

4 – 8

ACTIVITY TIME

30 – 45 minutes



SETTING

Anywhere

MATERIALS

- **Wisconsin Wildcards: Natives** (see list on page 113). Each team will need a complete deck of these cards.
- **Nature in Jeopardy?** on pages 29 - 30.
- Internet access

STANDARDS

Science: B.4.1, B.8.5
Social Studies: A.4.5

SCOUT CONNECTIONS

Boy Scouts of America: Environmental Science, Fish and Wildlife Management

INTRODUCTION

We know a lot about the plants and animals that live in Wisconsin. Scientists have discovered most of the species that live here. We know blooming cycles for wildflowers, average litter sizes for mammals, hibernation patterns for reptiles, and many, many more facts and figures. There are also many things we don't know.

DOING THE ACTIVITY

1. **Test your group's grasp of nature trivia.** Divide into two teams. Give each team a set of **Wisconsin Wildcards: Natives** to help them find answers. Ask the first player on the first team a question from **Nature in Jeopardy?** on pages 29 - 30. If the first player can't answer the question, open the question to the whole team. If the team can't answer, offer the question to the opposing team. A correct answer scores one point. Continue the game by alternating between teams until everyone has had a chance to answer a question. High score wins.
2. **Discuss how we know what we know.** Talk about how the information for the cards might have been gathered. For example, how do we know the diets of certain animals, the sizes of the state record trees, or the habitats of threatened reptiles? Much of this information has been gathered through research, field work, and surveys. Help the kids realize that while we know a lot, there is still much to learn!
3. **Find out how we gather information.** The Department of Natural Resources, other state and federal agencies, and private nature organizations conduct regular surveys to collect valuable information about Wisconsin's natural resources. Either share some of the ongoing surveys listed on pages 25 - 27 or ask the kids to search the Internet for information on monitoring programs and surveys in the state.

ASSESSING STUDENT LEARNING

Ask students to pick one of the surveys listed in this activity. Students should determine what information the survey is tracking, who conducts the survey, and how the information is used.

EXTENDING THE LEARNING

Get involved! Choose one of the surveys listed in this lesson and see if your group can get involved. The surveys marked with a (!) are recommended for individuals with little or no scientific monitoring experience. If you can't be a part of a survey, invite a citizen scientist to visit your classroom or meeting. Ask them to share how they became involved in the research, how they gather information, and what they have learned as a result of their involvement.

FINDING OUT MORE!

Wisconsin NatureMapping. Beaver Creek Reserve, Wisconsin Department of Natural Resources, and the Aquatic and Terrestrial Resources Inventory. 2012. Links to species lists, maps, surveys, and other information maintained by partner organizations. <www.wisnatmap.org/default.htm>

Wisflora: Wisconsin Vascular Plant Species. Wisconsin State Herbarium, University of Wisconsin – Madison. 2012. Photos, habitat information, distribution maps, herbarium specimen data, and more. <www.botany.wisc.edu/wisflora/>

WHO'S WATCHING?

There are more people watching, monitoring, and surveying Wisconsin's plants and animals than most people realize. And that is a very good thing, because there are a lot of plants and animals to keep track of – many more than scientists and resource specialists can possibly cover!

Thanks to a growing number of citizen monitoring programs, we are learning more about plants, animals, and habitats in Wisconsin. Join the fun, help collect valuable information, and discover that we really have a lot to learn about the plants and animals in Wisconsin.

Surveys marked with a (*) depend on citizen scientists. Surveys marked with a (!) are recommended for people with little or no scientific monitoring experience. Visit the **Wisconsin Citizen-based Monitoring Network** website for a more comprehensive list of citizen-based inventory and monitoring programs, including some local and regional programs. <http://wiatri.net/cbm/>

PLANTS

Rare Plant Field Reports*
Wisconsin Department of Natural Resources
<http://dnr.wi.gov/topic/EndangeredResources/rareplantform.asp>

ANIMALS

Rare Animal Field Report*
Wisconsin Department of Natural Resources
<http://dnr.wi.gov/topic/EndangeredResources/rareanimalform.asp>

Wildlife Watch*!
National Wildlife Federation
<www.nwf.org/wildlifewatch/>

MAMMALS

Wisconsin's Volunteer Carnivore Tracking Program*!
Wisconsin Department of Natural Resources
<http://dnr.wi.gov/topic/wildlifehabitat/volunteer.html>

Wisconsin Bat Monitoring*!
Wisconsin Aquatic and Terrestrial Resources Inventory
<http://wiatri.net/inventory/bats/>

Operation Deer Watch*!
Wisconsin Department of Natural Resources
<http://dnr.wi.gov/topic/wildlifehabitat/summerdeer.html>

Large Mammal Observation*!
Wisconsin Department of Natural Resources
<http://dnr.wi.gov/topic/WildlifeHabitat/MammalObsForm.asp>

BIRDS

Celebrate Urban Birds*!
Cornell Lab of Ornithology
<www.birds.cornell.edu/celebration>

Christmas Bird Count*!
National Audubon Society
<http://birds.audubon.org/christmas-bird-count>

Colonial Waterbird Survey*
Wisconsin Department of Natural Resources
<http://dnr.wi.gov/topic/EndangeredResources/waterbirdform.asp>

Great Backyard Bird Count*!
Cornell Lab of Ornithology
<www.birdsource.org/gbbc>

Project FeederWatch*!
Cornell Lab of Ornithology
<http://birds.cornell.edu/pfw>

Wisconsin LoonWatch*
Sigurd Olson Environmental Institute
<www.northland.edu/sigurd-olson-environmental-institute-loon-watch.htm>

Midwest Crane Count*!
International Crane Foundation
<www.savingcranes.org/annual-midwest-crane-count.html>

NestWatch*
Cornell Lab of Ornithology
<http://nestwatch.org/>

North American Breeding Bird Survey*
Patuxent Wildlife Research Center
<www.pwrc.usgs.gov/bbs/>

Rare Bird Documentation*
Wisconsin Society for Ornithology
<http://wsobirds.org/?page_id=3208>

Wisconsin Shorebird Survey*
University of Wisconsin-Green Bay
<www.uwgb.edu/birds/shorebird/>

Trumpeter Swan Observation*!
Wisconsin Department of Natural Resources
<http://dnr.wi.gov/topic/EndangeredResources/SwanReport.asp>

Whopping Crane Observation*!
US Fish & Wildlife Service
<www.fws.gov/midwest/whoopingcrane/sightings/sightingform.cfm>

REPTILES AND AMPHIBIANS

Wisconsin Herpetological Atlas Project*
University of Wisconsin-Milwaukee Field Station
<http://www4.uwm.edu/fieldstation/herpetology/atlas.html>

Wisconsin Frog and Toad Survey*
Wisconsin Department of Natural Resources
<http://wiatri.net/inventory/FrogToadSurvey/>

INVERTEBRATES

Wisconsin's Odonata Survey*
Wisconsin Aquatic and Terrestrial Resources Inventory
<http://wiatri.net/inventory/odonata/>

Butterfly Counts*
North American Butterfly Association*
<www.naba.org/butter_counts.html>

Citizen Stream Monitoring*!
Universtiy of Wisconsin – Extension and Wisconsin Department of Natural Resources
<http://watermonitoring.uwex.edu/wav/index.html>

Great Lakes Worm Watch*
University of Minnesota
<www.nrri.umn.edu/worms/team/ongoing.html>

Mussel Monitoring Program of Wisconsin*
Wisconsin Aquatic and Terrestrial Resources Inventory
<http://wiatri.net/inventory/mussels/>

INVASIVE SPECIES

Wisconsin Invasive Plants Reporting and Prevention Project*
Wisconsin Department of Natural Resources
<http://dnr.wi.gov/topic/Invasives/report.html#verts>

Clean Boats, Clean Waters*!
University of Wisconsin – Extension and Wisconsin Department of Natural Resources
<http://www4.uwsp.edu/cnr/uwexlakes/CBCW/>

Zebra Mussel Watch*!
University of Wisconsin – Sea Grant Institute
<http://seagrant.wisc.edu/zebramussels/>

NATURE IN JEOPARDY?

QUESTIONS

The questions are listed by category to aid in giving clues. Choose questions that match the cards in your deck. Mix them up when playing!

INSECT PESTS

What animal spins silk in trees? (eastern tent caterpillar)
What animal might seem like a nice guy, but he's really a pest? (friendly fly)

MATCH YOUR CATCH!

Name the spoon-billed fish that is a threatened species in Wisconsin. (paddlefish)
Name the native fish that eats nothing as an adult and dies after spawning. (American brook lamprey)
What is Wisconsin's state fish? (muskellunge)
If you wanted to catch this fish, you might use grasshoppers as bait. (shorthead redhorse)
What Wisconsin species was around when dinosaurs roamed the earth? (lake sturgeon, shortnose gar, or longnose gar)
Name a Wisconsin fish that can get oxygen by gulping air **and** breathing underwater like other fish. (bowfin, longnose gar, or shortnose gar)
What Wisconsin fish makes a drumming sound to signal the start of the spawning season? (freshwater drum)

RARE / THREATENED / ENDANGERED

Name an animal that can dive at speeds up to 200 mph. (peregrine falcon)
What animal can sprint at speeds up to 40 mph? (gray wolf)
What is the status of prairie bush clover? (endangered in Wisconsin, threatened in United States)
What Wisconsin plant takes years to mature, flowers only once, and dies after it blooms? (dune thistle)
Name a Wisconsin owl that nests in grasslands. (short-eared owl)
What Wisconsin bird learns its migration route by following an ultralight plane? (whooping crane)

NATIVE SPECIES

The caterpillar of what butterfly eats only wild lupine? (Karner blue butterfly)
What animal lives only a few hours as an adult? (mayfly)
How old is a common loon before it grows the black and white feathers of an adult? (four years old)
Which group of moths have wings with large eyespots that can startle predators? (giant silkmoths)
How long is a giant silkmoth caterpillar? (up to four inches)
Name the Wisconsin predator that has an extendable lip to help it catch prey. (dragonfly larva)
Name an animal that builds a case around its body with silk, sand, and vegetation. (caddisfly larva)
What animal can live in hot springs with temperatures up to 104^{0}F? (sideswimmer)

FURBEARERS / LARGE MAMMALS / RABBITS & HARES

Name the only Wisconsin predator that regularly eats porcupines. (fisher)
What animal has an Algonquin Indian name? (raccoon)
Name the only Wisconsin canine that has retractable claws. (gray fox)
Name Wisconsin's largest rodent. (beaver)
What animal "changes its coat" from summer to winter? (snowshoe hare)
What is Wisconsin's largest carnivore? (black bear)
What is Wisconsin's "State Wildlife Animal"? (white-tailed deer)

WATERFOWL / WADING BIRDS / UPLAND GAME BIRDS / RAPTORS

Name the only duck that you might find perched on a tree branch in Wisconsin? (wood duck)
What Wisconsin bird is nicknamed "timberdoodle"? (American woodcock)
Name the bird that prefers to run from predators even though it can fly over 55 mph? (wild turkey)
Name the commonly seen bird that is a cousin to the rare whooping crane. (sandhill crane)
Name a Wisconsin bird that eats porcupines and skunks. (great horned owl)

NATIVE REPTILES AND AMPHIBIANS

How old are Blanding's turtles before they can breed? (17 – 20 years)
What animal has a tail that can shatter like glass when grabbed by a predator? (western slender glass lizard)
Wisconsin has one turtle that lives only on land. Name it. (ornate box turtle)
What animal's call sounds like two ball bearings clicking together? (Blanchard's cricket frog)
Other than a fox, what animal smells like a fox? (western fox snake)

WILD LINKS

METHOD

Play a domino-like game that encourages kids to think of how plants and animals are connected to each other through food chains, similar habitats, or taxonomy.

GRADES

3 – 5

ACTIVITY TIME

20 – 30 minutes

SETTING

Anywhere

MATERIALS

- **Wisconsin Wildcards: Natives** (see list on page 113). You will need 28 different cards for each group of 3 - 4 kids. Try to give each group a good mix of plants and animals.

STANDARDS

Environmental Education: B.8.8
Science: F.4.1

INTRODUCTION

Everything is connected to everything else. What does that mean? (Encourage some discussion on how plants, animals, the environment, and people all depend on each other for survival.) How hard would it be to make a connection between two apparently unrelated things? For example, could you make a connection between fish and ash trees?

DOING THE ACTIVITY

1. **Play Wild Links.** Divide into groups of 3 - 4 and follow the directions on page 109 to play this domino-based game.
2. **Discuss connections.** Ask kids to list the kinds of connections they made between the plants and animals in the game. Here are some possible links:
   - Taxonomy – links based on the classification of living things
   - Energy transfer – links based on "who eats who"
   - Habitat – links based on living in the same area
   - Trophic level – links based on similar lifestyles (omnivores, herbivores)

3. **Sort cards by different categories.** Still in groups, ask the kids to sort their cards by any of the categories listed above.

ASSESSING STUDENT LEARNING

Given a stack of wildcards, students can devise a classification system that includes all the cards.

EXTENDING THE LEARNING

Think about links. Discuss how chemicals, invasive species, weather, and other environmental changes can have negative impacts on food chains.

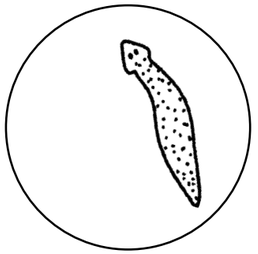
HABITAT TOSS

METHOD

Toss Wildcards into their "habitats." Then, design new cards for plants and animals that live in Wisconsin's forests, wetlands, and prairies.

GRADES

3 – 4



ACTIVITY TIME

One or two 50-minute periods

SETTING

Inside

MATERIALS

- **Wisconsin Wildcards: Natives** (see list on page 113). You will need 8 - 10 cards per kid. Try to give each kid a good mix of terrestrial and aquatic plants and animals.
- Cardboard boxes labeled "forest," "wetland," and "prairie" (3)
- Habitat posters <http://dnr.wi.gov/eek/nature/habitat/index.htm>

STANDARDS

English Language Arts: E.4.3
Environmental Education: B.4.5

SCOUT CONNECTIONS

Junior Girl Scouts: Animal Habitats

INTRODUCTION

There are many different habitats in Wisconsin. They vary from bogs to boreal forests to beaches to barrens. Each habitat is unique, but each one provides the plants and animals that live there with everything they need to survive.

DOING THE ACTIVITY

1. **Play Habitat Toss.** Follow the directions on page 98 to teach your kids how to toss cards accurately. Then, encourage kids to take turns playing the game. You might choose to divide the kids into 2 - 3 teams that are competing against each other.
2. **Look through the habitat containers.** After the game, sort through the cards in each "habitat." Make a list on the board or large piece of paper showing the plants and animals found in each habitat. Correct any cards that ended up in the wrong place due to lack of aim or information!

3. **Check out the habitat posters.** If you have the actual posters, tack them to a bulletin board. (If you don't have the posters, let the kids view them on the EEK! website.) Around each poster, display the **Wildcards** representing plants and animals in that habitat. Add the names of plants and animals shown on the posters that are not featured on **Wildcards**. (See list on page 35.)
4. **Create Wildcards for additional plants and animals.** Invite students to design cards for the plants and animals found in the different habitats that haven't been featured on **Wildcards**.

ASSESSING STUDENT LEARNING

Give students a rubric to grade their cards. Their new cards should follow the design of **Wisconsin Wildcards** and include the following:

- A colorful drawing or photo of the plant or animal
- Both scientific and common name
- Basic description
- Habitat information
- An interesting, fun, or WILD! fact
- A website to go to for more information
- Credits for the photo or information (if needed)
- Logos of sponsoring organizations (they can make this up!)

EXTENDING THE LEARNING

Pinpoint nearby natural communities. Forest, wetland, and prairie are three general habitat classifications. The Natural Heritage Inventory has identified 71 distinct natural communities in Wisconsin. As a class, identify a natural area or state park in your area. Try to figure out which description/s best fit this area. You can find the descriptions on the WDNR website. <http://dnr.wi.gov/topic/endangeredresources/communities.asp>

Identify your ecological landscape. Resource specialists in the WDNR have defined 16 ecological landscapes in Wisconsin. Ecological landscapes are areas that have unique combinations of physical and biological characteristics that make up the ecosystem, such as climate, geology, soils, water, or vegetation. They differ in levels of biological productivity, habitat suitability for wildlife, presence of rare species and natural communities, and in many other ways that affect land use and management. To find out which ecological landscape your community is located in, visit the WDNR website. <http://dnr.wi.gov/topic/landscapes/>

Toss the invasives! Play this game with the invasive species cards to help kids learn which habitats are being invaded by which non-native species.

FINDING OUT MORE!

Wisconsin Naturally: A Guide to 150 Great State Natural Areas. Wisconsin Department of Natural Resources. 2003. To order, visit the Endangered Resources website. <http://dnr.wi.gov/topic/lands/naturalareas/>

Backyard, Pond, and Woods. Donald Silver. One Small Square series. Each book features the diversity of life that can be found in one cubic foot of space in each habitat.

WISCONSIN HABITATS

* Indicates Wisconsin Wildcard is available

FOREST

Black Bear *
Bobcat *
Flying Squirrel
Porcupine
Snowshoe Hare *
White-tailed Deer *
Barred Owl
Goshawk
Ovenbird
Red-headed Woodpecker
Ruffed Grouse *
Fox Snake *
Redbacked Salamander
Luna Moth
Balsam Fir
Paper Birch
Sugar Maple
Yellow Birch
Black Currant
Bunchberry
White Trillium

PRAIRIE

Badger
Meadow Vole
13-lined Ground Squirrel
American Kestrel
Bobolink
Eastern Meadowlark
Prairie Chicken *
Sandhill Crane *
Upland Plover
Prairie Ringneck Snake
Karner Blue Butterfly *
Yellow-faced Bee
Big Bluestem
Indian Grass
Little Bluestem
Sideoats
Blazing Star
Compass Plant
Lupine *
Prairie Coneflower
Prairie Dock
Purple Coneflower
Wild Indigo

WETLAND

Beaver *
Mink
River Otter
Common Yellowthroat
Great Blue Heron *
Osprey
Red-winged Blackbird
Wood Duck *
Blanding's Turtle *
Salamander
Western Chorus Frog
Muskie *
Dragonfly
Willow
Arrowhead
Cattail *
Yellow Lotus

DELICATE BALANCE

METHOD

Master a card stunt that demonstrates the challenge of balancing the preservation of our natural heritage with the recreational demands placed on state parks, forests, and trails.

GRADES

5 – 8

ACTIVITY TIME

One or two 50-minute periods

SETTING

Classroom

MATERIALS

- **Wisconsin Wildcards: Special Places, State Forests, and Natives** (see lists on page 115 and 113). You will need 1 "place" card and at least 5 native plants and animals for each pair of kids. **Note: Cards come in several thicknesses. Thin cards will not work for this trick!**
- Internet access

STANDARDS

Environmental Education: B.8.6, B.8.15
Science: F.8.10
Social Studies: A.8.1

INTRODUCTION

Wisconsin has a strong tradition of outdoor recreation **and** a strong commitment to conservation of natural resources. As our population continues to grow, these two are often in conflict. It is the goal of state land managers to find the delicate balance that allows Wisconsinites to recreate without damaging the natural resources that we love.

DOING THE ACTIVITY

1. **Pass out one "place" card and five random native plant and animal cards to each pair of kids.**

2. **Show the card stunt.** Follow the directions for **Delicate Balance** on page 94 to show kids how state properties support natural populations.
3. **Find the properties on a state map.** Make a list of the recreational opportunities that are available at the property by visiting the WDNR's **Find a State Park or Forest** website. <http://dnr.wi.gov/topic/parks/>
4. **Determine if the plants and animals could live on the property.** Using the **Wildcards**, Internet, and other resource materials, ask students to find out if the plants and animals they were given could live on their state property. If not, ask them to find **Wildcards** for plants and animals that could live there.
5. **Uncover conflicts.** List some of the potential conflicts between wildlife management, vegetation management, and recreation at their property. For example:
   - horses vs. restoration of natural habitats
   - dogs vs. nesting birds
   - motorized vehicles vs. wildlife
   - campground development vs. natural habitat for plants and animals
   - garbage cans vs. wildlife
   - pollution vs. water quality
6. **Discuss the delicate balance.** State properties have two missions. One is to preserve and protect natural resources. The other is to provide recreation. Ask students to find evidence of balance at work. For example:
   - Are certain recreational opportunities confined to limited areas on the property?
   - Are any recreational opportunities not permitted?
   - Who decides what is permitted and what is prohibited on a specific property?

ASSESSING STUDENT LEARNING

Resource specialists in the WDNR have defined 16 ecological landscapes for Wisconsin. Ecological landscapes are areas that have unique combinations of physical and biological characteristics that make up the ecosystem, such as climate, geology, soils, water, or vegetation. They differ in levels of biological productivity, habitat suitability for wildlife, presence of rare species and natural communities, and in many other ways that affect land use and management.

Ask students to find out which ecological landscape their "places" are in by visiting the WDNR website. <http://dnr.wi.gov/topic/landscapes/> Ask students to summarize what they have discovered about their state properties. Ask them to report on the challenges state properties face in different parts of the state.

