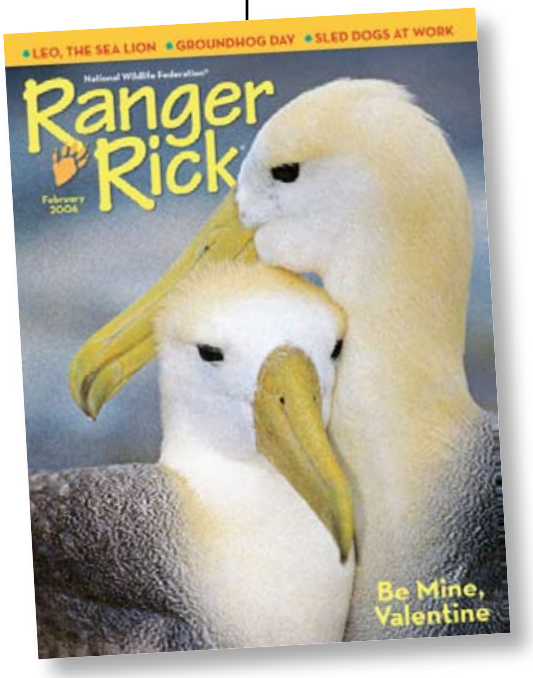
FEBRUARY 2006

National Wildlife Federation®
Ranger Rick®

EDUCATOR'S GUIDE



This guide is designed to complement the February 2006 issue of National Wildlife Federation's *Ranger Rick*® magazine.

NATIONAL WILDLIFE FEDERATION®
www.nwf.org®

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Introduction

Welcome to the *Ranger Rick Educator's Guide!*

This guide provides you with educational activities to bring **National Wildlife Federation's** *Ranger Rick*® magazine alive in the classroom and beyond. Using *Ranger Rick* feature articles as an entry point, this guide engages students ages 7-12 in exploring the natural world to build literacy, critical and creative thinking skills, and understanding across the disciplines. Activities are correlated with the National Science Education Standards and are designed to assist you in meeting required curriculum objectives.

Can we have class outside today?

Find out how you can say "Yes!" at **www.nwf.org/backyardwildlifehabitat**. The outdoor environment offers excellent opportunities for active, hands-on, interdisciplinary learning. You can enhance the learning experience by creating your own habitat site. Revitalize an entire schoolyard, a garden, or even a rooftop, windowsill, or balcony by creating an outdoor classroom and sanctuary for birds, butterflies, and other wildlife.

How To Use This Guide

Each section of the guide is matched with a specific *Ranger Rick* feature. After you read through the magazine, choose the stories and activities that complement your curriculum and that will interest your students. Sections include:

- ***Learning Links.*** A summary of concepts presented in the article.
- ***Discussion Questions and Writing Prompts.*** Entry points to engage students in discussion or writing to develop literacy and thinking skills.
- ***Resources.*** Web sites and books where you can find further information.
- ***Activity Ideas.*** Quick investigations and extended projects to complement article topics.
- ***Student Pages.*** Ready-to-copy activity sheets for students.

We have also provided a ***Family Fun*** activities page for you to copy and send home with students.

Little Leo's Great Adventure

pages 4-9

Learning Links:

The sea lion pup in this story faces many dangers, but his mother takes good care of him. Like many mammals, sea lions put a lot of effort into helping their babies grow up safely.

DISCUSSION QUESTIONS & WRITING PROMPTS

Pre-Reading Questions:

- What do parents and other grownups do to take care of their children?
- Has a grownup ever rescued you from a scary situation? Before and after you were rescued, how did you feel?

Comprehension Check:

- Where do sea lions like Leo and his mother live?
- How does a mother sea lion recognize her baby?
- How do the tides affect the sea lions in this story?
- Why did Leo run into trouble when he tried to follow Mom?
- How did Mom rescue him?

Critical and Creative Thinking Connections:

- Compare and contrast the way a sea lion mother takes care of her pup with the way other animals care for their young.
- The photographs are an important part of this story. Could you tell what was happening if you just looked at the pictures? What about if you just read the words? How do the pictures and words work together to tell the whole story?
- When Leo slipped, what do you think might have happened if his mom wasn't watching?
- Why do you think sea lions gather in big groups to have their pups?