EXTENDING THE LEARNING

Discover State Natural Areas. The management of State Natural Areas is very different from other state properties. Ask students to find out how State Natural Areas are established, managed, and protected. Name some recreational activities that would be permitted. Name some activities that would be prohibited. Why are State Natural Areas so different?
<http://dnr.wi.gov/topic/Lands/naturalareas/>

LASSST ONE LOSESSS

METHOD

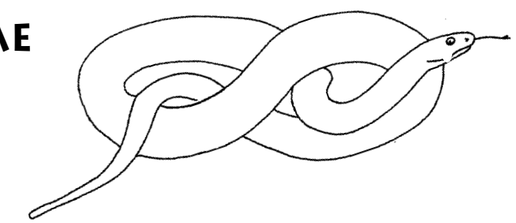
Play a challenging game of strategy while learning about endangered and threatened reptiles in Wisconsin.

GRADES

5 – 8

ACTIVITY TIME

30 – 45 minutes



SETTING

Anywhere

MATERIALS

- **Wisconsin Wildcards: Native Reptiles** (see list on page 113). You will need 15 snake and/or turtle cards for every 2 - 4 kids. **Note: If reptile cards are not available choose other rare plants or animals. See list on page 15.**
- **Snakes of Wisconsin**
- **Turtles & Lizards of Wisconsin**
- Internet access

STANDARDS

Environmental Education: B.8.3
Science: F.8.9

SCOUT CONNECTIONS

Boy Scouts of America: Fish and Wildlife Management, Reptile and Amphibian Study

INTRODUCTION

Some snakes and turtles aren't doing very well in Wisconsin. Human activities like home and business construction, wetland filling, and road expansion continue to destroy their habitats. Some people kill or capture snakes and turtles out of curiosity or fear. Of the 21 species of snakes, 14 are listed by the Bureau of Endangered Resources as endangered, threatened, or of special concern as of the year 2012. Five of Wisconsin's 11 turtle species

are listed as endangered, threatened, or of special concern. Let's take a few minutes to meet these reptiles.

DOING THE ACTIVITY

1. **Play Lassst One Losesss.** Follow the directions on page 101 to play this challenging game. Since only four groups can play at once, kids will need to take turns playing this strategy game.
2. **Find out more about Wisconsin reptiles.** Use the **Wildcards**, booklets produced by the Bureau of Endangered Resources, and the Internet to find out more about the snakes and turtles that live in your part of the state. Which ones are endangered or threatened? Are there any poisonous snakes in your neighborhood?
3. **Discuss why snakes are important.** Talk about the importance of snakes as predators of insect and rodent pests and their role as food for birds and mammals. Consider their value in contributing to the health and biodiversity of a habitat. Do their declining populations tell us anything about the condition of the places where they live? Discuss the problems of habitat loss due to development and invasive species. Can you find evidence in your community of declining habitats? Have any large suitable habitats been fragmented (divided into smaller parcels) by development or road construction?

ASSESSING STUDENT LEARNING

Have the students use the maps in the booklets referenced below or information on the Internet to put together lists of all the snakes and turtles found in their county. Their lists should indicate the status of each reptile.

EXTENDING THE LEARNING

Read about people who study snakes. Read **The Snake Scientist** to find out how scientists learn about snakes.

FINDING OUT MORE!

Bureau of Endangered Resources. Wisconsin Department of Natural Resources. 2012. <http://dnr.wi.gov/topic/endangeredresources/>

Snakes of Wisconsin. Rebecca Christoffel, Robert Hay, and Lisa Ramirez. Wisconsin Department of Natural Resources. 2000. PUB-ER-100 00. <http://dnr.wi.gov/topic/WildlifeHabitat/herpBooks.html>

Turtles & Lizards of Wisconsin. Rebecca Christoffel, Robert Hay, and Megan Monroe. Wisconsin Department of Natural Resources. 2002. PUB-ER-104 2002. <http://dnr.wi.gov/topic/WildlifeHabitat/herpBooks.html>

The Snake Scientist. Sy Montgomery. 1999. Discusses the work of Bob Mason and his efforts to study and protect snakes, particularly red-sided garter snakes.

WILD HARVEST

METHOD

Imagine you are one of the first European settlers in Wisconsin. Can you find the things that you need to survive?

GRADES

4 – 5

ACTIVITY TIME

20 – 30 minutes

SETTING

Anywhere

MATERIALS

- **Wisconsin Wildcards: Natives** (see list on page 113). Choose a good variety of mammals, birds, fish, invertebrates, trees, and plants. Include speceis that are rare or protected, such as: American Bison, Canada Lynx, Common Loon, Elk, Lake Trout, Paddlefish, Sharp-tailed Grouse, Timber Rattlesnake, Trumpeter Swan, Wood Turtle, Whooping Crane

STANDARDS

Environmental Education: B.4.10
Science: F.8.9

INTRODUCTION

The first European settlers in Wisconsin faced some real challenges. They probably arrived here with a few tools, a cooking pot or two, a weapon, and maybe enough provisions to last a few months. How did they survive?

DOING THE ACTIVITY

1. **Find a plant or animal that could help you survive.** Sit in a circle. Begin passing **Wildcards** around the circle. Ask the kids to consider which plants and animals could help them survive. When they see one, they should hold on to it while continuing to pass the other cards around.

2. **Talk about the choices.** Ask kids to share why they kept the plants or animals that they did. How will those plants or animals help them to survive? Can they provide food, clothing, or shelter?
3. **Share stories of modern day uses.** Ask kids to tell about their personal experiences with harvesting wild plants and animals. Possibilities include picking berries, hunting, fishing, boiling down maple syrup, gathering nuts, or collecting firewood.
4. **Discuss changes.** Ask the kids to turn their cards over and read the backs. Are any of the plants or animals they chose endangered, threatened, or protected? Think about why this might be the case. Reasons include habitat loss, over harvesting, bounties, pollution, and competition from invasive species.
5. **Discuss survival in Wisconsin today.** If you arrived in Wisconsin with only a few supplies, could you survive off the land? What are some things that would make it difficult? Do you know enough about nature? Are there legal restrictions on how many animals you could kill for food or clothing? What would you do when hunting and trapping seasons were over? Where would you live?

ASSESSING STUDENT LEARNING

Ask students to choose **Wildcards** to research. Ask them to answer at least three of these questions:

- How did people use the plant or animal in the early 1800s?
- Has there always been an abundant population of the plant or animal?
- Are people still harvesting this plant or animal today? Why or why not?
- Are there any restrictions (e.g., seasons, bag limits, or size limits) on the harvest of the plant or animal?
- Are there any unusual uses for the plant or animal? For example, mink oil is used to preserve leather, and animal fat is used to make crayons and lipsticks.

EXTENDING THE LEARNING

Be inspired by new art materials. Just as our ancestors experimented with newly-discovered natural resources hundreds of years ago, we have an opportunity to invent uses for invasive species entering our state now. Garlic mustard produces a bright green dye for use on fabrics. Buckthorn wood has a beautiful grain and is good for turning and carving. Phragmites and cat-tails weave into decorative wall hangings and functional mats and ropes. Challenge your students to find a use for a common invasive in your area!

Cook up some revenge. Maybe one of the answers to invasive species control is for us to eat the invasives! Check out recipes for mashed potatoes with garlic mustard, rusty crayfish salad, cooked wild parsnip roots, earthworm patties, and Jambalaya a la Zebra Mussel. You can find many suggestions through simple searches on the Internet. Remember to try any new foods in small portions and with caution.

IMITATING INVADERS

METHOD

Play charades to meet Wisconsin's invasive species. Then, invent super aliens that are equipped with amazing adaptations for invasion and domination.

GRADES

3 – 6

ACTIVITY TIME

One or two 50-minute periods

SETTING

Anywhere

MATERIALS

- **Wisconsin Wildcards: Alien Invaders** (see list on page 114).
- Art supplies

STANDARDS

Environmental Education: B.4.6
Science: F.8.2

INTRODUCTION

Invasive species are tough plants and animals with amazing adaptations for survival. Just check out a few of these facts:

- Eurasian milfoil can make a whole new plant from just a small section of a stem!
- Zebra mussel females can produce 30,000 to 1,000,000 eggs in one year!
- Snakehead fish can live up to 3 days out of water by breathing through a primitive air bladder!
- Kudzu vines can grow up to 12 inches in one day!
- Leafy spurge can shoot its seeds up to 15 feet through the air!

DOING THE ACTIVITY

1. **Look at the Wildcards.** Give kids time to read over the cards. Together, make a list of some of the adaptations that make invasive plants and animals so successful.
2. **Play charades.** Put the cards in a box. Encourage kids to take turns picking a card and acting out the plant or animal shown on the card. Follow the local rules of charades!
3. **Design a super alien.** Instruct students to design a super alien that can invade a specific environment. Their plants or animals must have at least five adaptations that allow them to outcompete native plants or animals. Allow kids to develop their designs on paper or to build them in 3D.

ASSESSING STUDENT LEARNING

Observe students' participation in charades and discussion. Assess their abilities to translate the information into the designs of new invasive species. Students should equip their new plants or animals with adaptations that allow them to compete for food, water, and space.

EXTENDING THE LEARNING

Study real plants. Bring in specimens of local invasive plants to study up close. Caution: Avoid plants that can cause adverse reactions such as wild parsnip, leafy spurge, and spotted knapweed. Use field guides to identify the specimens. Search the Internet for information on countries of origin, means of invasion, special adaptations, and methods of control. Find out if anyone is tracking their spread or trying to control local populations. If possible, try to help them in their efforts!

Play Invaders. See the directions for this card game on page 100.

FINDING OUT MORE!

Invasive Species. Wisconsin Department of Natural Resources. 2012. Find out about invasive plants and animals in Wisconsin. <http://dnr.wi.gov/topic/Invasives/>

Aliens from Earth: When Animals and Plants Invade Other Ecosystems. Mary Batten. 2003. Explores how and why plants and animals enter ecosystems to which they are not native, as well as the consequences of these invasions for other animals, plants, and humans.

Exotic Invaders. Jeanne M. Lesinski. 1996. Describes five species that are not native to North America – sea lampreys, fire ants, zebra mussels, European starlings, and African honeybees – and efforts to handle the problems their introductions have caused.

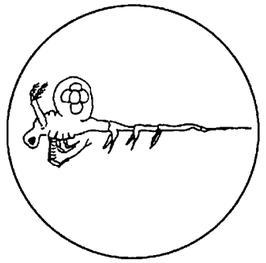
DROP IN THE BUCKET

METHOD

Kids try to drop aquatic invasive species into a bait bucket. After they learn the secret to getting the cards in the bucket, they discover that one of the secrets to preventing new invasions is making wise personal choices.

GRADES

5 – 8



ACTIVITY TIME

40 – 50 minutes

SETTING

Anywhere

MATERIALS

- **Wisconsin Wildcards: Alien Invaders: Aquatics** (see list on page 114). You will need 4 of each card.
- Bait buckets or other containers (1 per 3 - 4 kids)
- **Sticky Situations** on pages 43 - 44 (1 copy per 3 - 4 kids)

STANDARDS

Environmental Education: B.8.5, B.8.10, B.8.18
Social Studies: A.8.7, A.8.11, D.8.11

SCOUT CONNECTIONS

Webelos: Naturalist
Boy Scouts of America: Fish and Wildlife Management

INTRODUCTION

Keeping bait in the right place is one of the easiest ways to control the spread of aquatic invasive species. Let's see how well you can get these invasive species in the bucket.

DOING THE ACTIVITY

1. **Drop cards into bait buckets.** Divide the kids into groups of 3 - 4. Give each group a bait bucket and a handful of the **Alien Invaders: Aquatics** cards. Challenge kids to drop their cards from waist height into one of the bait buckets.
2. **Show the trick.** If they haven't figured out the secret, suggest they try different strategies. Most people will try to drop the cards on edge. If you hold them flat and drop them squarely into the bucket, you will hit the mark almost every time!
3. **Look at the Wildcards.** Preventing aquatic invasive species from invading new habitats is not impossible. One of the major ways that invasives "get around" is people. Using the information on the cards, list the ways people transport invasive species from an infected body of water to an uninfected body of water.
4. **Pass out the Sticky Situation cards.** Use these cards to pinpoint everyday decisions that kids might make. While they're still in groups, invite kids to read the first card and talk about what they would do if they were in that situation. Invite small groups to share their decisions with the whole group.
5. **Talk about the rest of the situations.** Encourage the groups of kids to read the situations one at a time and discuss their reactions. Invite them to read the backs of the situation cards and to consider the additional information provided there.

ASSESSING STUDENT LEARNING

Ask each student to choose an aquatic invasive species **Wildcard**. Using the information on the card, the Internet, or other available resources, they should find out the following information:

- Where is the invasive species originally from?
- How did it get to Wisconsin?
- Where is it found in the state?
- How does it move from water body to water body within the state?
- How can people help prevent the spread?

EXTENDING THE LEARNING

Create your own situations. Randomly distribute a **Wildcard** that features a location (i.e., Wisconsin State Forests cards or Special Places cards) and an aquatic invasive species card to each small group of kids. Challenge them to create a situation using these two cards. For example, if they received Havenwoods State Forest and zebra mussels, the situation might be about a kid who was playing around in Lake Michigan and took home a bucket of lake water. Later, when the water got a little smelly, he thought about taking it over to Havenwoods to dump it in the pond. What should he do?

FINDING OUT MORE!

William the Curious: Knight of the Water Lilies. Charles Santore. 1997. In this fairy tale, a lowly, but brave, frog defends the place where he lives. After the story, talk about times when we need to be like William.

WISCONSIN WILDCARDS WISCONSIN WILDCARDS WISCONSIN WILDCARDS

STICKY SITUATION 1

Your family loves to canoe camp. Your favorite thing to do is travel from one lake to another. You don't mind the portages, but your dad's obsession with cleaning all the vegetation and aquatic animals off the canoe is driving you crazy. He even makes you clean the mud off your shoes! Now you are old enough to canoe on your own with some friends. You are leaving one lake for a new one. Do you clean the canoe?

OK, maybe dads can be a little unreasonable at times, but this time Dad has the right idea. Non-native plants and animals move easily from lake to lake on you, your shoes, clothes, packs, tents, canoes, pets, bait buckets, and anything else you use. If everyone was as careful as your dad, we might be able to control the spread of non-natives like zebra mussels, Eurasian milfoil, and spiny water fleas.

STICKY SITUATION 2

You can easily see the trail with switchbacks leading down to the shore. The sign says, "Please stay on the trail." Your friends have just taken a well-used shortcut that heads straight for the water. They are going to get there first! What do you do?

Shortcuts are tempting! But the plants growing on shores protect the area and provide valuable habitat. Taking shortcuts increases shoreline erosion. But that's not all! Once the native plants along the shoreline have been disturbed, the likelihood of invasive plants taking root is much higher.

STICKY SITUATION 3

Your new dog loves to swim! He is so good at retrieving things from the water that you're thinking of training him to be a hunting dog. When you go on long hikes together, he often splashes in and out of several different lakes. One time, he came out covered with green pondweeds. He looked so ridiculous that you took a picture of him. Should you save him the embarrassment of being seen looking like this or just let him run around like a creature from the black lagoon?

An embarrassed dog is not the problem here! When your dog runs from lake to lake, he's probably carrying around more than wet fur. Caught in that wet fur could be microscopic organisms, eggs, seeds, plant parts, and all sorts of things! Some of those living things could be invasive species. If you're going to let your dog play in the water, you must be sure he is clean and dry before entering another body of water. Since car washes or very hot soap and water are not recommended for living things, you should restrict your dog's playing.

STICKY SITUATION 4

You and your family are moving across the country. While your parents promised that you could restock your aquarium after the move, they won't let you move your pet aquarium fish. You offered them to your best friend, the science teacher, and a dozen other people. No one is interested. Now what are you going to do?

You might be tempted to release them in a local waterway. At least, you figure, they would have a chance. The truth is that they will either quickly die, or they will survive and pose a risk to the plants and animals already living there. If you can't find a hobbyist, museum, zoo, nursing home, school, or anyone to take care of them, try to return them to the store for resale or trade. If that doesn't work, don't be tempted to bury them at sea! Ask a vet to put them to sleep or give you advice on how to end their lives humanely.

STICKY SITUATION 5

Your family likes to joke that you knew how to fish before you could walk. While you prefer lures, you enjoy experimenting with live bait. At the end of the day, you are never quite sure what to do with leftover worms, larvae, crayfish, or minnows. One friend just dumps them in the water. What will you do?

If your friend jumped off a bridge, would you do that too? First, think about where you got the live bait. If you caught it yourself in the spot where you are fishing, it's ok to return it to the water. If you bought the bait at a bait shop or collected it from any other body of water, then you should dispose of any leftover bait in the trash. Never dump leftover worms on the ground. Improper disposal of live bait is one way that invasive species are spreading. Remember, it is illegal to possess live crayfish and angling equipment at the same time on inland waters!

STICKY SITUATION 6

You and your family are taking a long hike into a wetland area. Mom parks at the trailhead and everyone gets ready to go. Just off the parking lot, there is a beautiful purple flower. Your mom picks one and sticks it in your hair. The hike goes great, but after awhile the flower starts to itch. You carry it in your hand for a while, but it's all droopy and not that beautiful anymore. What do you do with it?

If you guessed that the weed might be purple loosestrife, you could be right. You don't know for sure. It could be invasive; it could be endangered. However, invasives are a lot more common around parking lots where the soil has been disturbed and there is a lot of human activity. Now that you are far from the source, don't drop it on the ground and spread its seed. Put it in a bag and throw it in the trash when you get home. Remember: It would be best not to pick any wildflower. Period.

WEED WATCHERS

METHOD

Practice **watching** for invasive plants by playing a card game and learning more about the plants that are invading our natural areas.

GRADES

5 – 8

ACTIVITY TIME

20 – 30 minutes

SETTING

Anywhere

MATERIALS

- **Wisconsin Wildcards: Alien Invaders: Plants** (see list on page 114). For each group of 4 - 7 kids, you will need 4 each of 16 invasive plant cards.

STANDARDS

English Language Arts: B.8.1
Environmental Education: B.8.5, B.8.18
Science: F.8.9
Social Studies: A.8.7, A.8.11

SCOUT CONNECTIONS

Boy Scouts of America: Fish and Wildlife Management,

INTRODUCTION

Weeds have always caused problems for farmers and gardeners. But the weeds in this activity aren't ordinary weeds, they are invasive weeds! Invasive weeds invade wild areas, outcompete native species, and degrade habitats. The best way to fight invasive plants is to prevent them from entering an area. If they do invade, the sooner they are found and removed, the better. Once a plant is established and producing seed, it is much more difficult to control or remove. If everyone recognized and watched for invasive plants, we might be able to stop their spread into new areas!

Go Wild with Wisconsin Wildcards! © 2005 WI Dept. of Natural Resources, WI Environmental Education Board, Friends of WI State Parks

DOING THE ACTIVITY

1. **Play Weed Watchers**. See the directions on page 108. Since only 4 - 7 kids can play the game at one time, set up a learning station with the cards or divide into teams and take turns playing the game.
2. **Check out the cards.** Ask each student to pick one of the cards in the deck to look at more closely. Do any of the cards tell how the invasive plant got here? What kinds of problems do these invasives cause?
3. **Talk about the future.** If we do nothing to control the introduction and spread of invasive plants, what is the worst thing that could happen? (Invasives could eventually outcompete native vegetation. This would leave our natural areas dominated by a handful of invasive plants rather than the rich diversity of plants that we have now.)
4. **Take action.** Challenge the kids to do something about invasive plants that are in their communities. Here are some ideas:
   - Find groups that are sponsoring "Weed Outs" or "Weed Pulls" and join in!
   - Study the **Wildcards** to learn the identifying characteristics of the invasive plants so that you can spot them as you work and play outdoors.
   - Collect reference specimens of local invasives to document their presence and help others learn their identities. See **Extending the Learning** below for information about collecting and pressing plant specimens.
   - Make wanted posters to call attention to the problems that invasive species cause.

ASSESSING STUDENT LEARNING

Ask students to design new **Wildcards** by researching information about other invasive plants that could become serious threats in Wisconsin. Check out the invasive species website <http://dnr.wi.gov/topic/Invasives/what.html> for characteristics, habitats, control methods, and photographs of some of the plants that resource specialists are currently monitoring:

common teasel (Dipsacus fullonum subsp. sylvestris)
cut-leaved teasel (Dipsacus lacinatus)
giant hogweed (Heracleum mantegazzianum)
Chinese Yam (Dioscorea oppositifolia)
wineberry or wine raspberry (Rubus phoenicolasias)
European marsh thistle (Cirsium palustre)
spreading hedge parsley (Torilis arvensis)
Princess tree (Paulownia tomentosa)
Kudzu (Pueraria lobata)
Mile-a-minute vine (Polygonum perfoliatum)
pale swallow-wort (Vincetoxicum rossicum)
flowering rush (Butomus umbellatus)
European marsh thistle (Cirsium palustre)
hydrilla (Hydrilla verticillata)
European frog-bit (Hydrocharis morsus-ranae)
water chestnut (Trapa natans)

EXTENDING THE LEARNING

Become a Weed Watcher. Join resource specialists, natural resource organizations, and citizen scientists to search out and destroy invasive plants. The Wisconsin Invasive Plants Reporting and Prevention Project website will tell you all you need to know about getting involved, including how to collect reference specimens. <http://dnr.wi.gov/topic/Invasives/report.html>

CONTROL MAGIC?