RESOURCES

Sea Lion by Caroline Arnold (Harper Collins, 1994). Pumpkin and Piper, two rescued sea lions at California's Marine Mammal Center, provide a focal point for this lively book about the lives of sea lions.

www.seaworld.org/just-for-teachers/guides/pinnipeds Sea World's compilation, especially for teachers, of information about sea lions and their relatives.

www.sandiegozoo.org/animalbytes/t-sea_lion.html Sea lion facts and photos from the San Diego Zoo.

ACTIVITY IDEAS

Whose View?

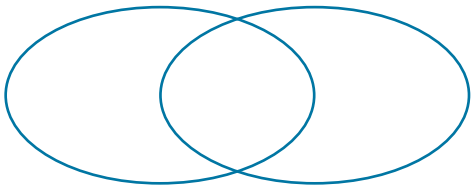
TIME:
30 Minutes
MATERIALS:
Paper
Pencils

After students read "Little Leo's Great Adventure," discuss how the story is written from an observer's point of view—as if someone who watched the events unfold is telling what happened. Then have students write a version of the baby sea lion's rescue from Leo's own perspective. Using the photos as prompts, they can write a few lines of text for each scene. For instance, "I tried to follow Mom, but I slipped on the wet rocks and slid right into the water!" For variety, some students could write from other perspectives, such as that of Leo's mother or a predator waiting in the water. Ask several students to read their stories aloud. Then discuss how perspective influences the way you experience a story. For a more extended activity, have students write scripts for plays from various perspectives and act them out. They could also read more about the lives of sea lions and then write additional chapters in Leo's life story using the perspective of their choice.

Pinniped Particulars

TIME:
30 Minutes
MATERIALS:
Paper
Pencils
Books/Internet for researching seals and sea lions

Sea lions, seals, and walruses are all *pinnipeds*, a name that means "fin-footed." Sea lions and seals especially have many things in common, but are distinguished by a few important differences. Ask students to find out how a sea lion is similar to and different from a seal, and then organize this information on a Venn diagram. They should draw two partially overlapping circles and label one "Sea Lions" and the other "Seals." Characteristics that the two animals share are written in the space where the circles overlap, while distinct characteristics go in the other part of the circles. See the following Web sites for facts about the two animals:
www.seaworld.org/just-for-teachers/guides/pinnipeds/what-are-seals-sea-lions-&-walruses.htm and
www.sandiegozoo.org/animalbytes/t-sea_lion.html.



Time and Tide

TIME:
30 minutes
MATERIALS:
Books/Internet to research tides
Small ball (Moon)
Medium ball (Earth)
Large ball (Sun)
Graph paper

Tides play an important role in the lives of many coastal animals. Sea lions such as Leo and his mom move from place to place throughout the day as the tide changes. Investigate with students how the gravitational pull of the moon causes the Earth's tides. For a good explanation of the process, see http://oceanlink.island.net/oinfo/tides/tides.html. Have three students model the process by holding balls to represent the Sun, Moon, and Earth. For a given point on the "Earth" ball, call out when low and high tides occur as students move the balls in their orbits. If you live in a coastal area, have students graph the high and low tides for one month. Look up local tide charts at http://co-ops.nos.noaa.gov/tide_pred.html. Students could also add the moon phases to their graphs. Do you see a pattern between the phases and the tidal range? You should find that tides are strongest at the full moon and new moon, and weakest at the first and last quarter.

Groundhogs: The Truth Comes Out

pages 17-20

2

Learning Links:

Groundhogs get a lot of attention on February 2, but all that press sometimes muddles the facts. This story celebrates the truth about what groundhogs do all year round.

DISCUSSION QUESTIONS & WRITING PROMPTS

Pre-Reading Questions:

- Who is Punxsutawney Phil?
- If a groundhog sees its shadow on February 2, what is supposed to happen?