METHOD

After trying a challenging card stunt, kids will discover there is nothing magical about controlling the spread of invasive species. Everything about invasive species is costly!

GRADES

4 – 8

ACTIVITY TIME

15 – 20 minutes

SETTING

Anywhere

1 gallon of glyphosate
$60
2 hours of pulling garlic mustard
Exhausting
1 case of wild parsnip
Painful
1 pristine natural area
Priceless

MATERIALS

- **Wisconsin Wildcards: Alien Invaders** (see list on page 114).
- Pennies (1 per kid)

STANDARDS

English Language Arts: E.4.3, E.8.3
Environmental Education: D.4.3

INTRODUCTION

Getting rid of invasive species once they have invaded an area is difficult and costly. Let's see if you have any luck getting rid of an invasive species without losing anything.

DOING THE ACTIVITY

1. **Challenge kids to a card stunt.** Follow the directions on page 92 to show kids how to perform a simple card stunt.
2. **Discuss the costs of controlling invasive species.** Estimates put the cost of controlling invasive species at about $137 billion annually in losses to agriculture, forestry, fisheries, and the maintenance of open waterways in the United States.
3. **List the ways invasive species are controlled.** Check out the backs of the **Alien Invaders Wildcards**. Make a list of the ways invasive species are controlled. Your list should include pulling, herbiciding, mowing, burning, grazing, killing, digging, and using

biological controls. Think about the costs associated with each of these methods. Make a list of the equipment and supplies that might be needed. Also consider the time that land managers, homeowners, and volunteers "lose" to controlling invasives that could be spent on other habitat improvement projects. By far the most efficient and effective way to control invasive species is to prevent them from entering an area in the first place.

4. **Discuss the costs of not controlling invasive species.** The monetary cost of removing invasive species is only part of the costs. Look back at the cards. List the things we might "lose" if invasive species are not controlled. Name habitats, plants, and/or animals that might be affected by the presence of invasive species.
5. **Pitch in!** Kids can help in many ways! Besides learning to identify invasive species, kids can help prevent further introductions and control established populations. List some of the things on the cards that kids can do. Look for groups in your area that are in need of volunteers and be ready to pitch in! See Extending the Learning below.

ASSESSING STUDENT LEARNING

Ask students to each choose an invasive species to research. They should find out how to identify the species, how to control new introductions, and how to manage established populations. Then, students should develop wanted posters that convey the plants' shady traits and how to "arrest" them. Search the Internet for "invasive species wanted poster" if you or your students need inspriation.

EXTENDING THE LEARNING

Lend a hand. Many organizations welcome young volunteers. Here are a few:

Clean Boats, Clean Waters. University of Wisconsin – Extension and Wisconsin Department of Natural Resources. <http://dnr.wi.gov/lakes/cbcw/>

Invasive Plant Association of Wisconsin. <www.ipaw.org>

Purple Loosestrife Beetles. Wisconsin Department of Natural Resources. <http://dnr.wi.gov/topic/invasives/loosestrife.html>

Wisconsin Invasive Plants Reporting and Prevention Project. Wisconsin Department of Natural Resources. <http://dnr.wi.gov/topic/Invasives/report.html>

Zebra Mussel Watch. University of Wisconsin – Sea Grant Institute. <http://seagrant.wisc.edu/zebramussels>

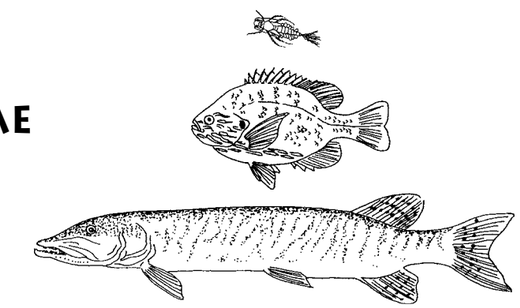
WEB OF LIFE

METHOD

Connect aquatic plants and animals into a food web using Wildcards and string.

GRADES

5 – 8



ACTIVITY TIME

20 – 30 minutes

SETTING

Anywhere

MATERIALS

- **Wisconsin Wildcards: Natives and Alien Invaders** (see lists on page 113 and 114). Select the cards listed on page 56. You will need 1 set for each group of 8 - 15 kids.
- Extra cards on page 55 (1 copy for each group of 8 - 15 kids)
- Ball of string or yarn (1 for each group of 8 - 15 kids

STANDARDS

Environmental Education: B.8.8
Science: F.8.9

SCOUT CONNECTIONS

Webelos: Naturalist
Boy Scouts of America: Insect Study, Nature

INTRODUCTION

Have you ever seen a perfect spider web? The rays connect to tree trunks, rocks, and fences to hold the web in place. The spirals are evenly spaced. They tie the rays together. If you follow the strands of silk, you can eventually get to any place on the web! Now picture a pond. The pond is made up of living and non-living things that are connected to each other. Pondweeds need sunlight to live and grow. Small invertebrates eat the pondweeds. Small fish eat the invertebrates. Big fish eat the small fish. When the big fish die, scavengers eat them. If we could take a pencil and magically draw the connections in the pond, the picture might start to look something like a crazy spider web. Let's play a game to see how this might work.

DOING THE ACTIVITY

1. **Divide the kids into groups.** Maximum group size is 15. The ideal size would be 8 – 12.
2. **Give each kid a Wildcard from the list on page 56.** Ask them to look over the information on the back and think about what they need to eat and what might eat them. Be prepared to help kids with vocabulary, especially on the aquatic invertebrate cards. Note: The leader should keep the "sun" card.
3. **Start the game.** Show the ball of string and explain that the string will let us see the ways plants and animals are connected to each other. Show the "sun" card, and explain that you will start, because all energy comes from the sun. Model the game by saying, "I am the sun. I am passing the ball of string to the diatom, because I give it energy to grow." You hold onto the string and pass the ball to the diatom.
4. **Continue the play.** The "diatom" holds onto the string and passes the ball to another plant or animal in the circle that is connected to it in some way. Keep the string tight, but not too tight! Play continues until everyone is holding onto the string. Some plants or animals might have multiple connections, but everyone should be a part of the crazy web!
5. **Show the power of the sun.** Explain that you, representing the sun, are very important. Ask what might happen if the sun suddenly stopped shining. Briefly discuss some of the consequences. Ask everyone to sit still. Begin to tug gently on your piece of string. Tell the students that when they feel the tug, they should begin to tug gently. Ask them to watch as the tug moves through the web. Finally, the whole web will be shaking! Everything is connected to everything else.
6. **Explore other connections.** It is easy to understand how the sun influences the connections between plants and animals, because the sun is the source of all energy. What would happen if the sowbugs (or some other decomposer) disappeared? Sowbugs aren't that important, are they? Try the experiment again with the sowbug gently tugging on the web. As the plants and animals in the circle feel the tug, they should call out the plants or animals they represent.
7. **Discuss impacts to the web.** Talk about things that might change the way the plants and animals are connected in the pond (e.g., drought, winter, pollution, invasive species).

ASSESSING STUDENT LEARNING

After the game, each student chooses one card to research. After finding out what their plants or animals need to survive and who depends on them for food, they can each draw a food web. Students should start by putting their chosen plants or animals in the center of large pieces of paper. Then, using words and/or pictures, draw all the connections to other plants and animals.

EXTENDING THE LEARNING

Introduce an alien invader. What happens when you add an invasive species or two to the food web? Try adding one of these alien invaders: curly-leaf pondweed (plant), rusty crayfish (plant eater), or rainbow smelt (meat eater). Invasive species often displace native species. What happens then? Identify one plant or animal that the new invasive species will displace. Ask the student representing the native plant or animal to let go of the string. What happens to the web? Ask the students to pull gently on the string. Watch as the web unravels.

WISCONSIN WILDCARDS

SUN

The source of all energy! All food chains begin with the sun!

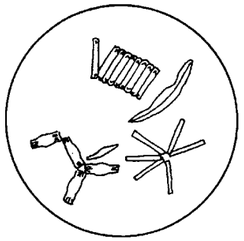
WISCONSIN WILDCARDS

DIATOMS

Diatoms are single-celled algae. They are "the grass of the lake."

THEY ARE EATEN BY

daphnia, snails, mayfly larvae, midge larvae, riffle beetles, and water penny larvae.



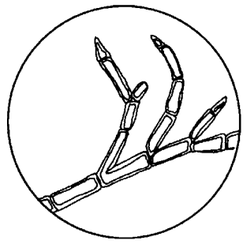
WISCONSIN WILDCARDS

CLADOPHORA

Cladophora (green algae) are made of long, slender plant cells that form branching filaments.

THEY ARE EATEN BY

snails, mayfly nymphs, shorthead redhorse, and midge larvae.



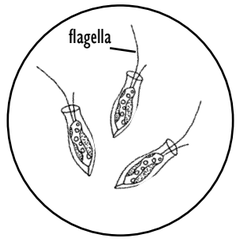
WISCONSIN WILDCARDS

CHRYSOPHYTES

Some chrysophytes have flagella for moving around in the water. That's unusual for algae!

THEY ARE EATEN BY

slippershells, zebra mussels, alewives, daphnia, and snails.



WISCONSIN WILDCARDS

HUMANS

Humans come in a variety of sizes, shapes, and colors. They use tools to capture their food.

HUMANS ARE TOP PREDATORS in aquatic food chains.

WISCONSIN WILDCARDS

COPY AND CUT OUT THESE EXTRA WILDCARDS

WILDCARDS NEEDED FOR WEB OF LIFE GAME

Producers (plants): cat-tails[1], diatoms, cladophora, chrysophytes

First Order Consumers (eat plants): caddisfly larva, muskrat, riffle beetle, mayfly larva, shorthead redhorse, water penny larva, trumpeter swan, redhead

Second Order Consumers (eat plant eaters): Blanding's turtle, Blanchard's cricket frog, dragonfly larva, green sunfish, yellow perch, canvasback, raccoon[2]

Third Order Consumers (eat meat eaters): northern pike, walleye, people, common loon, great blue heron, whooping crane

Decomposers (eat dead plants and animals): crane fly larva, sowbug, catfish

[1] The Wildcard for cat-tails features both native and non-native cat-tails, but it is in the Alien Invaders set.

[2] Raccoons eat plants, plant eaters, meat eaters, and dead plants and animals. They are only listed once to reduce confusion when gathering cards.

GO FISH!

METHOD

Play a game of Go Fish! Then, design your own fish that can survive somewhere in the state.

GRADES

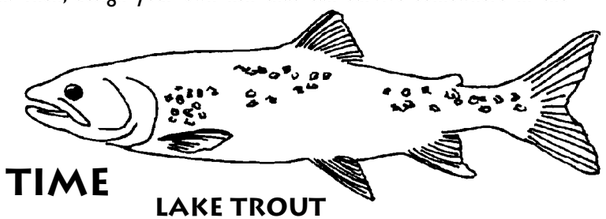
3 – 6

ACTIVITY TIME

45 – 60 minutes

SETTING

Inside



LAKE TROUT

- Light belly and dark back for camouflaging when seen from below or above. This common color pattern is called countershading.
- Torpedo-shaped body for fast movement. All fish are streamlined for slipping smoothly through the water.
- Large mouth for catching and eating prey fish.

MATERIALS

- **Wisconsin Wildcards: Match Your Catch!** (see list on page 113). You will need 4 each of 13 different fish for each group of 2 - 5 kids.
- Paper
- Art materials

STANDARDS

Environmental Education: B.4.6
Science F.8.2

INTRODUCTION

Fish come in so many different shapes, sizes, and patterns that it's almost impossible to know them all. However, because fish live in a watery world, they have many things in common, like basic body shapes, scales, and gills. The small ways that they adapt to particular habitats, foods, or environmental conditions make each kind of fish special.

DOING THE ACTIVITY

1. **Play Go Fish!** Follow the game directions on page 96. Since only two groups of 2 - 5 kids can play the game at one time, set up a learning station with the cards or divide into teams and take turns playing the game. If you choose, you can play the version that best fits your location. See page 97.
2. **Talk about fish adaptations.** Allow kids to study the illustrations and the information on the backs of the cards. Use the information in this activity about lake trout, yellow perch, and lake sturgeon to take a closer look at fish adaptations.

3. **Design a fish.** Using the information from your discussion, ask the kids to design a fish. They should decide where it will live, what it will eat, and how it will avoid predators. They can also think about how it will reproduce and compete with invasive fish species.

ASSESSING STUDENT LEARNING

Ask students to describe the fish that they designed. Evaluate their art projects based on creativity. Consider how well students applied their knowledge about fish adaptations to the design of their unique fish.

EXTENDING THE LEARNING

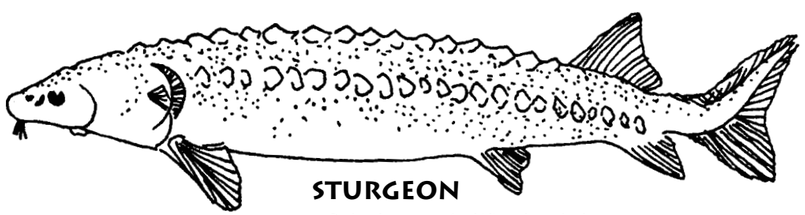
Be a fish for a day! What if you could be a fish for a day? What kind of a fish would you want to be? Would you live in the open water, on the murky bottom, or among vegetation? Would you eat plankton or other fish? How would you avoid being eaten by bigger fish? What would an underwater life be like? Write a story, act it out, or draw a picture.

FINDING OUT MORE!

Fish Do the Strangest Things. Leonora and Arthur Hornblow. 1990. Step-up Nature Books series. Describes 17 fishes that have peculiar characteristics and habits, including fish that spit, fly, climb trees, blow up like balloons, and sleep out of water.

Fishes. Michael Filisky. 1989. Peterson First Guide series. A simplified field guide to the fishes of North America.

Fishes. C. Lavett Smith. 2000. National Audubon Society First Field Guide series. Explores the world of fishes, discussing their classification, anatomy, behavior, and habitat, and providing photographs and detailed descriptions of individual taxonomic families.

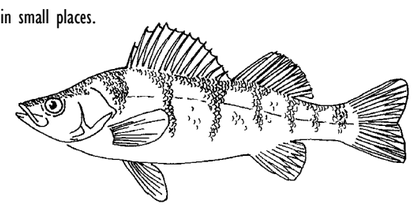


STURGEON

- Dark color on top for hiding along the bottom.
- Mouth on the underside of head for sucking up bottom-dwelling creatures.

YELLOW PERCH

- Flattened body for swimming slowly and fitting in small places.
- Stripes for hiding in vegetation.
- Upturned mouth for feeding on things above it.



MEET THE FISH!

METHOD

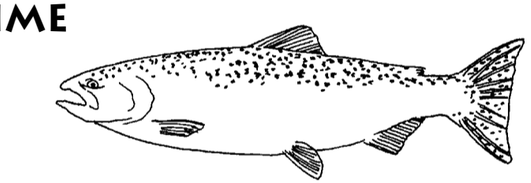
Use a dichotomous key from the Junior Angler Program to identify the Wisconsin fish pictured on **Wildcards**.

GRADES

4 – 8

ACTIVITY TIME

30 – 40 minutes



SETTING

Anywhere

MATERIALS

- **Wisconsin Wildcards: Match Your Catch!** Select fish cards that are included in the key (see list on page 60).
- **Fish Key** on pages 61 - 62 (1 copy for each pair of kids)

STANDARDS

Science B.4.1

INTRODUCTION

(This information is adapted from the Junior Angler Instructor's Guide.)

If you were fishing in Wisconsin, why would you need to know what kind of fish you were catching? (There are some fish that you can catch and eat, others that you must catch and release). What if you were planning to eat your catch? (Some people prefer the taste of one kind of fish to another. People should take caution when eating some types and sizes of fish due to health advisories.) Can you think of other reasons why you might want to or need to know the identity of a fish? (Be sure to discuss legal and ethical issues of harvest limits and size restrictions.)

DOING THE ACTIVITY

1. **Introduce the key.** Scientists and naturalists use dichotomous keys to identify plants and animals. Explain how to navigate through the key. Begin with the first set of characteristics and decide whether choice a or choice b is true for the fish you are looking at. At the end of each line will be either instructions to go to another clue or the name of the fish.
2. **Put the Wildcards in an empty fishbowl or large jar. Let the kids "fish" for a card and use the key.** Allow kids to work with a partner.
3. **Offer help as needed.** Without actual specimens, some key characteristics of fish may be difficult to see in an illustration. Here are some hints you may want to share with the group to keep them from getting stuck as they make their way through the key.
   - **Single dorsal fin vs. two dorsal fins** – Some fish clearly have just one dorsal fin and some clearly have two distinct dorsal fins. Others have two that may be joined together with a spiny anterior part and a soft posterior part. The adipose fin is something different altogether.
   - **Noticeable sharp teeth** – This is tough to see in an illustration! To help them stay on the right track, tell kids to think about toothy predators.
   - **Fin rays and fin spines** – For some species, the number of rays or spines may be the clincher in distinguishing one species from another. You can see these by looking at a good illustration and counting carefully.

ASSESSING STUDENT LEARNING

Note how successfully students are able to follow the directions in the key and arrive at an accurate identification.

EXTENDING THE LEARNING

Make keys for other Wildcards. Try snakes, furbearers, or aquatic stream critters.

FINDING OUT MORE!

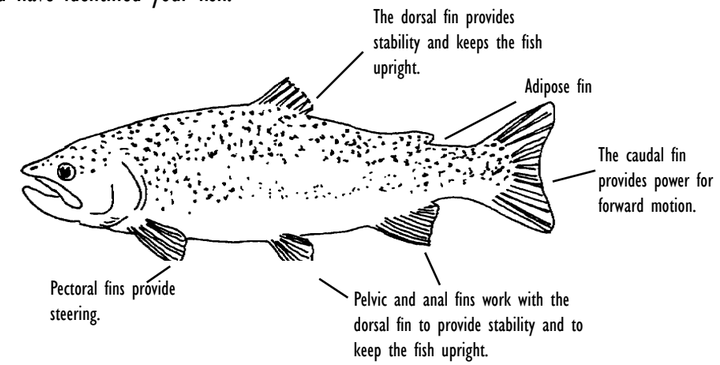
Fishing Regulations. Wisconsin Department of Natural Resources. 2012. <http://dnr.wi.gov/topic/fishing/regulations/index.html>

THE FOLLOWING FISH ARE INCLUDED IN THE KEY.

Black Bullhead	Channel Catfish	Lake Whitefish	Sauger
Black Crappie	Chinook Salmon	Largemouth Bass	Walleye
Bluegill	Coho Salmon	Muskellunge	Smallmouth Bass
Bowfin	Flathead Catfish	Northern Pike	White Sucker
Brook Trout	Grass Pickerel	Pumpkinseed	Yellow Bullhead
Brown Bullhead	Lake Trout	Rainbow Trout	Yellow Perch
Brown Trout	Lake Sturgeon	Rock Bass	

FISH KEY

Scientists use dichotomous (die-COT-o-mus) keys to classify and identify everything from plants to bugs to fish. Choose a fish from the Wisconsin Wildcards collection to key out. Start with the first pair of characteristics. Work your way step by step through the key until you have identified your fish.