Comprehension Check:

- Where are you most likely to find a groundhog on February 2?
- What is a groundhog really looking for when it comes out of its burrow?
- How does a groundhog prepare for winter?
- What happens to a hibernating groundhog's body?
- What other animals might use a groundhog's burrow?
- What's another name for a groundhog? How did it get that name?

Critical and Creative Thinking Connections:

- Why do groundhogs hibernate?
- What would be the consequences of a groundhog not finding very much to eat one summer?
- Where do you think the name *groundhog* comes from? What about *whistle-pig*, another name groundhogs are sometimes called?
- What other animals would be affected if groundhogs disappeared from a place? What do you think might happen to these animals?

RESOURCES

How Groundhog's Garden Grew by Lynne Cherry (Blue Sky Press, 2003). Little Groundhog loves to eat vegetables from Squirrel's garden, but he's happy to learn how to plant his own garden when Squirrel decides to teach him.

www.groundhog.org Everything you ever wanted to know about Groundhog Day! This is the official site of the Punxsutawney Groundhog Club and includes a history of the celebration, past predictions, and other fun facts.

ACTIVITY IDEAS

True or False?

In "Groundhogs: The Truth Comes Out," students learn the real story about groundhogs. For each of the myths or false statements on the **Groundhogs student page**, have students fill in the real facts from the *Ranger Rick* article. Model how to write a complete response that includes details from the article. Discuss students' answers when they finish.

TIME:
30 Minutes
MATERIALS:
Groundhogs student page

Please Sign the Guestbook

Have students use the information in the story to write entries in a groundhog's "guestbook" for each of the animals that uses the groundhog's burrow throughout the year. For instance, "Dear Ms. Groundhog, Thanks for your hospitality and a great meal. I always enjoy the worms here. See you again soon. Tom Turtle." Alternatively, they could write several entries from a groundhog's diary through the seasons.

TIME:
30 Minutes
MATERIALS:
Paper
Pencils

Deep Sleep

Hibernating groundhogs seem "nearly dead," as the story explains. Their temperature hovers just above freezing, their heart beats only four or five times per minute, and they breathe once every four minutes. Provide students with thermometers and stopwatches and have them measure their own temperature, heart rate, and breathing rate. Then have them compare their numbers with those of a hibernating groundhog. What is the difference between their temperature and the groundhog's? How many times would they breathe for every groundhog breath? How many times would their heart beat for each time a groundhog's beat?

TIME:
30 Minutes
MATERIALS:
Thermometers
Stopwatches
Paper and pencils

Groundhog Hike

Do groundhogs live in your area? Take students on a hike in groundhog territory on February 2 to look for groundhogs and their burrows. If you see any groundhogs, what are they doing? If not, keep watch and mark the day you first see a groundhog out and about. Keep a chart of other signs that indicate winter's end and the beginning of spring. This is the science of *phenology*, the study of events that mark the changing seasons. Look for other emerging hibernators (chipmunks, skunks, snakes, turtles), watch for returning migratory birds, monitor trees for the first buds and leaves, note when flowers bloom, and track temperatures to mark the final frost. If you and your students do this each spring, you can compare dates from year to year and look for similarities, differences, and patterns over time.

TIME:
Variable
MATERIALS:
Large sheet of paper to chart spring signs

Ranger Rick Student Page

GROUNDHOGS: THE TRUTH COMES OUT

For each of these myths or false statements, explain the true story as told in *Ranger Rick*.

MYTHS and FALSEHOODS	The TRUE STORY
Using groundhogs to predict the weather is a custom that began long ago in Europe.	
Groundhogs wake up from their winter hibernation each year on February 2.	
When a groundhog emerges, the first thing it looks for is its shadow.	
Groundhogs are closely related to pigs.	
Groundhogs must stay skinny so they can fit into their burrows when winter comes.	
Hibernation is just an extra-long night's sleep.	
Groundhogs sleep alone in their burrows all winter.	

On the Go Through Ice and Snow

pages 22-28

Learning Links:

The bond between people and dogs is important in many cultures. In this story, students learn how people depend on their dogs in the Far North.