A KEY TO COMMON WISCONSIN FISH

1. a. Body without very noticeable large bony plates ..... Go to #2
   b. Body with several rows of large bony plates. Also has whiskers (barbels) and a sucker-like mouth ..... **Lake Sturgeon**
2. a. Single dorsal fin ..... Go to #3
   b. Two dorsal fins, that may be separated or joined with distinct spiny and soft fins, or an adipose fin ..... Go to #7
3. a. Dorsal fin short, much less than half of body length ..... Go to #4
   b. Dorsal fin very long, half of total body length or longer ..... **Bowfin**
4. a. Has very noticeable sharp teeth ..... (Pike Family) Go to #5
   b. No noticeable teeth, fleshy sucker-like mouth ..... **White Sucker**
5. a. Tips of tail fin rounded ..... Go to #6
   b. Tips of tail fin pointed ..... **Muskellunge**
6. a. Both cheek and gill cover fully scaled ..... **Grass Pickerel**
   b. Cheek fully scaled and just the upper half of the gill cover ..... **Northern Pike**
7. a. Small fleshy adipose fin present ..... Go to #8
   b. Adipose fin absent ..... Go to #19
8. a. Has whiskers (barbels) ..... Go to #9
   b. No whiskers (barbels) ..... Go to #13
9. a. Tail deeply forked ..... **Channel Catfish**
   b. Tail rounded or slightly indented, but not forked ..... Go to #10

10. a. Lower jaw protruding beyond upper jaw; patchy, mottled markings on body ..... **Flathead Catfish**
    b. Lower jaw not protruding beyond upper jaw ..... Go to #11

11. a. Anal fin rays 24-27, barbels whitish, tail fin rounded ..... **Yellow Bullhead**
    b. Anal fin rays 15-24, barbels gray to black, tail fin squarish, slightly notched ... Go to #12

12. a. Pectoral fin spine toothless or with poorly developed teeth; anal fin rays 15-21, side not mottled (no Wildcard for this one!) ..... **Black Bullhead**
    b. Pectoral fin spine with strong saw-like teeth, anal fin rays 21-24, side mottled ..... **Brown Bullhead**

13. a. Tail deeply forked ..... Go to #14
    b. Tail slightly forked or not forked ..... Go to #16

14. a. Mouth turned down ..... **Lake Whitefish**
    b. Mouth not turned down ..... Go to #15

15. a. Densely mottled marking pattern on back and sides ..... **Lake Trout**
    b. Marking pattern not densely mottled (scattered spots instead) ..... **Coho Salmon**

16. a. Worm-like markings on back and white edge on lower fins ..... **Brook Trout**
    b. No worm-like markings on back or white edge on lower fins ..... Go to #17

17. a. Lower fins speckled ..... **Chinook Salmon**
    b. Lower fins not speckled ..... Go to #18

18. a. Prominent, pink lateral line ..... **Rainbow Trout**
    b. Lateral line not pink or prominent ..... **Brown Trout**

19. a. Anal fin with two or fewer spines on leading edge ..... (Perch Family) Go to #20
    b. Anal fin with three or more spines on leading edge ..... (Sunfish Family) Go to #22

20. a. Teeth very large, white tip on lower tip of tail ..... **Walleye**
    b. Teeth not noticeable, no white tip on tail ..... Go to #21

21. a. Polka-dotted dorsal fin ..... **Sauger**
    b. Polka dots absent from dorsal fin ..... **Yellow Perch**

22. a. Having more than three anal fin spines ..... Go to #23
    b. Having only three anal fin spines ..... Go to #24

23. a. Body silver colored with random black scales ..... **Black Crappie**
    b. Body not silver colored, black scales forming lateral rows of spots ..... **Rock Bass**

24. a. Mouth very large, back of upper jaw extending to below or beyond eye ..... Go to #25
    b. Mouth very small, back of upper jaw not extending to eye ..... Go to #26

25. a. Tip of upper jaw extending beyond eye ..... **Largemouth Bass**
    b. Tip of upper jaw not extending beyond eye ..... **Smallmouth Bass**

26. a. Red spot at tip of gill flap ..... **Pumpkinseed**
    b. Gill flap all black, no red spot ..... **Bluegill**

Adapted from a key developed by Steve Gilbert, WDNR

BIOTIC INDEX

METHOD

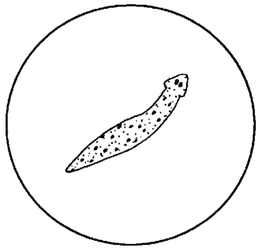
Find out about the Water Action Volunteers' (WAV) method of assessing water quality in Wisconsin streams by simulating a stream critter sampling process.

GRADES

5 – 8

ACTIVITY TIME

30 – 40 minutes



SETTING

Anywhere

MATERIALS

- **Wisconsin Wildcards: Native Species: Aquatic Invertebrates** (see list on page 113). You will need 4 of each of the 19 cards.
- Bucket or other container
- **Key to Macroinvertebrate Life in the River** on page 65 (1 copy per group)
- **Citizen Monitoring Biotic Index** on page 66 (1 copy per group)
- **Calculate the Index Score** on page 67 (1 copy per group)
- Damselfly nymph drawing (1 for each group, if needed)

STANDARDS

Mathematics: B.8.7
Science: F.8.8, F.8.9

SCOUT CONNECTIONS

Boy Scouts of America: Fish and Wildlife Management

INTRODUCTION

(This information is adapted from Wisconsin's Water Action Volunteers (WAV) materials developed by the Wisconsin Department of Natural Resources and the University of Wisconsin – Extension)

WAV uses a biotic index to help assess water quality in streams throughout the state. The biotic index is based on the macroinvertebrates that are present in a stream. Aquatic macroinvertebrates have some general characteristics that make them very useful for assessing stream health:

- Because there are a lot of them in the water, they are fairly easy to sample.
- Their limited mobility and extended presence in the water means that they are exposed on a continuous basis to water quality in that stream or river.

- Many of these organisms breathe oxygen that is in the water.

Macroinvertebrates have varying oxygen demands. Some can only live in water that has a lot of oxygen. Others can live in water that doesn't have much oxygen dissolved in it at all. Generally, we assume that the more pollution there is in water, the less oxygen. The biotic index works by assigning different levels of pollution tolerance to the different kinds of macroinvertebrates. WAV's Citizen Monitoring Biotic Index has macroinvertebrates separated into four categories: tolerant, semi-tolerant, semi-sensitive, and sensitive to pollution.

DOING THE ACTIVITY

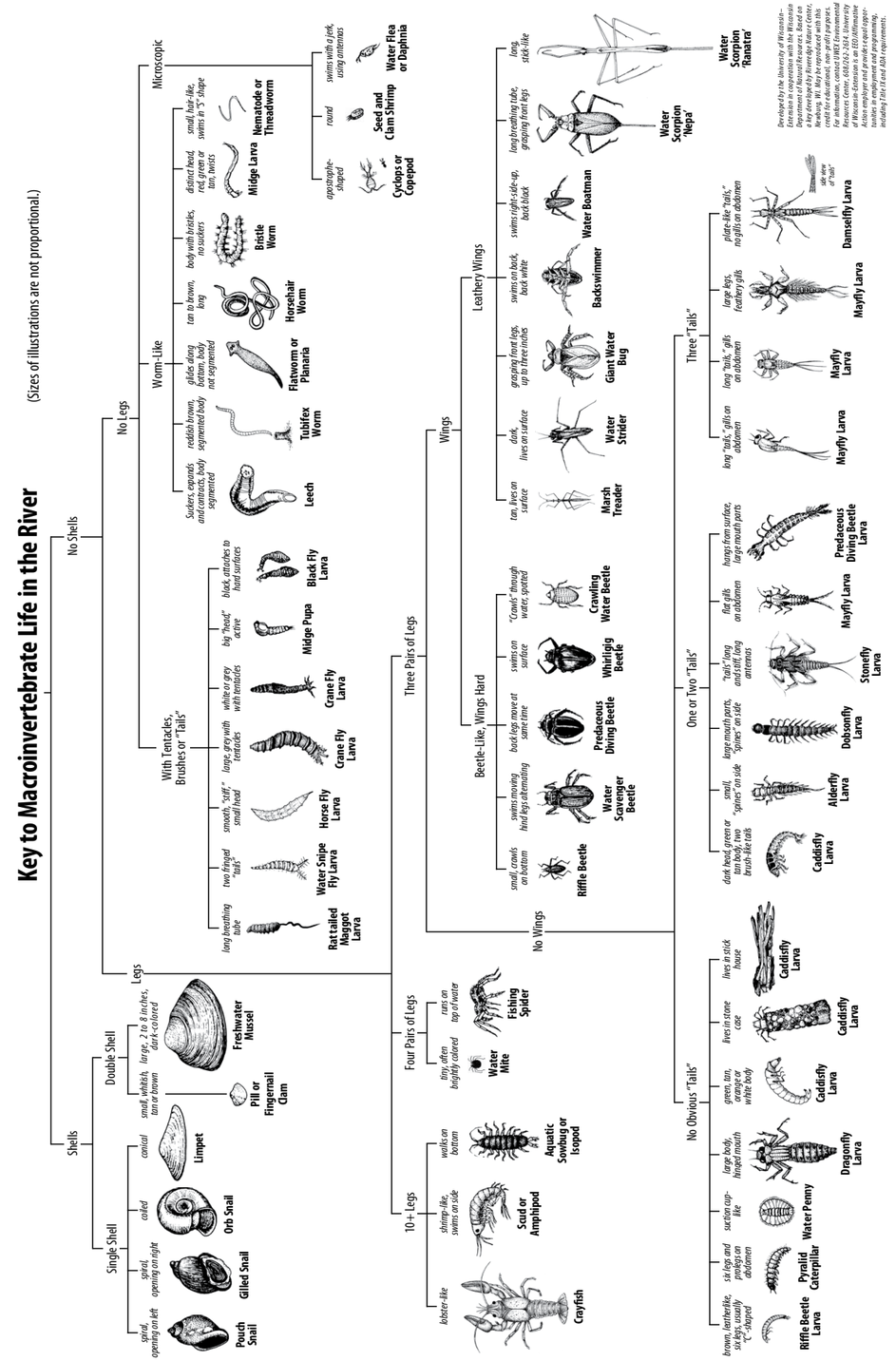
1. **Divide into groups and pass out materials.** Form groups of 3 - 4 kids each. Pass out a copy of the **Key to Macroinvertebrate Life in the River**, **Citizen Monitoring Biotic Index**, and **Calculate the Index Score** worksheet to each group.
2. **Review the use of keys to identify things.** If your group has never used a key, use the damselfly nymph drawings on page 68 to practice. Go through the key step by step, demonstrating how to look at the choices at each step and follow the lines on the chart to the next set of choices. If necessary, enlarge other critters on the key and repeat.
3. **Take "samples."** Allow a representative from each group to "dip" into the bucket and collect nine stream critter cards. Challenge them not to look at the backs of the cards!
4. **Sort and identify the stream critters.** Each group should sort their cards to determine how many different stream critters they "collected". Then, use the key to identify each kind.
5. **Complete the Citizen Monitoring Biotic Index form.** Each group should circle the animals that they identified in their samples.
6. **Tally up animals in each group.** Count the number of types of animals that are circled in each group and write that number in the box provided. Do not count individual animals in your sample. Only count the number of types of animals.
7. **Calculate the Index Score using the formula.** See page 67.

ASSESSING STUDENT LEARNING

Observe students as they participate in the activity, use the dichotomous key, calculate the index score, and interpret their data.

EXTENDING THE LEARNING

Join the WAV. Wisconsin's Water Action Volunteers (WAV) is a statewide program for Wisconsin citizens who want to learn about and improve the quality of Wisconsin's streams and rivers. WAV currently offers informational materials and support for citizen stream monitoring, as well as storm drain stenciling, river cleanups, and other action-oriented water resource protection projects. <http://watermonitoring.uwex.edu/index.html>. See **Citizen Monitoring Biotic Index** for more information on how to collect samples from nearby streams. <http://watermonitoring.uwex.edu/wav/monitoring/biotic.html>



Developed by the University of Wisconsin–Extension in cooperation with the Wisconsin Department of Natural Resources. Based on a key developed by Riverdge Nature Center, Newburg, WI. May be reproduced with this acknowledgment for educational purposes. For information, contact UWEX Environmental Resources Center, 608/262-2874. University of Wisconsin-Extension is an EEO/Affirmative Action employer and provider of educational opportunities in employment and programming, including Title IX and ADA requirements.

Group 1: These are sensitive to pollutants. Circle each animal found.

Stonefly Larva

Dobsonfly Larva

Alderfly Larva

Water Snipe Fly Larva

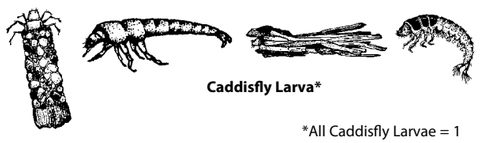
No. of group 1 animals circled:

Relative Size Key:

= larger than picture

= smaller than picture

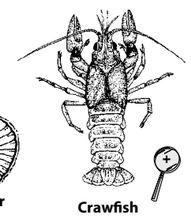
Group 2: These are semi-sensitive to pollutants. Circle each animal found.


Caddisfly Larva*

*All Caddisfly Larvae = 1

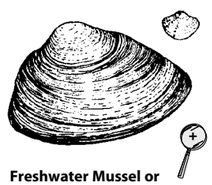
Dragonfly Larva

Water Penny

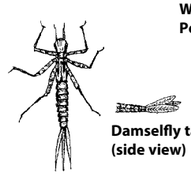

Crawfish

No. of group 2 animals circled:

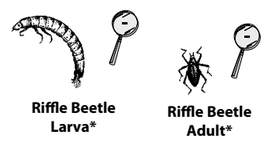
Crane Fly Larva


Freshwater Mussel or Fingernail clam

Mayfly Larva


Damselfly tail (side view)

Damselfly Larva


Riffle Beetle Larva*

Riffle Beetle Adult*

*All Riffle Beetles = 1

Group 3: These are semi-tolerant of pollutants. Circle each animal found.

Black Fly Larva

Non-Red Midge Larva

Snails: Orb or Gilled (right side opening)

*All Snails = 1

Amphipod or Scud

No. of group 3 animals circled:

Group 4: These are tolerant of pollutants. Circle each animal found.

Pouch Snail (left side opening)

Isopod or Aquatic Sowbug

Bloodworm Midge Larva (red)

Leech

Tubifex Worm

No. of group 4 animals circled:

For more information, call (608) 265-3887 or (608) 264-8948.
Download and print data sheets from
watermonitoring.uwex.edu/wav/monitoring/sheets.html

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Water Action Volunteers

GO WILD WITH WISCONSIN WILDCARDS!

CALCULATE THE INDEX SCORE

To assign a biotic index value to a sampled site, citizens first collect macroinvertebrates from the stream and separate them into groups of similar-looking organisms. Then, they use an identification key to help determine which organisms they have in their sample. Next, they circle those organisms on their recording form and determine an index score for the site. The biotic index value for the stream site depends on how many types of organisms are present in a sample and the tolerance category of those organisms. Streams are rated as having poor, fair, good, or excellent water quality with the biotic index.

HOW TO USE THE FORMULA

- Enter each boxed number from the Biotic Index in the formula below.
- Multiply the entered number from each group by the group value.
- Total the number of animals in column A.
- Total the calculated values in column B.
- Divide the total value by the total number of types of animals that were found (B divided by A) to arrive at the Index Score.

	A	GROUP VALUE	B
NO. OF ANIMALS CIRCLED FROM GROUP 1		X 4 =	
NO. OF ANIMALS CIRCLED FROM GROUP 2		X 3 =	
NO. OF ANIMALS CIRCLED FROM GROUP 3		X 2 =	
NO. OF ANIMALS CIRCLED FROM GROUP 4		X 1 =	
TOTALS			

DIVIDE COLUMN B BY COLUMN A:

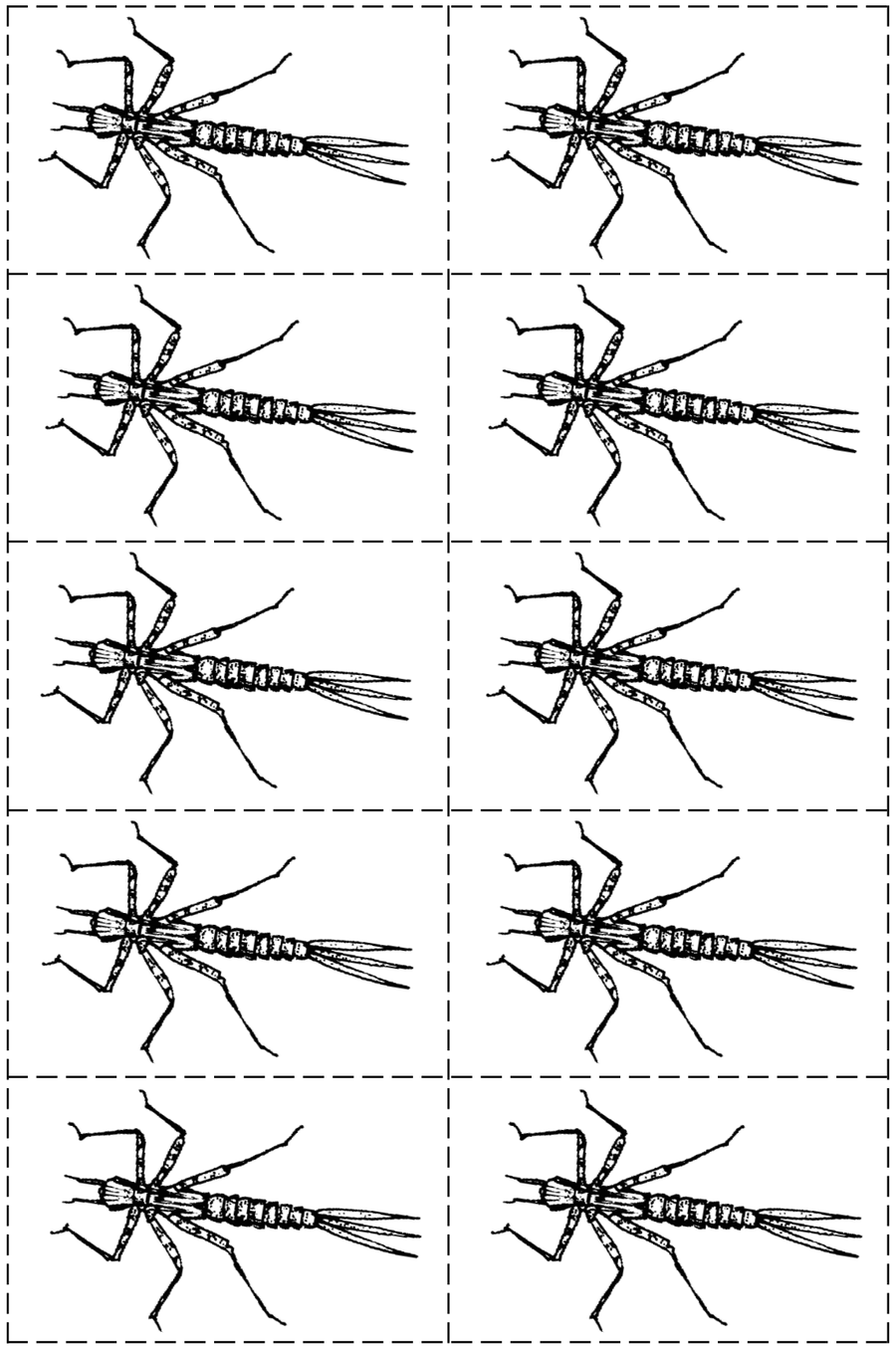
INDEX SCORE =

HOW HEALTHY IS THE STREAM?

Excellent .....3.6+
Good .....2.6 - 3.5
Fair.....2.1 - 2.5
Poor .....1.0 - 2.0

Go Wild with Wisconsin Wildcards! © 2005 WI Dept. of Natural Resources, WI Environmental Education Board, Friends of WI State Parks

Cut apart these damselfly nymphs and use them to practice the Key to Macroinvertebrate Life in the River.



GO WILD WITH WISCONSIN WILDCARDS!

I WENT HIKING AT . . .

METHOD

Play a cumulative word game about a visit to a special place in Wisconsin. Then, find out about the public lands that make our state special.

GRADES

4 – 6

ACTIVITY TIME

30 – 50 minutes

SETTING

Classroom

MATERIALS

- **Wisconsin Wildcards: Natives, Wisconsin State Forests, and Special Places** (see the lists on page 113 and 115). For each group of 10 kids, you will need 2 "place" cards and 8 random native plants and animals.
- State maps or **Wisconsin State Park System Visitor Information Guides,** available from WDNR service centers, and state parks, forests, and trails
- Internet access

STANDARDS

English Language Arts: E.4.3, E.8.3
Social Studies: A.8.1

SCOUT CONNECTIONS

Junior Girl Scouts: Camper

INTRODUCTION

Wisconsin has over 60 state parks, forests, and recreation areas; about 33 state trails; and more than 400 state natural areas. That's hundreds of thousands of acres of land, miles and miles of trails, and lots of chances for adventure.

DOING THE ACTIVITY

1. **Play "I Went Hiking at . . ."** Divide into groups of about 10 kids each. Give each group a stack of 10 **Wildcards**. The top card should be a **Wisconsin State Forests or Special Places** card. The first kid in the group starts the game by saying, "I went hiking at ____ (fill in the name of the place) with _____ (person's name)." The next kid takes the next card from the pile and adds a sentence to the story. For example, he says, "I went hiking at ____ with ____. Within a few minutes of leaving the trailhead, we saw a _____." The third person takes the next card, repeats the first part of the story, and adds a new sentence that (a) includes the subject of the next **Wildcard** and (b) makes sense.
2. **Locate Wisconsin State Forests and Special Places on a map.** Divide into groups of 2 - 3 and give each group a **Wisconsin State Forests** or **Special Places Wildcard.** Pass out state maps, State Park System Visitor Information Guides, or the Internet links listed under **Finding Out More.** Locate the place featured on the card. Find the state property located closest to your community. Find the state property that looks the most interesting! If you could visit any state property in Wisconsin, where would you like to go?
3. **Find out more.** Challenge your kids to find out more about Wisconsin's state lands. Here are some ideas for possible projects:
   - Plan a road trip using a mapping application.
   - Discover the significant features at the property.
   - Access DNR WebView. <http://dnr.wi.gov/maps/gis/appwebview.html>
   - Explore the property's history or geology.
   - Use the Natural Heritage Inventory to discover rare species. <http://dnr.wi.gov/topic/nhi/>

ASSESSING STUDENT LEARNING

Ask students to design vacation brochures for state parks, forests, recreation areas, or trails. Give students a rubric. Here are some ideas to get you started:

Brochures should be positive and promote the unique features of the location. They should be a two-, three-, or four-fold brochure with titles and headings to make information easy to find.

Brochures should include a state map indicating general location and a site map.

Brochures should include a brief history of the site, features and attractions, scenic photos or drawings, and photos or drawings of resident plants and animals.

EXTENDING THE LEARNING

Get involved in letterboxing. You and your group might enjoy finding boxes hidden around the state. Find out how to get started on the Internet. <www.letterboxing.org>

FINDING OUT MORE!

Outdoor Recreation. Wisconsin Department of Natural Resources. 2012. Links to the Wisconsin State Park System, State Natural Areas, Public Recreation Lands, public hunting areas, and other DNR-managed lands. <http://dnr.wi.gov/topic/OutdoorRecreation/>

Wisconsin State Park System. Wisconsin Department of Natural Resources. 2012. <http://dnr.wi.gov/topic/parks/findapark.html>

WISCONSIN WILDLIFE

WATCHING

METHOD

Teams compete to identify the animals on Wisconsin Wildcards. Then, kids find out where they would have to go to see the wild animals shown on their cards.

GRADES

3 – 6

ACTIVITY TIME

45 – 60 minutes

SETTING

Anywhere

MATERIALS

- **Wisconsin Wildcards: Natives** (see list on page 113). Select about 30 familiar animals

STANDARDS

Environmental Education: B.8.14

SCOUT CONNECTIONS

Junior Girl Scouts: Animal Habitats

INTRODUCTION

Wisconsin is teeming with animals in fields, forests, and wetlands. Some animals are common throughout the state; others are found only in specialized habitats. Fortunately, there are many places where you can see wild animals and their signs all over the state.

DOING THE ACTIVITY

1. **Play the game.** Divide into two or three teams. Stand in lines. Show a card to the first players in each team. Award one point to the team of the first player who can correctly identify the animal. Judge how exact their answers must be. The first players go to the back of the line. Continue the game with the next set of players. After all players have had a turn, tally the scores and announce the **Wildlife Watching Champions**.

2. **Talk about the best places to see wild animals.** Locally, where are the best places to see wild plants and animals? Could you see all the animals shown on the cards in your part of the state? Use the resources listed below to find out!
3. **Research good viewing places and times.** Make a list of wild animals that are not in your area. Answer some of these questions about each one:
   - Is the animal rare or common?
   - Where in the state would you have to go to see it?
   - Is this animal most visible during certain times of the year (e.g., January for bald eagles and warm months for frogs)?
   - Is it most visible at certain times of the day?

ASSESSING STUDENT LEARNING

Each student should choose an animal **Wildcard** and make a map that shows where the animal lives in Wisconsin. They should find at least two places open to the public they could go to see the animal. For each place, they should find out the name, address, phone number, and website (if applicable). Then, using a mapping program, they should obtain driving directions from school to the location. Encourage students to share their findings with the class.

EXTENDING THE LEARNING

Discover why Special Places are special. Give each pair of kids a **Special Places** or **Wisconsin State Forests** card. Challenge them to find at least five Wildcards that show native plants or animals that live in that location.

Map the rare ones. Post a large map of the state on a bulletin board. As kids discover the best places to see rare animals, ask them to label the locations on the map.

FINDING OUT MORE!

Great Wisconsin Birding and Nature Trail. 2012. <www.wisconsinbirds.org/trail>

Outdoor Recreation. Wisconsin Department of Natural Resources. 2012. Links to the Wisconsin State Park System, State Natural Areas, public recreation lands, public hunting areas, and other WDNR managed lands. <http://dnr.wi.gov/topic/OutdoorRecreation/>

Wisconsin NatureMapping. Beaver Creek Reserve, Wisconisn Department of Natural Resources, the Aquatic and Terrestrial Resources Inventory. 2012. Links to species lists, maps, surveys, and other information maintained by partner organizations. <www.wisnatmap.org/>

Wisconsin Wildlife Viewing Guide. Mary K. Judd. 1995. Check out this guide to discover 76 designated Wildlife Viewing Areas located around the state. <http://books.google.com/books/about/Wisconsin_Wildlife_Viewing_Guide.html?id=zc2S9Ts2H_YC>

IT'S MINE!

METHOD

After collecting personally meaningful sets of **Wildcards**, kids discover the scientific benefits, legal concerns, and ethical considerations associated with making real natural history collections.

GRADES

3 – 5

ACTIVITY TIME

One or two 50-minute periods

SETTING

Anywhere

MATERIALS

- **Wisconsin Wildcards**. Use all the cards that you have available!
- **It's Mine!** by Leo Lionni

STANDARDS

English Language Arts: B.4.1, B.8.1

INTRODUCTION

Does anybody like to collect things? What do you like to collect?

DOING THE ACTIVITY

1. **Pass out the Wildcards randomly.** Tell the kids to take a close look at their cards.
2. **Trade and collect cards.** Encourage the kids to get up, move around, and look at each other's cards. Tell them the object of the activity is for them to put together a meaningful collection of cards. They can trade cards or share cards, but they can't buy or steal! Let the kids decide if some cards are "worth" more than others when trading.
3. **Share collections.** Ask several kids to share their card collections. What is it about their collection that is meaningful to them? Do the cards have unifying themes or are they just favorites? What cards are "missing" from their collections? What are the most valuable cards in their collections? Why are they most valuable?
4. **Connect to real objects.** What if the collections were real natural history objects instead of just cards? Talk about whether they could collect the actual objects.

5. **Think about any legal restrictions.** For example, federal laws protect all migratory birds. It is illegal to possess any bird, body part, feather, egg, or nest. How could they find out about other laws that regulate game and non-game species? What about laws that protect endangered or threatened species?
6. **Think about ethical concerns and read It's Mine!** Talk about why Milton, Rupert, and Lydia were so selfish. Think about times when we are like these frogs. What happens when people collect things for themselves instead of sharing them with everyone? What if everyone collected everything she/he liked? Would there be anything left for the future?
7. **Think about the personal benefits of collections.** When we collect something, it shows that we care about it. Think of personal reasons why a collection might be beneficial. Could a collection started while young lead to something more? Remind the kids of great naturalists, scientists, and explorers like Charles Darwin, John James Audubon, Thomas Jefferson, Meriwether Lewis, and William Clark. These people collected many specimens. Collecting things and studying them might lead to becoming a scientist, working to protect a piece of land that they have grown to love, or trying to change legislation to conserve natural resources.
8. **List the positive and negative aspects of collecting.** Discuss the legal, ethical, social, health, and other issues surrounding collections of natural objects. Discuss the benefits of making collections. See additional information on page 75.
9. **Write personal statements.** Encourage the kids to write a paragraph describing how they feel about collecting natural history objects.

Assessing Student Learning

Ask kids to assemble a nature-related collection and present it to the class. The collection can take many forms! The kids must follow legal statutes, the ethical guidelines discussed in class, and the personal statements they wrote. The collection must have some value (i.e., personal, historical, or social). The collection must also be properly labeled. Here are some possible collections to get you and your students started:

animals and plants that visit my backyard – photos/sketches
roadkill butterfly collection made by removing butterflies from car grills
flowers that bloom in a certain area or month – photos/sketches/specimens
trees in a local park – leaf rubbings, pressed leaves, photos
invasive plants that are invading a local area – specimens!
ads that feature wild animals to sell products
plaster casts of mammal or bird tracks
fish prints from fish caught for consumption
rocks from a local quarry
seeds or cones
cloud photos

Extending the Learning

Share collections. Encourage the kids to bring in their collections to show the class. Set up a rotating "museum" table to display collections. Be sure to protect the collections from damage or theft.

GO WILD WITH WISCONSIN WILDCARDS!

To Collect or Not to Collect?

Scientific Benefits

- Objects in a local collection show the variety of plants and animals that live in that area.
- If conditions change, natural history specimens provide a record of the past.
- Well-labeled collections serve as references for research.
- Specimens in a collection can be used for exhibition or educational purposes.

Legal Concerns

- Know the law. Since rules and regulations change, be sure you have the most current information.
- Know your location. Regulations vary from state to state and within states. State Natural Areas, state parks, local parks, and nature centers usually have special restrictions on what you can or cannot collect.
- Know your subject. Regulations vary greatly! Be sure you can identify any endangered, threatened, or protected species. Remember to collect only photographs and memories of protected species!

Ethical Considerations

- Collections should preserve and guard our natural heritage. Objects should be collected with care and be properly documented so that they are meaningful and do not "waste" the resources they are designed to protect.
- Ordinary citizens shouldn't make collections of plants or animals that are in danger of extinction. Leave these collections to specialists!
- Collections of culturally sensitive objects must be done by professionals with understanding of the beliefs of individuals and society.

Good Collections Have Good Labels

Common name of specimen
Scientific name
Location where found – give as much detail as possible
Date collected
Name of collector
Ecological or geological information (e.g., for an insect include the name of the plant it was found on, for a rock include information about surrounding landscape)

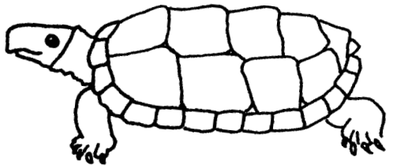
CHECK OFF!

METHOD

Play a card game where you need to collect the most different kinds of animals to win. Then, check out species lists for many of the plants and animals of Wisconsin.

GRADES

5 – 8



ACTIVITY TIME

30 – 45 minutes

SETTING

Anywhere

MATERIALS

- **Wisconsin Wildcards: Natives - Furbearers, Birds, Native Reptiles, Aquatic Invertebrates, or Match Your Catch!** (see the list on page 113). You will need 12 cards from 4 of these sets for each group of 4 - 7 kids.

SCOUT CONNECTIONS

Boy Scouts of America: Fish and Wildlife Management

INTRODUCTION

Some people travel across the country, get up at the crack of dawn, slog through bogs, and endure extreme temperatures just to say that they have seen a certain plant or animal. These people are collectors, but instead of collecting objects, they collect sightings, memories, and names. These collectors carry around lists – lists of all the plants or animals they should expect to see in a certain area and, more importantly, lists of every species that they have personally seen in their lives. They are called life lists!

DOING THE ACTIVITY

1. **Play Check Off!** See game instructions on page 89.
2. **Think about how many mammals live in Wisconsin.** In the game, kids collected cards. What if we wanted to collect sightings of real animals and plants? Start by brainstorming a list of all the mammals that live in the state. How many can your group name? Check out the official checklist on page 80. How many did you miss?
3. **Check off the mammals.** Using the mammal checklist, tally the number of kids that have seen each mammal. Invite kids that have seen rare mammals to tell about their

encounters. Are there any mammals that no one in your class has ever seen? Note: Some of the mice, voles, shrews, and squirrels can be very confusing - even to scientists!

4. **Find out how many plants and animals are native to Wisconsin.** Divide the kids into groups and assign each group a category of plants or animals. Using the Internet or other resources, ask them to find a state species list for their category of plants or animals.

Assessing Student Learning

Ask students to design an accurate and interesting way to report the total number of species in Wisconsin. They could use charts, graphs, posters, commercials, radio spots, mime, tap dancing, or some other creative presentation.

Extending the Learning

Invite a "lister" to speak. If you know people who actively pursue a life list of birds, butterflies, or other types of living things, invite them to talk to your group. Be ready with questions about what inspires them and how they track the species they have seen.

Find local lists. Contact a nearby state park or nature center and ask for lists of locally common plants and animals.

Start a class list. Post a list of local mammals, birds, trees, or some other group of species. Ask kids to put their names after plants or animals on the list as they see them.

Finding Out More!

Checklists of Wisconsin Vertebrates. Dreux Watermolen and Matthew D. Murrell. Wisconsin Department of Natural Resources. 2001. Includes working lists for fishes, amphibians, reptiles, birds, and mammals. PUB-SS-954 <http://dnr.wi.gov/files/pdf/pubs/ss/ss0954.pdf>

Checklist of the Vascular Plants of Wisconsin. Mark Allen Wetter, Theodore Cochrane, Merel Black, Hugh Ilitis, and Paul Berry. Wisconsin Department of Natural Resources. 2001. PUB-SS-192 2001.

Wisconsin Checklists on the Web

Mammals
<http://dnr.wi.gov/files/pdf/pubs/ss/ss0954.pdf>

Birds
<http://dnr.wi.gov/files/pdf/pubs/ss/ss0954.pdf>>
<http://dnr.wi.gov/topic/endangeredresources/birdtrail.html>

Fish
<http://dnr.wi.gov/topic/fishing/documents/species/wifish.pdf>

Reptiles & Amphibians
<http://dnr.wi.gov/files/PDF/pubs/er/ER0110.pdf>
<http://www4.uwm.edu/fieldstation/herpetology/atlas.html>

Butterflies
<http://wisconsinbutterflies.org/butterfly>

Dragonflies and Damselflies
<http://wiatri.net/inventory/odonata/>

Freshwater Mussels
<http://wiatri.net/inventory/mussels/>

Mayflies
<www.npwrc.usgs.gov/resource/distr/insects/mfly/chklist/states/wi.htm>

Stoneflies
<www.npwrc.usgs.gov/resource/distr/insects/sfly/chklist/states/wi.htm>

Bryophytes
<http://wisplants.uwsp.edu/bryophytes/index.html>

Lichens
<www.botany.wisc.edu/wislichens/index.html>

Plants
<http://wisplants.uwsp.edu/WisPlants.html>

Vascular Plants
<www.botany.wisc.edu/wisflora/>

WISCONSIN MAMMALS

Virginia Opossum *Didelphis virginiana*
Northern Short-tailed Shrew *Blarina brevicauda*
Least Shrew *Cryptotis parva*
Arctic Shrew *Sorex arcticus*
Cinereus Shrew *Sorex cinereus*
Pygmy Shrew *Sorex hoyi*
Water Shrew *Sorex palustris*
Star-nosed Mole *Condylura cristata*
Eastern Mole *Scalopus aquaticus*
Big Brown Bat *Eptesicus fuscus*
Silver-haired Bat *Lasionycteris noctivagans*
Red Bat *Lasiurus borealis*
Hoary Bat *Lasiurus cinereus*
Little Brown Myotis *Myotis lucifugus*
Northern Myotis *Myotis septentrionalis*
Indiana Bat *Myotis sodalis*
Eastern Pipistrelle *Pipistrellus subflavus*
Snowshoe Hare *Lepus americanus*
White-tailed Jackrabbit *Lepus townsendii*
Eastern Cottontail *Sylvilagus floridanus*
Northern Flying Squirrel *Glaucomys sabrinus*
Southern Flying Squirrel *Glaucomys volans*
Woodchuck *Marmota monax*
Least chipmunk *Neotamias minimus*
Eastern Gray Squirrel *Sciurus carolinensis*
Eastern Fox Squirrel *Sciurus niger*
Franklin's Ground Squirrel *Spermophilus franklinii*
Thirteen-lined Ground Squirrel *Spermophilus tridecemlineatus*
Eastern Chipmunk *Tamias striatus*
Red Squirrel *Tamiasciurus hudsonicus*
Plains Pocket Gopher *Geomys bursarius*
American Beaver *Castor canadensis*
House Mouse *Mus musculus* (introduced)
Brown Rat *Rattus norvegicus* (introduced)
Southern Red-backed Vole *Clethrionomys gapperi*
Prairie Vole *Microtus ochrogaster*
Meadow Vole *Microtus pennsylvanicus*
Woodland Vole *Microtus pinetorum*
Muskrat *Ondatra zibethicus*
White-footed Deer Mouse *Peromyscus leucopus*
North American Deer Mouse *Peromyscus maniculatus*
Western Harvest Mouse *Reithrodontomys megalotis*
Southern Bog Lemming *Synaptomys cooperi*
Woodland Jumping Mouse *Napaeozapus insignis*
Meadow Jumping Mouse *Zapus hudsonius*
Common Porcupine *Erethizon dorsatum*
Feral dog *Canis familiaris* (introduced)
Coyote *Canis latrans*
Gray Wolf *Canis lupus*
Gray Fox *Urocyon cinereoargenteus*
Red Fox *Vulpes vulpes*
Black Bear *Ursus americanus*
Striped Skunk *Mephitis mephitis*
Eastern Spotted Skunk *Spilogale putorius*
Common Raccoon *Procyon lotor*
Wolverine *Gulo gulo* (extirpated)
Northern River Otter *Lontra canadensis*
American Marten *Martes americana*
Beech Marten *Martes foina* (introduced)
Fisher *Martes pennanti*
Ermine *Mustela erminea*
Long-tailed Weasel *Mustela frenata*
Least Weasel *Mustela nivalis*
American Mink *Mustela vison*
American Badger *Taxidea taxus*
Feral cat *Felis catus* (introduced)
Cougar *Puma concolor* (extirpated)
Canada Lynx *Lynx canadensis*
Bobcat *Lynx rufus*
Feral pig *Sus scrofa* (introduced)
Moose *Alces alces*
Elk *Cervus elaphus*
White-tailed Deer *Odocoileus virginianus*
Caribou *Rangifer tarandus* (extirpated)
American Bison *Bos bison* (extirpated)

WILD CALLINGS

METHOD

After researching the types of scientists that might study one kind of plant or animal, kids will play a game to discover the variety of wild callings that are available.

GRADES

5 – 8

ACTIVITY TIME

20 minutes plus homework time

SETTING

Anywhere

MATERIALS

- **Wisconsin Wildcards: Natives and Alien Invaders** (see lists on pages 113 - 114). Select one or more cards from each of these categories: Furbearers, Large Mammals, Upland Game Birds, Wading Birds, Native Reptiles, Match Your Catch!, Native Trees, Aquatic Invertebrates, Alien Invaders: Forest Pests, Alien Invaders: Terrestrial Plants. You will also need the following individual cards: Reed Canary Grass or Japanese Stilt Grass, Rusty Crayfish, Zebra Mussel, Riffle Beetle or Asian Lady Beetle, Cecropia Moth or Karner Blue Butterfly, Moving Firewood, Paddlefish, Sea Lamprey or Black Spot.
- **Wild Callings** worksheet on page 83 (1 copy per kid)

STANDARDS

Environmental Education: B.8.22
Science: G.8.1

SCOUT CONNECTIONS

Boy Scouts of America: Environmental Science, Fish and Wildlife Management, Insect Study

INTRODUCTION

Wild plants and animals aren't the only wild things in Wisconsin. There are a lot of people with wild jobs. Many of these people are scientists who study plants and animals. "Scientist" is a very broad term. A scientist can't possibly study everything! Most scientists study one small piece of science. For example, what does an astronomer study? How about a geologist?

Some of the names for scientists are based on different languages, especially Latin. Many names are long and end with "ologist" or "ist." For example, a biohydrologist studies the water cycle's affects on plants and animals. If you take the name apart, you see bio (life) and hydro (water). How about biometeorologist? Would you believe it is a scientist who studies the affects of weather and climate on plants and animals? Now it's your turn!

DOING THE ACTIVITY

1. **Pass out cards.** Be sure each student has at least one card to look at.
2. **Discuss wild careers.** Ask the kids if anyone has a card for an interesting animal or plant that he/she would like to know more about. What kinds of scientists would study that plant or animal? Pick a card at random and brainstorm all the careers that could be associated with it. For example, if you picked lake trout, you might list an ichthyologist (studies fish) or a limnologist (studies freshwater life). If you picked a red fox you might list a mammalogist (studies mammals), wildlife manager, or a scatologist (studies animal droppings).
3. **Assign kids plant or animal Wildcards.** As homework, ask each kid to find out at least three careers related to the plants or animals shown on their cards.
4. **Play the game.** Pass out the worksheet on page 83. Challenge the kids to find a Wildcard match for each career shown on their sheets.
5. **Wrap up.** Ask kids which careers surprised them the most. If they could choose any of the careers listed on the worksheet, which ones would they choose. Why?

ASSESSING STUDENT LEARNING

Ask students to each choose one career and find out more about it. They should identify the skills, knowledge, and education needed to apply for jobs in their chosen careers.

FINDING OUT MORE!

EEK! (Environmental Education for Kids!). Ed. Carrie Morgan. Wisconsin Department of Natural Resources. 2012. Electronic magazine for kids in grades 4 - 8. Check out the "Get a Job" section. <http://dnr.wi.gov/eek/job/index.htm>

The Snake Scientist, The Woods Scientist, The Wildlife Detectives, Hidden Worlds, The Bug Scientist, and **Once A Wolf**. Scientists in the Field series. Excellent books by a variety of authors take kids inside the work of scientists.

GO WILD WITH WISCONSIN WILDCARDS!

WILD CALLINGS

Agricultural entomologist _____
Agrostologist _____
Arboriculturist _____
Astacologist _____
Botanist _____
Brachiopodologist _____
Coleopterist _____
Dendochronologist _____
Entomologist _____
Fisheries biologist _____
Forester _____
Forest pest specialist _____
Game manager _____
Herpetologist _____
Ichthyologist _____
Invertebrate biologist _____
Lepidopterist _____
Limnologist _____
Mammalogist _____
Mycologist _____
Nature photographer _____
Nature writer _____
Ornithologist _____
Paleontologist _____
Parasitologist _____
Phytogeographer _____
Phytopathologist _____
Scatologist _____
Silviculturist _____
Taxonomist _____

WILD CALLINGS

Information in parentheses describes some of the more obsure jobs. Some cards are listed as an aid to the educator.