DISCUSSION QUESTIONS & WRITING PROMPTS

Pre-Reading Questions:

- What kinds of things do people do for dogs?
- What do dogs do for people?

Comprehension Check:

- How do the Inuits in Greenland depend on dogs?
- Why do sled dog owners put boots on their dogs' feet? When do they do this?
- Why don't the dogs get cold sleeping in the snow?
- How far can a dogsled team run in a day?
- How do dogs help the Nenets and Chukchi in Russia?

Critical and Creative Thinking Connections:

- How does the life of a sled dog differ from the life of a pet dog?
- How are the dogs in this story built for life in northern lands?
- Do you think some kinds of dogs wouldn't be well-suited for life in this climate?
- In many places, snowmobiles have replaced dog teams for traveling and working in the Far North. What are the advantages and disadvantages of a dog team compared with a snowmobile?
- Think about the relationship between dogs and people in the Far North. Do you think people benefit most, dogs benefit most, or both benefit equally? Why?

RESOURCES

Sled Dogs Run by Jonathan London (Walker, 2005). A young girl explains how she trains three Siberian husky pups in preparation for her first solo sled run.

The Great Serum Race by Debbie S. Miller (Walker, 2003). This is the legendary tale of the first Iditarod, a heroic sled dog relay from Anchorage to Nome to save the town from an outbreak of diphtheria.

www.pbs.org/wnet/nature/sleddogs/index.html Explore the world of dog-sledding with this PBS broadcast and complementary Web content.

http://pooka.nunanet.com/~oxana/ Learn about the life of the Nenets on this Web site.

ACTIVITY IDEAS

Dogsled Ride

As a group, look at the picture on pages 22-23. Ask each student to imagine that he or she is the person on the sled behind the dog team and write a story or poem about the experience. To help students think more deeply about the scene, ask questions such as: What do you see and hear around you? What are you wearing? How does it feel to be gliding over the snow? Where have you been, and where are you going? What are you thinking about? How do you feel about your dogs? Students can record their reflections on the **Dogsled Ride student page**. When they finish, invite them to share their writing with one another.

TIME:
30 minutes
MATERIALS:
Dogsled Ride student page
Paper & pencils

Life in the North

Investigate the cultures of the Far North. The *Inuits*, *Nenets*, and *Chukchi*, like their dogs, are well adapted to life above the Arctic Circle. How do they survive in these cold places? What do they eat? What kinds of homes do they live in, and what clothing do they wear? What wild and domestic animals are part of their lives? Have students make a mural of each culture that shows how the people live and the animals and wildlife they live with.

TIME:
60 minutes or more
MATERIALS:
Books/Internet to research Far North cultures
Big sheets of paper
Art supplies

High Latitudes Travelogue

Seek out someone in your community who has visited the Far North or has been dogsledding. Invite this person to share the experience with your students through photos and stories. Have students prepare questions for your guest before the presentation and follow up with a discussion about what you learned.

TIME:
45 minutes
MATERIALS:
None

Dog Team Relay

Give students a chance to burn off some energy and experience the feeling of running as a team. Read *Sled Dogs Run*, *The Great Serum Race*, or another book about sled dogs to set the scene. Outdoors, organize them into "dog teams." Select one student in each team to be the "lead dog" and one to be the "musher." Set out markers at the start and finish. Challenge the teams to run together as if they are connected by a harness, guided by the commands of the musher and following the lead dog's direction. Teams could race each other, or they could run in succession, relay style, trying as a group to beat their own record.

TIME:
30 minutes
MATERIALS:
Cones to mark the course

DOGSLED RIDE

Look at the photo of the dogsled team on pages 22-23 in *Ranger Rick*. Imagine that you are the person on the sled. Write about your ride in the space below.

1. When you look around you, what do you see? _____

_____

2. What does the air feel like on your skin? _____

_____

3. Close your eyes. What sounds do you hear? _____

_____

4. How do you feel as you glide over the snow? _____

_____

5. Where are you going? _____

_____

6. What are you thinking about? _____

_____

Now use your answers from the questions above to write a story or poem about your dogsled journey. Use the back of the page if you need more space.