Agricultural entomologist (crop pest management) _____ Asian Lady Beetle
Agrostologist (grasses) _____ Reed Canary Grass or Japanese Stilt Grass
Arboriculturist (cultivation of trees) _____ White, Black, or Green Ash
Astacologist (crayfishes) _____ Rusty Crayfish
Botanist (plants) _____ any plant
Brachiopodologist (clams and mussels) _____ Zebra Mussel
Coleopterist (beetles) _____ Riffle Beetle or Whirligig Beetle
Dendochronologist (tree growth) _____ White, Black, or Green Ash
Entomologist (insects) _____ any insect
Fisheries biologist _____ any fish
Forester _____ any card representing a forest plant or animal
Forest pest specialist _____ Gypsy Moth, Emerald Ash Borer
Game manager _____ any Furbearer or Upland Game Bird
Herpetologist (reptiles and amphibians) _____ any reptile or amphibian
Ichthyologist (fish) _____ any fish
Invertebrate biologist _____ Spiny Waterflea or invertebrates in the Native Species category
Lepidopterist (butterflies and moths) _____ Cecropia Moth or Karner Blue Butterfly
Limnologist (freshwater ecosystems) _____ any aquatic plant or animal
Mammalogist (mammals) _____ Furbearers or Large Mammals
Mycologist (fungi) _____ Moving Firewood (fungus)
Nature photographer _____ anything!
Nature writer _____ anything!
Ornithologist (birds) _____ any bird
Paleontologist (fossil records) _____ Paddlefish
Parasitologist (parasites) _____ Sea Lamprey or Black Spot
Phytogeographer (distribution of plants) _____ any plant
Phytopathologist (diseases of plants) _____ any plant
Scatologist (animal droppings) _____ any animal
Silviculturist (forest ecology) _____ White, Black, or Green Ash
Taxonomist (classification of living things) _____ any plant or animal

GO WILD WITH WISCONSIN WILDCARDS!

GAMES, TRICKS, AND STUNTS

PLAY WITH YOUR COLLECTION!

Wildcards are fun to collect, and you can learn a lot by reading them, but there is so much more you can do! Turn the page to find enough games, tricks, stunts, and puzzles to keep a group of kids busy for hours.

WILDCARDS NEEDED

The kind and quantity of **Wildcards** listed with these directions indicates the number needed for one "game." You can play almost half the games in this section with one complete deck of **Wildcards**. You can play every game in this section if you have four decks of cards. If you plan on having several "games" going at the same time, be sure that they use different cards.

HOW CAN YOU USE THESE IDEAS?

If you are a teacher or youth group leader, you know that more knowledge is "caught" than "taught." By encouraging your kids to play with **Wildcards**, they will learn all kinds of cool things about Wisconsin's natural resources. Keep a stack handy and use them:

- On campouts.
- When kids are bored.
- On rainy or hot days.
- To fill the time.
- Whenever you get the chance!

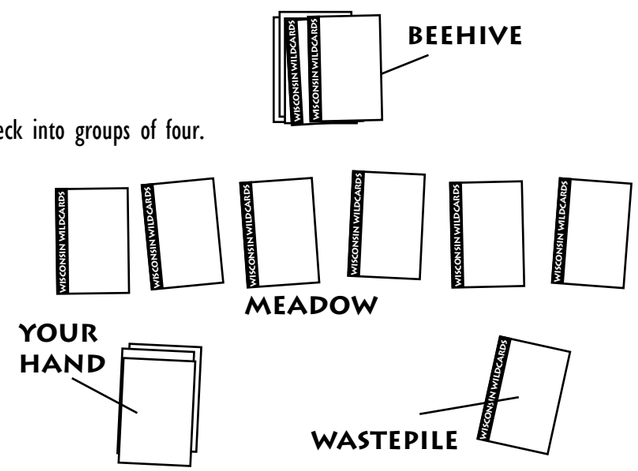
WANT TO DO MORE?

Some of the games, tricks, puzzles, and stunts in this section are connected to activities in the first half of this guide. Watch for the **Want to do more?** heading.

GO WILD WITH WISCONSIN WILDCARDS!

BEEHIVE

SOLITAIRE GAME
EASY & FAST
1 PLAYER



OBJECT

Match the whole deck into groups of four.

WILD CARDS

4 each of 13 different cards

DEAL

Deal 10 cards in a face down pile. Turn the pile over to reveal the bottom card and place them on the table. This is the beehive. Below the beehive, deal six cards in a row. This is the meadow.

PLAY

Look for pairs in the meadow. If you find one, place one card on top of the other. As you move cards, you will leave "holes" in the meadow. Use cards from the beehive to fill the holes, so that you always keep six cards in the meadow. Continue making matches as long as you can. If the card on top of the beehive matches a card in the meadow, put it on top of the card in the meadow. Never add to the beehive.

Now take the undealt part of the deck and hold it in your hand facedown. Count off a batch of three cards and place them faceup on the table to start a wastepile. Look to see if the card on top of the wastepile can be added to any of the piles in the meadow. If so, move it to the meadow and reveal the next card in the wastepile that you can use. When you can't move any more cards, count off another batch of three cards and try again. Don't change the order of the cards in the wastepile. And only play the top card!

When you get all four matching cards, remove them, and put the top card from the beehive into the empty space. When you run out of cards in the beehive, use the cards from your hand to fill the spaces.

When there are no more cards in your hand, pick up the wastepile without shuffling it, turn it over and go through it again, three cards at a time. You can do this as many times as you like until you win the game or can't move any cards.

CHALLENGE

To make the game more challenging, use 13 groups of four related cards. For example, one group could be four different canines (wolf, coyote, red fox, gray fox), and another could be four different trout (lake, brook, rainbow, and brown).

CHECK OFF!

VARIATION OF MY SHIP SAILS!
EASY & FAST
4 – 7 PLAYERS (4 – 5 PLAYERS IS BEST)

OBJECT

Be the first person to collect all four groups: **Furbearers**, **Native Reptiles**, **Native Species**, and **Match Your Catch!**

WILDCARDS

12 different **Furbearers** (gray)
12 different **Native Reptiles** (brown)
12 different **Native Species** (green)
12 different **Match Your Catch!** (yellow)

Note: If one of these groups is not available, substitute 12 different birds (brown) or 12 different **Special Places** (red).

DEAL

Shuffle the cards. Deal out seven cards to each player, one at a time and facedown. Place the remainder of the deck facedown. It will be used as a draw pile.

PLAY

Everyone: Pick up your cards and arrange them by colored sidebars. Pick a group to collect, but be prepared to change during the game!

Dealer: Draw the top card off the remainder pile. Decide if you want to keep it or discard it. If you don't want it, pass it facedown to the player on your left. If you keep it, choose a different card from your hand to discard. Pick up the next card off the remainder pile and continue.

Player to the Dealer's left: Pick up the discarded card from the dealer and decide if you will keep it or discard it. Pass your discard to the person on your left.

Everyone: Keep on passing and picking up cards while you try to get a handful of cards of the same kind of animals. Don't take turns. This game is a lot more fun if everyone plays at the same time!

Last player: If you are the last person to see the cards, put your discards in a pile to your left.

Everyone: The first person to have seven cards in the same group wins the round. Make note of which kind of animal the person collected. To win the game, a player must win at least four rounds by collecting all four groups of animal cards.

Note: If the dealer runs out of cards, he/she picks up the discarded cards, turns them over, and uses them as the new remainder pile.

CHALLENGE

Make a list of all the species in each of the four groups. When a player wins a round, he/she can check off the cards in his/her hand. The object of the game is to check off every animal in a group. An even more challenging variation would be to check off every animal on the list!

WANT TO DO MORE?

This game is connected to an activity! See Check Off! on page 77 to learn more about all the plants and animals that live in Wisconsin.

CLEAR THE FIELD

SOLITAIRE GAME
CHALLENGING
1 PLAYER

OBJECT

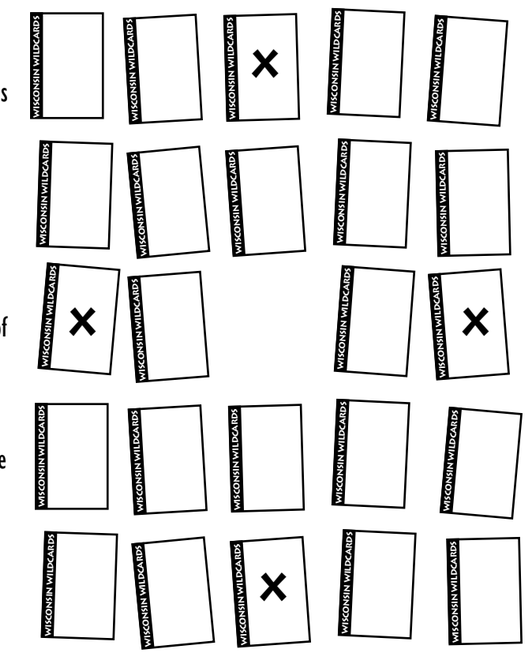
Remove as many invasive species as possible from the playing field.

WILDCARDS

24 **Alien Invaders: Plants**
(It doesn't matter if there are duplicates or uneven numbers of different cards!)

DEAL

Place 24 cards on the table. See diagram.



PLAY

Pick up one of the cards marked with an "X." Put it in the empty space in the center and remove the card that you jumped. Then, continue jumping any other card over another into an empty space, removing the card you jump each time. You can jump up, down, and sideways, but not diagonally. If you can finish with only one card left, you rule with cards. Now, get out there and remove some **real** invasive species!

CONTROL MAGIC?

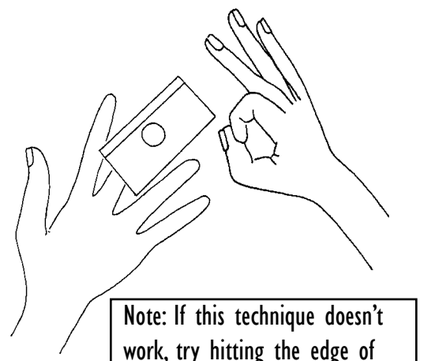
CARD STUNT
MODERATE TO DIFFICULT
1 PLAYER

OBJECT

Knock the invasive species out of the way without losing anything.

WILDCARDS AND OTHER THINGS

1 **Alien Invaders** card
1 penny



Note: If this technique doesn't work, try hitting the edge of the card with your index finger (pointing down).

DEAL

Give each kid a **Wildcard** and a penny.

PLAY

Balance a card on the second finger of your left hand (right hand if you are left-handed). Then take a coin and place it on top of the card directly over the tip of your second finger. See the drawing. The stunt is to remove the card without touching or dropping the coin.

STRATEGY

Try to flick the card with the first finger of your opposite hand. Aim for near one of the corners. You want the card to fly away in a whirling motion, leaving the coin sitting on your finger.

Don't think about how much money it costs to get rid of invasive species; that will only distract you!

WANT TO DO MORE?

This stunt is connected to an activity! See Control Magic? on page 51 to learn more about the costs of controlling invasive species.

COVER UP

SOLITAIRE GAME
EASY & FAST
1 PLAYER

OBJECT

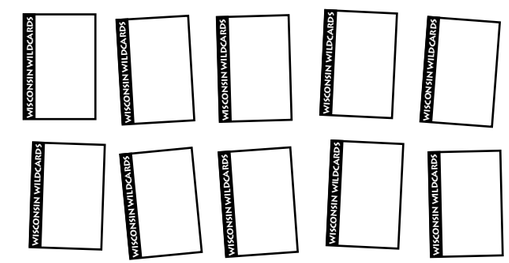
Deal the whole deck onto a 10-card layout.

WILDCARDS

4 each of 13 different cards

DEAL

Deal 10 cards faceup on the table in two rows of five cards each. Keep the rest of the cards facedown in your hand.



PLAY

Look for pairs. Cover the pairs with the two top cards from your hand. Place the new cards faceup, one on top of each of the pair. Keep covering up pairs with new cards from your hand. Usually, you can get rid of all the cards in your hand and win. However, if all 10 cards on the table are different, you are blocked. Shuffle and try again.

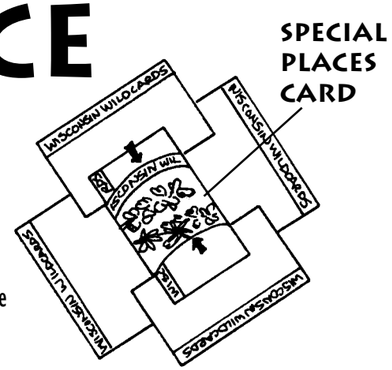
CHALLENGE

To make the game more challenging, use 13 groups of four related cards. For example, one group could be four different canines (wolf, coyote, red fox, gray fox), and another could be four different trout (lake, brook, rainbow, and brown).

GO WILD WITH WISCONSIN WILDCARDS!

DELICATE BALANCE

CARD STUNT
MODERATE TO DIFFICULT



OBJECT

One **Special Places** card magically lifts five native plant and animal cards into the air. When you take away the **Special Places** card, the plants and animals fall to the ground.

WILDCARDS

5 native plant and animal cards
1 **Special Places** or **Wisconsin State Forests** card

Note: Cards come in several thicknesses. Thin cards will not work for this trick!

DO THE TRICK

Show five native plant and animal cards and explain that state properties are special places in Wisconsin that have been set aside to protect habitat for plants and animals.

Explain that you will show how vital **Special Places** are with a simple card stunt. Claim that you can hold all five plant and animal cards in the air without even touching them. All you will touch is the one **Special Places** card, and that card will be on the top! Offer to allow others to try to accomplish this feat.

When everyone fails (you hope!), you are all set to show off the trick:

- Lay one plant or animal card on the table.
- Bend the **Special Places** card slightly and lay it across the first card.
- Place two plant or animal cards next to the first card and over both short ends of the **Special Places** card.
- Put the last two cards carefully in place by weaving them under the short ends of first card and over the corners of the other two plant or animal cards.
- Grab the **Special Places** card with your thumb and index finger (at the arrows in the diagram) and lift it off the table.
- Show what happens when the **Special Places** card pops out. There goes the habitat!

WANT TO DO MORE?

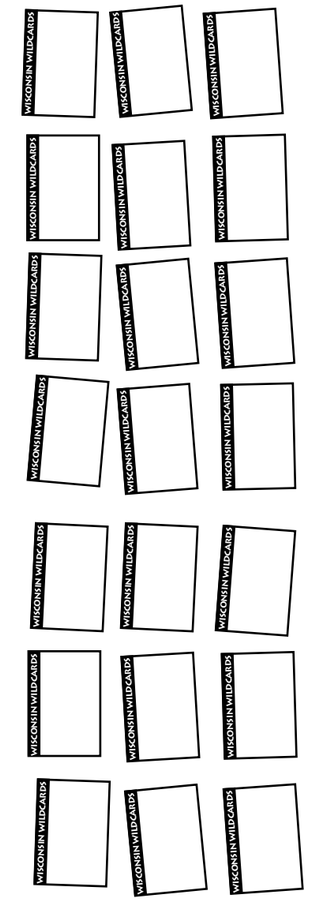
This trick is connected to an activity! See Delicate Balance on page 37 to learn more about how state properties protect natural resources.

GO WILD WITH WISCONSIN WILDCARDS!

FAVORITE WISCONSIN

WILD THING!

MAGIC TRICK



OBJECT

"Guess" the card that a volunteer has chosen after sorting the cards three times.

WILDCARDS

21 different native Wisconsin plants and animals

DO THE TRICK

Lay out three columns of face up cards, each containing seven cards. See diagram. While you look away, a volunteer chooses a card, but doesn't reveal the identity of the card to you. The volunteer could show it to the rest of the group, then return it to its location.

The volunteer tells you what column the card is in. You pick up the columns of cards - top to bottom. Be sure to pick up the column containing the "favorite" card second so it is in the middle of the deck.

Now lay the cards down by **row** – placing three cards in each row. Starting at the top, you will end up with seven rows of cards.

Ask the volunteer which **column** the card is in now. Pick up the cards by **column**, being sure to pick up the column with the "favorite" card second.

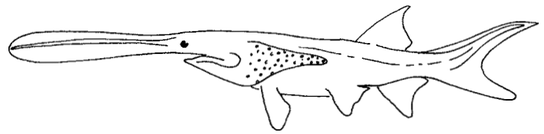
Once again, lay the cards out by **rows**. Once again, ask the volunteer which column the card is in. Reveal the "favorite" card by silently counting down four cards in the chosen column. Read the back of the card to discover why the plant or animal is a favorite!

WANT TO DO MORE?

This trick is connected to an activity! See Favorite Wisconsin Wild Things on page 13 to learn more about your favorite plants and animals.

GO FISH!

CARD GAME
EASY
2 – 5 PLAYERS



OBJECT

Collect the most groups of four matching cards by "fishing" in other players' "ponds."

WILDCARDS

4 each of 13 different fish (See next page for cards needed to play special versions of this game: The Great Lakes, The Mississippi River, or Wisconsin's Inland Lakes.)

DEAL

Shuffle and cut the cards. Deal five cards to each person, one at a time and facedown. If two or three play, deal seven cards to each. Place the rest of the cards facedown in a pile. This is the fishing hole.

PLAY

Everyone: Arrange your cards so that matching fish are together. If you have four of a kind, announce what kind of fish it is and put the cards face up on the table in front of you.

Player on the Dealer's Left: You go first. Look at your hand and decide which fish you need to make a set of four. You can ask any player to hand over any fish as long as you have at least one of that fish in your hand. For example, if you have at least one paddlefish in your hand, you can ask, "Sarah, do you have any paddlefish?" If Sarah has any paddlefish in her hand, she must give them all to you!

You continue asking the same or different players for specific cards and receiving them until a player doesn't have the card you asked for.

Other Players: If you don't have any of the cards that the first player wants, say "Go Fish." Then, that player goes fishing in the fishing hole, chooses the top card without peeking, and puts the card in his hand. His turn is over, unless, by sheer luck or coincidence, he gets the card that he was asking for. When this happens, he shows the card and starts his turn all over again!

Everyone: Play continues to the left around the table with asking and fishing. When you get a group of four, announce the kind of fish, and put the set faceup in front of you. If you run out of cards, you can take one from the fishing hole on your next turn. When

the fishing hole is empty, players without cards are out of the game. When the last card has been played, count your groups of four. The player with the most groups wins.

WANT TO DO MORE?

This game is connected to an activity! See Go Fish! on page 57 to learn more about fish and fish adaptations.

SPECIAL GO FISH! CARD GAMES

You need four of each fish for a total of 13 groups of four.

GO FISH THE GREAT LAKES!

1. Bowfin
2. Brook Trout
3. Burbot
4. Freshwater Drum
5. Lake Sturgeon
6. Lake Trout
7. Lake Whitefish
8. Northern Pike
9. Smallmouth Bass
10. Walleye
11. White Bass
12. White Sucker
13. Yellow Perch

GO FISH THE MISSISSIPPI RIVER!

1. Black Crappie
2. Channel Catfish/Flathead Catfish
3. Grass Pickerel
4. Iowa Darter
5. Largemouth Bass
6. Longnose Gar
7. Paddlefish
8. Quillback
9. Sauger
10. Shorthead Redhorse
11. Shovelnose Sturgeon
12. Smallmouth Buffalo
13. Walleye

GO FISH WISCONSIN'S INLAND LAKES!

1. Bluegill
2. Common Shiner
3. Green Sunfish
4. Largemouth Bass
5. Mottled Sculpin
6. Muskellunge
7. Northern Pike
8. Pumpkinseed
9. Smallmouth Bass
10. Walleye
11. White Sucker
12. Black Bullhead
13. Yellow Perch

GO WILD WITH WISCONSIN WILDCARDS!

HABITAT TOSS

CARD STUNT
EASY & FAST
2 PLAYERS

OBJECT

Toss the largest number of cards into the right habitat.

WILDCARDS AND OTHER THINGS

16 native plants and animals
3 boxes, buckets, or other containers labeled "Forest," "Wetland," and "Prairie"

DEAL

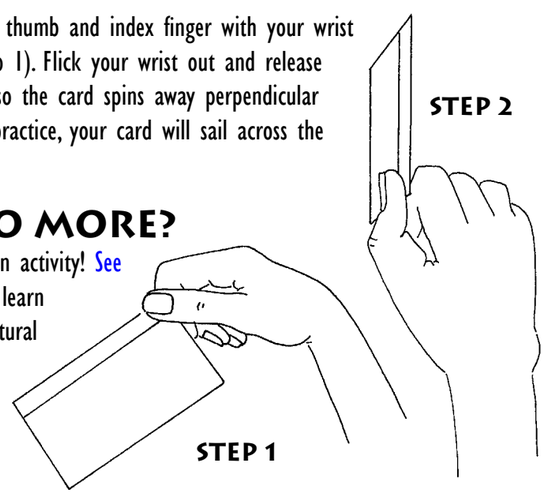
Divide the cards equally among the players. Place the boxes along a wall. Designate a throwing line that players must stand behind. Adjust the line if it is too hard or too easy.

PLAY

Everyone: Take turns. When it is your turn, stand behind the line and look at the top card in your hand. Decide which habitat it belongs in. Call out the name of the plant or animal and which habitat it belongs in. Try to toss the card into that habitat box. You get one point for saying the right habitat and one point for getting the card into the right box. Keep track of points on a scrap of paper. The player with the most points wins.

STRATEGY

Hold the card between your thumb and index finger with your wrist bent toward your body (Step 1). Flick your wrist out and release the card at the same time so the card spins away perpendicular to the floor (Step 2). After practice, your card will sail across the room into the right box!



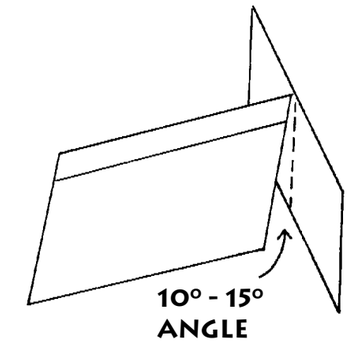
WANT TO DO MORE?

This game is connected to an activity! See Habitat Toss on page 33 to learn more about habitats and natural communitites in Wisconsin.

GO WILD WITH WISCONSIN WILDCARDS!

HOUSE OF WILDCARDS

CARD STUNT
MODERATE TO DIFFICULT
1 PLAYER OR TEAMS OF 3 - 4



OBJECT

Build the tallest house of cards!

WILDCARDS

As many as you dare!

DEAL

Solitaire: Follow the directions to build as high as the number of cards and your nerves will allow!

Teams: Divide the cards equally among the players. Take turns. When it's your turn, place the next card in the structure. Decide as a team how you will keep score.

PLAY

Lean two cards on their long edges to form a T. Place a third card against the middle of the base of the T to form another T. Now close the box with a fourth card to produce a half-card-by-half-card square, with a tail extending from each corner for stability. See view from above.

Place two cards side by side to form the roof, then another layer of cards turned 90 degrees for extra support.

Repeat the process until you run out of cards!

STRATEGIES

- Build on a flat, nonslip surface like low-nap carpeting.
- If you are right-handed, place the cards with your right hand. If you are left-handed, use that hand.
- Don't hold the cards too tightly. Relax. Be patient and keep trying.
- Make all leans about 10 – 15 degrees.
- Thinking about the intricacy, interconnectedness, and fragility of Wisconsin's habitats will take your mind off the construction, but it won't help you relax!

INVADERS

VARIATION OF AUTHORS CARD GAME
EASY
4 - 6 PLAYERS

OBJECT

Collect the most groups of invasive species.

WILDCARDS

4 each of 13 different **Alien Invaders** cards

DEAL

Shuffle and cut the cards. Deal them one at a time, facedown, until they are gone. Don't worry if some players get an extra card.

PLAY

Everyone: Arrange the cards in your hand so that all the matching cards are together.

Player to the Dealer's Left: You start by asking another player for a card that you need to make a set of four. You can only ask for a card if you have at least one card in your hand that matches it. For example, you say, "Paul, do you have a gypsy moth?" If Paul has one, he must give it to you, and you get to ask Paul or another player for another card. If he doesn't have one, your turn is over, and the play passes to the person on your left.

Everyone: When you get a group of four matching cards, name the plant or animal in the group, show them to the other players, and share one interesting thing from the backs of the cards. Then, put them facedown on the table. When all the cards are gone, the winner is the person with the most groups.

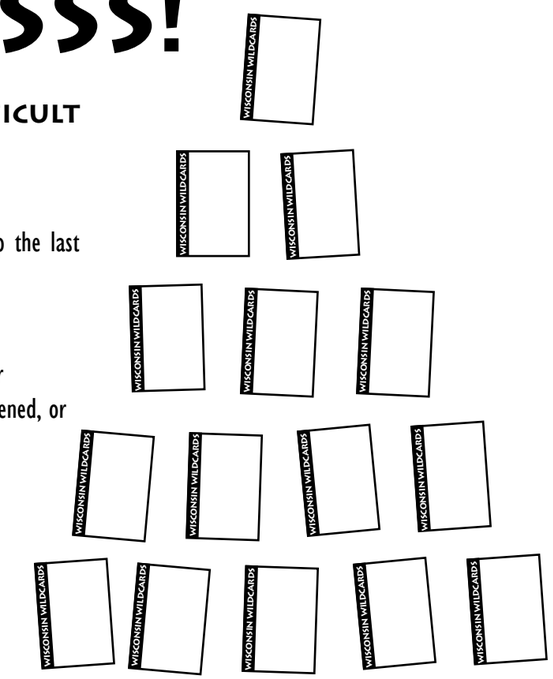
CHALLENGE

To make the game more challenging, put together groups of related cards instead of identical cards. For example, goby, alewife, smelt, and ruffe could be a group of alien fish. If you play this way, look the groups over together before the game begins.

During the game, players would need to ask for a specific card in a group. For example, in order for George to ask Francis for a ruffe, he must have the goby, alewife, and/or smelt in his hand.

LASSST ONE LOSESSS!

STRATEGY GAME
MODERATE TO DIFFICULT
2 PLAYERS



OBJECT

Make the other person pick up the last card.

WILDCARDS

15 snakes and turtles or other **Wildcards** showing rare, threatened, or endangered species

DEAL

Lay the cards faceup in a pyramid as shown.

PLAY

Youngest Player: You go first. You can take cards out of only one horizontal row. You can take as many cards from that row as you want.

Other Player: Now it is your turn to remove any number of cards from any one row!

Continue taking turns removing cards until there is only one card left. The person who has to pick up the last card gets one point. If the last card is a threatened or endangered species, the person gets two points. The winner is the person with the fewest number of points when you are done playing.

STRATEGY

There are numerous strategies for winning this game. In fact, if you figure out the strategies, you are difficult to beat! Here's a clue to one of them: 1-2-3!

WANT TO DO MORE?

This strategy game is connected to an activity! See Lassst One Losesss on page 39 to learn more about reptiles!

GO WILD WITH WISCONSIN WILDCARDS!

LEAPFROG!

STRATEGY GAME
CHALLENGING
1 PLAYER

OBJECT

Remove all the cards by jumping one card over the other. When done, the Blanchard's Cricket Frog card should be back in its original position.

WILDCARDS

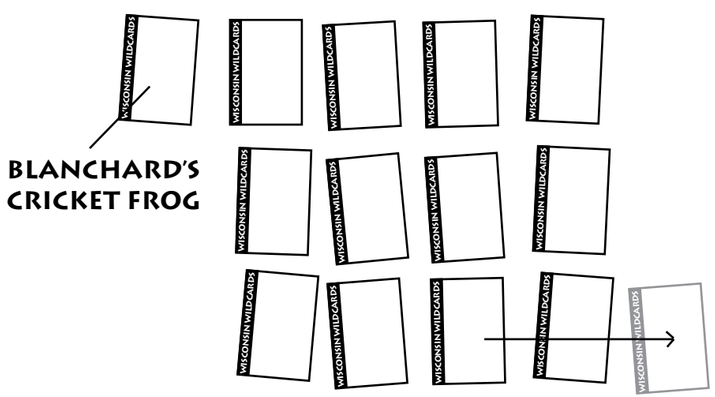
13 cards (Use Blanchard's Cricket Frog and 12 **Aquatic Invertebrates**. The frog wouldn't eat all those invertebrates, but at least they live in the same places!) You could also play this game with 12 fish cards and the Great Blue Heron card or other predator/prey combinations.

DEAL

Place 12 cards on the table in three rows of four cards each. Put the cricket frog at the left-hand end of the top row. See diagram.

PLAY

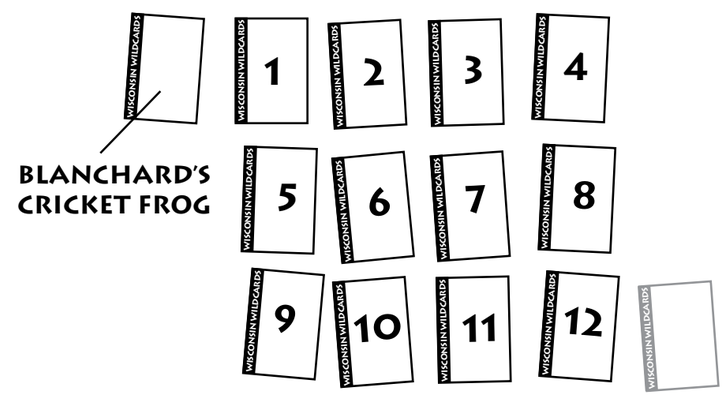
Start jumping! You are going to try to remove all the cards from the playing field, except the cricket frog, by jumping one card over the other as in checkers and removing the jumped-over cards. At the end of the game, the cricket frog should be back in its original position. The outlined card shows where you can make your first jump. This is the only place outside of the puzzle that you can move cards.



SOLUTION

Don't read this unless you have given up! If you are just ready for a hint, follow the directions for the first couple of moves and then try again on your own. Here are the moves that you must make to solve this puzzle:

- Jump 11 over 12 to the outlined card position.
- Remove 12.
- Jump 9 over 10 to 11.
- Remove 10.
- Jump 2 over 6 to 10.
- Remove 6.
- Jump 4 over 8 to 12.
- Remove 8.
- Jump the cricket frog over 1 to 2, then over 3 to 4.
- Remove 1 and 3.
- Jump 11 over 7 to 3.
- Remove 7.
- Jump the outside card over 12 to 11, then over 10 to 9, then over 5 to 1.
- Remove 12, 10, and 5.
- Jump 4 (the cricket frog) over 3 to 2, and then over 1 to its original position.
- Remove 3 and 1.
- Cool, huh?



GO WILD WITH WISCONSIN WILDCARDS!

POISON IVY

VARIATION OF OLD MAID CARD GAME
EASY & FAST
3 - 5 PLAYERS

OBJECT

Get rid of all your cards by making pairs. When the game is over, you don't want to be the one holding poison ivy!

WILDCARDS

4 each of 12 different cards
Poison Ivy card

DEAL

Shuffle, cut, and deal out all the cards, one at a time, facedown. It doesn't matter if the cards don't come out even.

PLAY

Everyone: Check to see if you have any pairs. If you do, take them out of your hand and put them face down in front of you. If you have three of the same card, you can only put down two. The other card stays in your hand for now.

Dealer: You go first by fanning your cards and offering them facedown to the player on your left.

Next Player: Pick a card from the dealer's fanned-out cards. No peeking! If you get a card that matches one in your hand, show the pair and put it down with your other pairs. If the card doesn't make a pair, you keep it in your hand. Then you fan out your cards and offer them to the player on your left.

Everyone: Around and around the table it goes! When all the cards are paired, one person will be left holding the Poison Ivy! The person with poison ivy card picks up the cards, shuffles, and deals the next game.

GO WILD WITH WISCONSIN WILDCARDS!

ROCK!

VARIATION OF SPOONS OR DONKEY BUTTONS
EASY & FAST
4 – 13 PLAYERS (5 – 6 PLAYERS IS BEST)

OBJECT

Get four of a kind in your hand, or be the first to notice when someone else gets four of a kind.

WILDCARDS AND OTHER THINGS

4 matching cards for each player
Enough rocks for each player but one

DEAL

Shuffle the cards. Deal out four cards to each player, one at a time and facedown. Put the rocks in the middle of the table.

PLAY

Everyone: Pick up your cards. Check to see if you were, by some miracle, dealt four of a kind. If nobody has four of a kind, the fun begins.

Dealer: When everyone is ready, shout "Go!"

Everyone: Put an unwanted card facedown on the table and pass it to the player on your left. Pick up the card from the player on your right. Keep passing and picking up cards as quick as you can.

Lucky Player: If you are the first player to get four of a kind, be sneaky. Continue to pass and receive cards. At the same time, reach for one of the rocks in the center of the table.

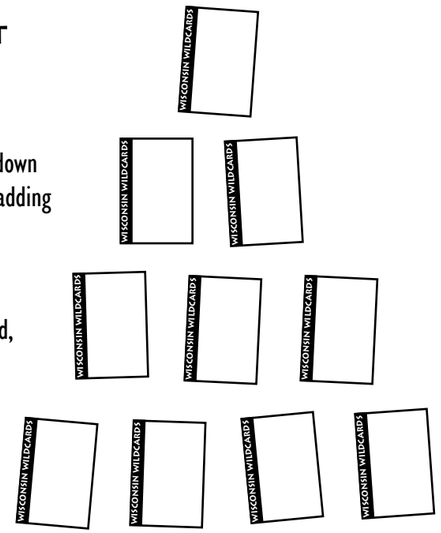
Everyone Else: As soon as you notice that someone has taken a rock from the center, grab a rock while you continue to pass and receive cards.

Last Player to Notice: You didn't get a rock, so you get an "R." Collect the cards and deal the next round. Each time you lose a round, you get another letter. This continues until someone spells R-O-C-K. The R-O-C-K loses the game; the winner is the player with the smallest number of letters.

GO WILD WITH WISCONSIN WILDCARDS!

UPSETTING THE PYRAMID

CARD PUZZLE
MODERATE TO DIFFICULT
1 - 4 PLAYERS



OBJECT

Turn an aquatic food pyramid upside down by removing three native species and adding three invasive species.

WILDCARDS

See sample list below: 1 fish-eating bird, 2 small fish, 3 aquatic carnivores, 4 aquatic herbivores, 3 aquatic invasives (Note: Substitute other cards or build a terrestrial food pyramid.)

DEAL

Working alone or in small groups,
read the information on the native **Wildcards** and build a pyramid:

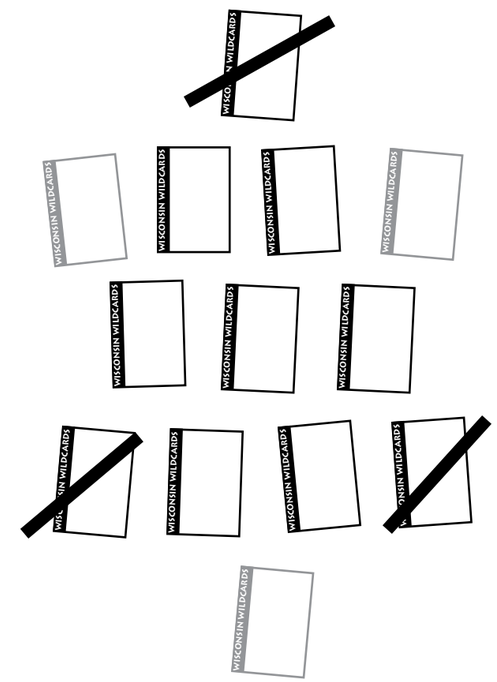
- 1st row – animal that eats fish (Common Loon)
- 2nd row – fish that eats small invertebrates (Bluegill, Yellow Perch)
- 3rd row – invertebrates that eat other invertebrates (Alderfly Larva, Dragonfly Larva, Damselfly Larva)
- 4th row – plant-eating invertebrates (Mayfly Larva, Caddisfly Larva, Stonefly Larva, Riffle Beetle)

PLAY

Now, without moving any other cards, turn the pyramid upside down by removing three native species cards and adding three invasive species cards (e.g., Zebra Mussel, Rainbow Smelt, and Rusty Crayfish). See solution on the next page.

SOLUTION

Remove the crossed-out cards. Add the shaded cards.



THINK ABOUT IT!

Check out the aquatic food pyramid now! While invasives don't completely turn food pyramids upside down, they do compete with native species for limited food, cover, and space. They often upset the whole ecosystem that they invade. Look at the backs of the **Wisconsin Wildcards: Alien Invaders** to discover some of the adaptations that allow invasive species to outcompete native species and upset aquatic ecosystems:

- Invasives are free from the predators, parasites, and diseases that control populations of native species.
- Invasives have great dispersal ability or migratory tendencies.
- Invasives have a high reproductive potential.
- Invasives mature early.
- Invasives are often able to reproduce both sexually and asexually.

WEED WATCHERS

CARD GAME
EASY & FAST
4 – 7 PLAYERS

OBJECT

Slap the matching weeds and "pull" them all out of the game.

WILDCARDS

4 each of 16 different invasive plants from **Wisconsin Wildcards: Alien Invaders**

DEAL

Shuffle the cards and deal them facedown one at a time.

PLAY

Everyone: Don't look at your cards. Hold your cards facedown in your left hand (right hand if you are left-handed).

Dealer: Call out "1 – 2 – 3 – Weed Watcher."

Everyone: As soon as the dealer says "Weed Watcher," take one card from your hand and place it faceup on the table in front of you. Look quickly around the table. If you see a card that matches the card you turned over, slap your hand on your card. If you are the first player to slap your hand, you win that round. You can collect the matching cards and any cards that might be underneath them from previous rounds when there wasn't a match. Add these cards to the bottom of the pile in your hand.

Dealer: Call out "1 – 2 – 3 – Weed Watcher" and the play continues. If there are no matches, the dealer simply calls out again. The winner is the person who collects all the cards from the other players.

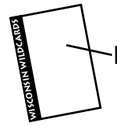
WANT TO DO MORE?

This game is connected to an activity! See Weed Watchers on page 49 to learn more about how scientists are on the watch for invasive plants in Wisconsin.

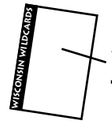
WILD LINKS!

DOMINO-BASED GAME
EASY
2 - 4 PLAYERS

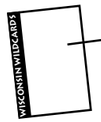
BLANCHARD'S CRICKET FROG



RACCOON



WOOD TURTLE



ORNATE BOX TURTLE

OBJECT

Be the first player to link all of your cards.

WILDCARDS

28 different native Wisconsin plants and animals

DEAL

Shuffle and cut the cards. Deal five cards to each person, one at a time and facedown. If two or three play, deal seven cards to each. Place the remaining cards facedown in the center of the table. This is the boneyard.

PLAY

Everyone: Take a good look at your cards. Note the plants, herbivores, and carnivores. What kinds of animals do you have? (e.g., fish, insects, mammals)

Player to Dealer's Left: You go first. Look at your hand and choose one card to begin the game. Lay it down in the middle of the table or floor.

Next Player in Clockwise Rotation: Look at the card the first player placed on the table. You must find a card in your hand that you can link to this card. If the first card played was a raccoon, here are some of the possible cards you could play and the related links:

- Blanchard's cricket frog - because raccoons eat frogs
- Timber wolf - because wolves eat raccoons
- Bobcat - because raccoons and bobcats are both mammals
- White ash – because raccoons live in forested areas
- Wood turtle – because raccoons and wood turtles are both omnivores

When you find a link and play a card, you must announce the link. Other players can judge if your link is acceptable! If you can't find a card in your hand that links to the card on the table, you must draw a card from the top of the boneyard.

Everyone: Play continues clockwise around the table with each person trying to place a card. Like dominoes, cards can be played in both directions. When a card is played, the player must announce the link. Other players can challenge a link if they think it is too far-fetched! The first person to get rid of all his or her cards is the winner!

WANT TO DO MORE?

This game is connected to an activity! See Wild Links on page 31 to learn more about how plants and animals are categorized.

WILD MEMORY

CARD GAME
EASY, IF YOU PAY ATTENTION
2 – 5 PLAYERS (MORE IS POSSIBLE, IF EVERYONE IS PATIENT)

OBJECT

Collect the most pairs.

WILDCARDS AND OTHER THINGS

26 pairs of cards (Use fewer sets with younger kids.)
52 index cards and paper clips
large, flat area

DEAL

Paper clip an index card to the back of each card to hide the names. Shuffle the cards. Lay them facedown in a large rectangle. Make sure the cards do not touch. Some people like to just spread them randomly around the table. Just make sure they don't overlap.

PLAY

Youngest Player: You go first. Turn over any two cards so that everyone can see them. If the cards match, pick them up, keep them, and turn over two more cards. Your turn lasts as long as you continue to make matches. If the cards don't match, turn them back over in the exact spot where they were. Your turn is over.

Everyone: Continue playing to the left around the circle until all the cards are matched. The winner is the player with the biggest pile of pairs at the end.

WILDCARDS DECKS

These lists include all cards printed as of 2012. Be aware that some of the cards may be out of print or discontinued. Activities and games in this guide use many different groupings of cards. The following lists will help you find the cards you need.