_____

_____

_____

_____

_____

_____

_____

_____

_____

Lost . . . and Found!

pages 32-34

Learning Links:

For many years, the ivory-billed woodpecker was presumed extinct. The recent rediscovery has generated great excitement—and big questions about humans' role in the conservation of the bird.

DISCUSSION QUESTIONS & WRITING PROMPTS

Pre-Reading Questions:

- What does it mean for a species to be extinct?
- Can you name any extinct species?

Comprehension Check:

- The ivory-billed woodpecker is named for its large, powerful beak. Name two ways the bird uses this beak.
- In what states was the ivory-billed woodpecker once found?
- Beginning in the late 1800s, what happened to cause trouble for the birds?
- When Gene Sparling and his companions went looking for the birds in 2004, what tools did they use in the search?
- What evidence did the experts collect to conclude that the ivory-bill lives?

Critical and Creative Thinking Connections:

- For many years, people believed that the ivory-billed woodpecker was probably extinct. When an ivory-bill sighting was confirmed, it caused a lot of excitement. How does this news make you feel?
- The sighting is very good news, but it doesn't mean the birds are safe from extinction. What do you think people should do to be sure that ivory-bills don't still become extinct?
- Do you think it is the responsibility of humans to try to keep other species from becoming extinct? If so, in all circumstances or only some? Explain your opinion.

RESOURCES

The Race to Save the Lord God Bird by Phillip Hoose (Farrar, Straus, and Giroux, 2004). A dense but lively account of the ivory-bill's tale. This book was published just before the rediscovery, so it doesn't include the latest news.

To get the most recent updates on the ivory-bill story, as well as a wealth of other information about this stunning bird, its decline, and all the excitement about the recent rediscovery, visit the following Web sites:

www.birds.cornell.edu/ivory

www.nature.org/ivorybill

www.ivorybill.org

ACTIVITY IDEAS

Front Page News

Have students use the *Ranger Rick* article to generate a list of the major events in the story of the ivory-bill's decline and rediscovery. Visit www.birds.cornell.edu/ivory for many more details. Then ask students to write a series of newspaper headlines to describe each of the major events. They could also create a timeline showing when each of these events occurred.

TIME:
30 Minutes
MATERIALS:
Books/Internet to research ivory-bills

Name that Bird

Take students outdoors for some birdwatching in your own area. Using binoculars and field guides, try to identify some of the birds you see. After you return, discuss the challenges of identification and how difficult it must have been to track the ivory-bill in the southeastern swamps and confirm its identity.

TIME:
30-45 Minutes
MATERIALS:
Binoculars
Field guides

Quest for X

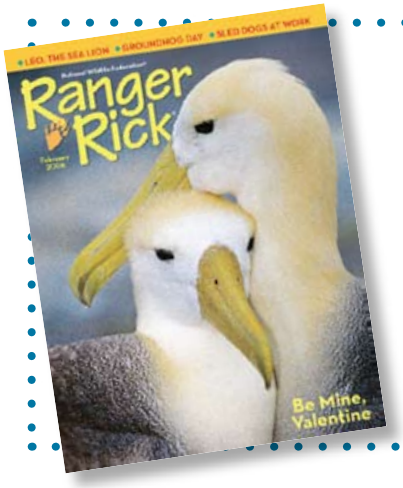
Discuss the concept of extinction. The current rate of extinction is higher than it has been at any time since the dinosaurs died out 65 million years ago. Scientists estimate that between 50 and 150 species (mostly unnamed insects and other invertebrates) become extinct every day, and they attribute this alarming statistic to human activities. The rediscovery of the ivory-billed woodpecker is one bright spot in this gloomy picture—though it was not immediately greeted with celebration. Many scientists were initially skeptical that the sightings were authentic. Only after more evidence was gathered were they willing to support the conclusion. Have students choose another extinct species they wish could be "rediscovered" and write an adventurous tale about their quest to find it. Have students describe where they'll look, with whom, what tools they'll take along, and how they'll track the creature down. Ask them to imagine the quest is successful and describe the circumstances of the discovery, how it makes them feel, and how others react to the news. See extinct.petermaas.nl/extinct and www.iucnredlist.org for lists of endangered and extinct species.