NATIVES SET

MAMMALS

American Bison (LM)
Beaver (FB)
Black Bear (LM)
Bobcat (FB)
Canada Lynx (RM)
Coyote (FB)
Eastern Cottontail (RH)
Elk (LM)
Fisher (FB)
Gray Fox (FB)
Gray Squirrel (TS)
Gray Wolf (RM)
Moose (LM)
Muskrat (FB)
Opossum (FB)
Raccoon (FB)
Red Fox (FB)
Snowshoe Hare (RH)
Striped Skunk (FB)
White-tailed Deer (LM)

BIRDS

American Woodcock (UGB)
Blue-winged Teal (WF)
Canada Goose (WF)
Canvasback (WF)
Common Loon (NS)
Great Blue Heron (WB)
Great Horned Owl (R)
Greater Prairie-chicken (TS)
Mallard (WF)
Northern Bobwhite (UGB)
Peregrine Falcon (RS)
Redhead (WF)
Red-tailed Hawk (R)
Ruffed Grouse (UGB)
Sandhill Crane (WB)
Sharp-tailed Grouse (UGB)
Short-eared Owl (RS)
Trumpeter Swan (RS)
Whooping Crane (ES)
Wild Turkey - Tom (UGB)
Wild Turkey - Hen (UGB)
Wood Duck (WF)

REPTILES & AMPHIBIANS

Black Rat Snake (NR)
Bullsnake (NR)
Butler's Gartersnake (NR)
Eastern Hognose Snake (NR)
Eastern Massasauga (NR)
Eastern Milk Snake (NR)
Eastern Racer (NR)
Northern Ribbon Snake (NR)
Queen Snake (NR)
Timber Rattlesnake (NR)
Western Fox Snake (NR)
Western Ribbon Snake (NR)
W. Slender Glass Lizard (NR)
Blanding's Turtle (NR)
Ornate Box Turtle (NR)
Wood Turtle (NR)
Blanchard's Cricket Frog (NA)

AQUATIC INVERTEBRATES

Alderfly Larva (NS)
Black Fly Larva (NS)
Caddisfly Larva (NS)
Crane Fly Larva (NS)
Damselfly Larva (NS)
Dobsonfly Larva (NS)
Dragonfly Larva (NS)
Leech (NS)
Mayfly Larva (NS)
Midge Larva (NS)
Planarian/Flatworm (NS)
Riffle Beetle (NS)
Sideswimmer/Scud (NS)
Snipe Fly Larva (NS)
Sowbug (NS)
Stonefly Larva (NS)
Tubifex Worm (NS)
Water Penny Larva (NS)
Whirligig Beetle (NS)

FISH

American Brook Lamprey (MC)
Black Bullhead (MC)
Black Crappie (MC)
Bluegill (MC)
Bowfin (MC)
Brook Trout (MC)
Burbot (MC)
Channel Catfish/
Flathead Catfish (MC)
Common Shiner (MC)
Freshwater Drum (MC)
Grass Pickerel (MC)
Green Sunfish (MC)
Iowa Darter (MC)
Lake Sturgeon (MC)
Lake Trout (MC)
Lake Whitefish (MC)
Largemouth Bass (MC)
Longnose Gar (MC)
Mottled Sculpin (MC)Muskellunge (MC)
Northern Pike (MC)
Paddlefish (MC)
Pumpkinseed (MC)
Quillback (MC)
Rock Bass (MC)
Sauger (MC)
Shorthead Redhorse (MC)
Shortnose Gar (MC)
Shovelnose Sturgeon (MC)
Smallmouth Bass (MC)
Smallmouth Buffalo (MC)
Walleye (MC)
White Crappie (MC)
White Bass (MC)
White Sucker (MC)
Yellow Bullhead/
Brown Bullhead (MC)
Yellow Perch (MC)

INSECTS

Eastern Tent Caterpillar (NP)
Forest Tent Caterpillar (NP)
Friendly Fly (NP)
Giant Silkmoth (NS)
Giant Silkmoth Caterpillar (NS)
Karner Blue Butterfly (NS)
Web Worm (NP)

PLANTS

Black Ash (NT)
Green Ash (NT)
White Ash (NT)
Dune Thistle (RS)
Dwarf Lake Iris (RS)
Poison Ivy (AM!)
Prairie Bush Clover (RS)
Wild Lupine

LEGEND

Categories are indicated on the fronts of the cards.
AM! = Avoid Me!
ES = Endangered Species
FB = Furbearers
LM = Large Mammals
MC = Match Your Catch!
NA = Native Amphibians
NP = Native Pests
NR = Native Reptiles
NS = Native Species
NT = Native Trees
R = Raptors
RH = Rabbits & Hares
RM = Rare Mammals
RS = Rare Species
TS = Tree Squirrels or Threatened Species
UGB = Upland Game Birds
WB = Wading Birds
WF = Waterfowl

ALIEN INVADERS SET

Alewife
Asian Lady Beetle
Asian Longhorned Beetle
Autumn Olive
Black Swallow-wort
Cat-tails
Common & Glossy Buckthorn
Common Reed
Crown Vetch
Curly-leaf Pondweed
Dame's Rocket
Earthworms
Emerald Ash Borer
Eurasian Water-milfoil
Exotic Bush Honeysuckles
Garlic Mustard
Gypsy Moth Adult
Gypsy Moth Egg
Gypsy Moth Larva
Hemlock Woolly Adelgid
Japanese Hedgeparsley
Japanese Hops
Japanese Knotweed
Japanese Stilt Grass
Leafy Spurge
Moving Firewood
Multiflora Rose
Oriental Bittersweet
Poison Ivy (native)
Purple Loosestrife
Rainbow Smelt
Reed Canary Grass
Round Goby
Ruffe
Rusty Crayfish
Sea Lamprey
Spiny & Fishhook Waterfleas
Spotted Knapweed
Three-spine Stickleback
Wild Parsnip
White Perch
Zebra Mussel

ALIEN INVADERS: AQUATICS SUBSET

Alewife
Cat-tails
Common Reed
Curly-leaf Pondweed
Eurasian Water-milfoil
Purple Loosestrife
Rainbow Smelt
Reed Canary Grass
Round Goby
Ruffe
Rusty Crayfish
Sea Lamprey
Spiny & Fishhook Waterfleas
Three-spine Stickleback
White Perch
Zebra Mussel

ALIEN INVADERS: PLANTS SUBSET

Autumn Olive
Cat-tails
Common & Glossy Buckthorn
Black Swallow-wort
Common Reed
Crown Vetch
Curly-leaf Pondweed
Dame's Rocket
Eurasian Watermilfoil
Garlic Mustard
Exotic Bush Honeysuckles
Japanese Hedgeparsley
Japanese Hops
Japanese Knotweed
Japanese Stilt Grass
Leafy Spurge
Multiflora Rose
Oriental Bittersweet
Poison Ivy (native)
Purple Loosestrife
Reed Canary Grass
Spotted Knapweed
Wild Parsnip

MATCH YOUR CATCH! (NON-NATIVE FISH)

Brown Trout
Chinook Salmon
Coho Salmon
Common Carp
Rainbow Smelt
Rainbow Trout
Yellow Bass

SPECIAL PLACES SET

Barrier Beach Trail
Buckhorn State Park
Elroy-Sparta State Trail
Ice Age National Scenic Trail
Kettle Moraine State Forest - Pike Lake Unit
Kohler-Andrae Dunes Cordwalk
Niagara Escarpment
North Country Trail
Red Cedar State Trail
Rib Mountain State Park
Roche-a-Cri State Park
State Wildlife Areas

STATE FORESTS SET

Black River State Forest
Brule River State Forest
Flambeau River State Forest
Governor Knowles State Forest
Havenwoods State Forest
Northern Highland - American Legion State Forest
Northern Unit of Kettle Moraine State Forest
Peshtigo State Forest
Point Beach State Forest
Southern Unit of Kettle Moraine State Forest

WILDFIRE PREVENTORS SET

Campfires
Debris Burning
Fire Department Truck
Firefighting Equipment
Forester and Forester/Ranger
Forestry Technician
Marsh Rig - Muskeg Low Ground Unit
Prescribed Fire
Single Engine Air Tanker
Smokey Bear
Tractor - Plow Unit
Type 4 (3-Ton Pumper/Tanker) Engine
Type 7X (4x4 Initital Attack) Engine
Wildland Urban Interface

EXTRA CARDS - NOT PLANTS OR ANIMALS

Best Management Practices (BMPs) for Trapping (Furbearers)
Furbearer Trapping -- Yesterday and Today (Furbearers)
Trapper Education (Furbearers)
Learn About Birds
Black Spot (Fish Health)
Viral Hemorrhagic Septicemia (Fish Health)
Boys camping and fishing for trout (card games)
Fish Inside…and Out!
Knots (fishing knots)
Weighing Fish with a Ruler
Vintage photo of women flyfishing (discontinued)

ACTIVITIES BY WILDCARDS NEEDED

The Educators' Kit contains one complete deck of all currently available Wildcards plus three sets of the native plants, native animals, and Alien Invaders. This is enough cards to do all the activities in this guide; however, there are a few activities that kids will have to take turns doing. See the second column of the chart.

ACTIVITIES	Number of kids who can play game simultaneously	Complete Deck	Natives	Wisconsin State Forests & Special Places	Alien Invaders
CELEBRATE THE WILD IN WISCONSIN					
Who Am I?	at least 60		1 card per kid		
Favorite Wisconsin Wild Things	at least 60		21 cards per 3 - 4 kids		
Rare Sketches	at least 60		Select cards (see activity)		
5-Minute Ugly	at least 60		Select cards (see activity)		Select cards (see activity)
Nature in Jeopardy?	at least 60		2 decks per 30 kids		
EXPLORE WILD CONNECTIONS					
Wild Links	at least 40		28 cards per 3 - 4 kids		
Habitat Toss	30		8 - 10 cards per kid		
Delicate Balance	38		5 cards per 2 kids	1 card per 2 kids	
Lassst One Losesss	16		1 set of reptiles per 2 - 4 kids		
Wild Harvest	at least 60		Select cards (see activity)		
TRACK DOWN ALIEN INVADERS					
Imitating Invaders	at least 60				1 card per kid
Drop in the Bucket	30				8 Alien Invaders: Aquatics cards per 3 - 4 kids
Weed Watchers	7				4 sets of Alien Invaders: Plants per 4 - 7 kids
Control Magic?	36				1 card per kid
DIVE INTO WISCONSIN WATERS					
Web of Life	60		Select cards (see activity)		Select cards (see activity)
Go Fish!	10		4 each of 13 different fish per 2 - 5 kids		
Meet a Fish	at least 60		Select fish cards (see activity)		Select fish cards (see activity)
Biotic Index	30		9 Aquatic Invertebrates per 3 - 4 kids		
TAKE A WALK ON THE WILD SIDE					
I Went Hiking At . . .	at least 60		8 cards per 10 kids	2 cards per 10 kids	
Wisconsin Wildlife Watching	at least 60		Select cards (see activity)		
It's Mine!	at least 30	1 deck	3 sets		3 sets
Check Off!	28		12 cards from four of the native categories per 4 - 7 kids		
Wild Callings	at least 60		Select cards (see activity)		Select cards (see activity)

ACTIVITIES BY GRADE

Activities	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
CELEBRATE THE WILD IN WISCONSIN						
Who Am I?	●	●	●	●	●	●
Favorite Wisconsin Wild Things	●	●	●	●		
Rare Sketches		●	●	●	●	●
5-Minute Ugly	●	●	●	●	●	●
Nature in Jeopardy?		●	●	●	●	●
EXPLORE WILD CONNECTIONS						
Wild Links	●	●	●			
Habitat Toss	●	●				
Delicate Balance			●	●	●	●
Lassst One Losesss			●	●	●	●
Wild Harvest		●	●			
TRACK DOWN ALIEN INVADERS						
Imitating Invaders	●	●	●	●		
Drop in the Bucket			●	●	●	●
Weed Watchers			●	●	●	●
Control Magic?		●	●	●	●	●
DIVE INTO WISCONSIN WATERS						
Web of Life			●	●	●	●
Go Fish!	●	●	●	●		
Meet a Fish		●	●	●	●	●
Biotic Index			●	●	●	●
TAKE A WALK ON THE WILD SIDE						
I Went Hiking At . . .		●	●	●		
Wisconsin Wildlife Watching	●	●	●	●		
It's Mine!	●	●	●			
Check Off!			●	●	●	●
Wild Callings			●	●	●	●

GO WILD WITH WISCONSIN WILDCARDS!

ACTIVITIES CORRELATED WITH WISCONSIN'S MODEL ACADEMIC STANDARDS

ENGLISH LANGUAGE ARTS

B.4.1 Create or produce writing to communicate with different audiences for a variety of purposes
Rare Sketches (page 15)
It's Mine! (page 73)

B.8.1 Create or produce writing to communicate with different audiences for a variety of purposes
Rare Sketches (page 15)
Weed Watchers (page 49)
It's Mine! (page 73)

E.4.3 Create media products appropriate to audience and purpose
Habitat Toss (page 33)
Control Magic? (page 51)
I Went Hiking at . . . (page 69)

E.8.3 Create media products appropriate to audience and purpose
Control Magic? (page 51)
I Went Hiking at . . . (page 69)

MATHEMATICS

B.8.7 In problem-solving situations, select and use appropriate computational procedures with rational numbers
Biotic Index (page 63)

ENVIRONMENTAL EDUCATION

B.4.5 Describe natural and human-built ecosystems in Wisconsin
Habitat Toss (page 33)

B.4.6 Cite examples of how different organisms adapt to their habitat
Imitating Invaders (page 43)
Go Fish! (page 57)

B.4.10 Describe how they use natural resources in their daily lives
Wild Harvest (page 41)

B.8.3 Explain the importance of biodiversity
Lassst One Losesss (page 39)

B.8.5 Give examples of human impact on various ecosystems
Drop in the Bucket (page 45)
Weed Watchers (page 49)

B.8.6 Describe major ecosystems of Wisconsin
Delicate Balance (page 37)

B.8.8 Explain interactions among organisms or populations of organisms
Wild Links (page 31)
Web of Life (page 53)

B.8.10 Explain and cite examples of how humans shape the environment
Drop in the Bucket (page 45)

B.8.14 Identify the natural resources that are found in Wisconsin and those that are imported
Wisconsin Wildlife Watching (page 71)

B.8.15 Analyze how people impact their environment through resource use
Delicate Balance (page 37)

B.8.18 Identify major air, water, or land pollutants and their sources
Drop in the Bucket (page 45)
Weed Watchers (page 49)

B.8.22 Identify careers related to natural resources and environmental concerns
Wild Callings (page 81)

D.4.3 Identify two or more ways to take positive environmental action; e.g., posters, letters, and speeches
Control Magic? (page 51)

SCIENCE

B.4.1 Use encyclopedias, source books, texts, computers, teachers, parents, other adults, journals, popular press, and various other sources, to help answer science-related questions and plan investigations
Nature in Jeopardy? (page 23)
Meet the Fish! (page 59)

B.8.5 Explain ways in which science knowledge is shared, checked, and extended, and show how these processes change over time
Nature in Jeopardy? (page 23)

F.4.1 Discover how each organism meets its basic needs for water, nutrients, protection, and energy in order to survive
Wild Links (page 31)

F.8.2 Show how organisms have adapted structures to match their functions, providing means of encouraging individual and group survival within specific environments
Imitating Invaders (page 43)
Go Fish! (page 57)

F.8.8 Show through investigations how organisms both depend on and contribute to the balance or imbalance of populations and/or ecosystems, which in turn contribute to the total system of life on the planet
Biotic Index (page 63)

F.8.9 Explain how some of the changes on the earth are contributing to changes in the balance of life and affecting the survival or population growth of certain species
Lassst One Losesss (page 39)
Wild Harvest (page 41)
Weed Watchers (page 49)
Web of Life (page 53)
Biotic Index (page 63)

F.8.10 Project how current trends in human resource use and population growth will influence the natural environment, and how current policies affect those trends
Delicate Balance (page 37)

G.8.1 Identify and investigate the skills people need for a career in science or technology and identify the academic courses that a person pursuing such a career would need
Wild Callings (page 81)

SOCIAL STUDIES

A.4.5 Use atlases, databases, grid systems, charts, graphs, and maps to gather information about the local community, Wisconsin, the United States, and the world
Nature in Jeopardy? (page 23)

A.8.1 Use a variety of geographic representations, such as political, physical, and topographic maps, a globe, aerial photographs, and satellite images, to gather and compare information about a place
Delicate Balance (page 37)
I Went Hiking At . . . (page 69)

A.8.7 Describe the movement of people, ideas, diseases, and products throughout the world
Drop in the Bucket (page 45)
Weed Watchers (page 49)

A.8.11 Give examples of the causes and consequences of current global issues, such as the expansion of global markets, the urbanization of the developing world, the consumption of natural resources, and the extinction of species, and suggest possible responses by various individuals, groups, and nations
Drop in the Bucket (page 45)
Weed Watchers (page 49)

D.8.11 Describe how personal decisions can have a global impact on issues such as trade agreements, recycling, and conserving the environment
Drop in the Bucket (page 45)

ACTIVITIES CONNECTED TO SCOUT BADGES

Activites from this guide and/or the information on Wisconsin Wildcards can help scouts meet some of the requirements for badges. Wisconsin Wildcards are also fun to take on camping trips!

IN GENERAL

Service Projects ▶ See Weed Watchers and Control Magic? for service project ideas related to stopping the spread of invasive species.
Career Exploration ▶ See the activity Wild Callings to introduce kids to a variety of outdoor careers.

WEBELOS

Naturalist 6 ▶ 5-Minute Ugly
Naturalist 8 ▶ Web of Life
Naturalist 8 ▶ Drop in the Bucket

BOY SCOUTS OF AMERICA

Environmental Science 3.e.1 ▶ Rare Sketches, Nature in Jeopardy?
Environmental Science 6 ▶ Wild Callings
Fish and Wildlife Management 2 ▶ Nature in Jeopardy, Lassst One Losesss, Drop in the Bucket, Weed Watchers, Biotic Index
Fish and Wildlife Management 6.a and 6.b ▶ Checkoff!
Fish and Wildlife Management 8 ▶ Wild Callings
Insect Study 10 ▶ Web of Life
Insect Study 11 ▶ Wild Callings
Nature 3 ▶ Web of Life
Reptile and Amphibian Study 1, 2, 4, 9.b ▶ Lassst One Losesss

JUNIOR GIRL SCOUTS

Camper ▶ Rare Sketches, I Went Hiking at . . .
Animal Habitats ▶ Favorite Wild Thing, Who Am I?, Habitat Toss, Wisconsin Wildlife Watching

ACTIVITIES CONNECTED TO PROJECT WILD AND PROJECT LEARNING TREE

You can use Wisconsin Wildcards to enhance activities in Project WILD and PLT. You can also extend the activities in this guide with a WILD or PLT activity. Visit the Department of Natural Resources website for information on how to obtain copies of these guides through workshops.
WILD <http://dnr.wi.gov/education/educatorresources/wild.html>
PLT <http://dnr.wi.gov/education/educatorresources/plt.html>

CONNECT ACTIVITIES IN THIS GUIDE TO

PROJECT WILD

5-minute Ugly ▶ First Impressions (K-4)
Drop in the Bucket ▶ Ethi-Reasoning (5-8), Planting Animals (5-8)
Favorite Wisconsin Wild Things ▶ Interview a Spider (5-8)
Habitat Toss ▶ Habitat Rummy (5-8), Graphananimal (K-4), Who Fits Here? (5-8)
Imitating Invaders ▶ Adaptation Artistry (5-8), Animal Charades (K-4)
It's Mine! ▶ Enviro-Ethics (5-8)
Nature in Jeopardy? ▶ Environmental Barometer (K-4), Bird Song Survey (9-12), Birds of Prey (9-12)
Rare Sketches ▶ Drawing on Nature (5-8), Here Today, Gone Tomorrow (5-8)
Weed Watchers ▶ World Travelers (5-8)
Wild Callings ▶ Wildwork (5-8)
Wild Harvest ▶ Arctic Survival (9-12), Changing Attitudes (5-8), Pro and Con: Consumptive and Nonconsumptive Uses of Wildlife (5-8)

AQUATIC PROJECT WILD

Biotic Index ▶ Water Canaries (5-8)
Go Fish! ▶ Fashion a Fish (K-4)
Meet a Fish ▶ Fishy Who's Who (5-8)
Weed Watchers ▶ Aquatic Roots (5-8)
Wild Callings ▶ Living Research: Aquatic Heroes and Heroines (9-12)

PROJECT LEARNING TREE

Control Magic ▶ Improve Your Place (5-8)
Drop in the Bucket ▶ Values on the Line (6-8)
I Went Hiking At . . . ▶ I'd Like to Visit a Place Where. . . (4-8)
It's Mine! ▶ Earth Manners
Rare Sketches ▶ Life on the Edge (4-8)
Web of Life ▶ Web of Life (4-8)
Weed Watchers ▶ Improve Your Place (5-8)
Wild Callings ▶ Who Works in this Forest? (3-6)
Wild Harvest ▶ A Look at Lifestyles (5-8), The Native Way (4-8)

USE WILDCARDS TO ENHANCE

PROJECT WILD ACTIVITIES

Adaptation Artistry (5-8)
First Impressions (K-4)
Graphananimal (K-4)
Here Today, Gone Tomorrow (5-8)
Museum Search for Wildlife (5-8)
Seeing is Believing! (K-4)
Who Fits Here? (5-8)
World Travelers (5-8)

AQUATIC PROJECT WILD ACTIVITIES

Aquatic Roots (5-8)
Are You Me? (K-4)
Blue Ribbon Niche (5-8)
Fashion a Fish (K-4)
The Glass Menagerie (9-12)
Mermaids and Manatees (5-8)
Where Have All the Salmon Gone? (5-8)

PROJECT LEARNING TREE ACTIVITIES

Charting Diversity (4-8)
Environmental Exchange Box (K-8)
A Forest of Many Uses (1-8)
Habitat Pen Pals (3-6)
How Big is Your Tree? (3-8)
Name That Tree (2-8)
Picture This! (Pre K-3)
Web of Life (4-8)

INFORMAL WAYS WDNR STAFF AND PARTNERS CAN USE WILDCARDS

Don't forget to use Wildcards every day in simple ways. They can be great promotional pieces, prizes, and freebies. Here are some ideas to get you thinking.

HAND THEM OUT AT PROGRAMS

Familiarize yourself with the cards so that you can pull out specific cards to use with programs you offer. Hand out snake cards after herp programs, give kids the poison ivy cards before cross-country orienteering hikes, or share invasive plant cards during weed pulls to reinforce identification of the target plants.

DISPLAY THEM IN HIGH TRAFFIC AREAS

Use card racks, business card holders, or other display boards to showcase Wildcards that you have on hand. Encourage people to take cards connected to a rotating seasonal or interpretive theme.

USE THEM TO INCREASE VISITOR CONTACT

Give each staff person a different Wildcard. Encourage kids to collect them by finding staff and asking for cards. Rangers find this a positive way to meet and educate visitors while engaging them in conversations.

GIVE THEM AS REWARDS

Wildcards are inexpensive, yet popular, prizes for scavenger hunts and games. Be sure cards awarded as prizes are not on a display rack for anyone to take. Make them rare and desirable! Give them to scouts or volunteers after workdays.

HAND THEM OUT AS PROMOTIONAL PIECES

Hand out Wildcards along the parade route or at community events. Use them anytime you need a small teaser to promote your property or program.

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