TIME:
45 Minutes
MATERIALS:
Books/Internet for information about extinct species

Woodpecker Reunion

Can you imagine a grand woodpecker family reunion with many different kinds of woodpeckers gathering to celebrate the return of their long-lost relative? Ask students to envision this celebration and develop a skit, story, or poster to describe it—or create woodpecker masks or costumes and join the festivities! They could do any or all of the following: Create a guest list and invitations. Invent games for the woodpeckers to play. Design a menu for the birds' feast. Write a speech for the ivory-bill to make when all the other woodpeckers drink a toast to its good health and long life!

TIME:
60 Minutes
MATERIALS:
Paper & pencils
Art supplies or skit props



Family Fun!

Dear Parent or Guardian,
Your child is reading Ranger Rick magazine in class. Each month, amazing photos, feature articles, and activities bring nature, wildlife, and conservation to life. Extend the learning and fun at home with these engaging family activities. Enjoy!

HEART ART

Bake up a batch of "Heart-y Cookies" (page 16). Try the animals pictured. Then use your imagination to create your own heart-shaped creatures. Happy Valentine's Day!

SING FOR SPRING

The frogs in "Ranger Rick's Adventures" (pages 29-31) are getting ready for their spring concert. Are you ready for spring? Put together your own Frog Pond Band to ring in the season. Be a green frog: strum a big rubber band. For a bullfrog, blow across a soda bottle. Run a finger up the tines of a comb for a chorus frog. To add some spring peepers, ring a set of small jingle bells.

I LOVE ANIMALS

After you chuckle at "Funny Valentines" (pages 36-39), make valentine cards for the animals in your life—pets or wild animals you know and love.

THE MATING GAME

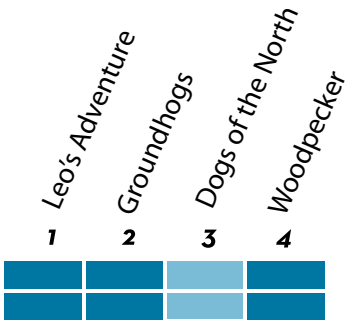
Invite Mom and Dad, Grandma and Grandpa, or other couples in your family to tell stories about what they did to "attract their mates." Compare their strategies with the birds' behavior in "Be Mine!" on the "Fun on the Run" insert. Are there any similarities?

SAY WHAT?

Herring seem to have an unusual way of communicating ("The Buzz," page 13). Make a list of all the ways you can think of that animals communicate. From songs to scents to body language, what kinds of information do these signals communicate? Want to try it? During a meal or another time when you'll be interacting as a family, try communicating with one another without using speech or written language. But not like a herring, OK?

For more interactive family fun, be sure to visit www.nwf.org/kids

NATIONAL SCIENCE EDUCATION STANDARDS



Science as Inquiry

K-8	Abilities necessary to do scientific inquiry
K-8	Understandings about scientific inquiry

Physical Science

K-4	Properties of objects and materials
K-4	Position and motion of objects
K-4	Light, heat, electricity, and magnetism
5-8	Properties and changes of properties in matter
5-8	Motions and forces
5-8	Transfer of energy

Life Science

K-4	Characteristics of organisms
K-4	Life cycles of organisms
K-4	Organisms and environments
5-8	Structure and function in living systems
5-8	Reproduction and heredity
5-8	Regulation and behavior
5-8	Populations and ecosystems
5-8	Diversity and adaptations of organisms

Earth & Space Science

K-4	Properties of Earth materials
K-4	Objects in the sky
K-4	Changes in earth and sky
5-8	Structure of the Earth system
5-8	Earth's history
5-8	Earth in the solar system

Science & Technology

K-4	Abilities to distinguish between natural and human objects
K-8	Abilities of technological design
K-8	Understanding about science and technology

Science in Personal and Social Perspectives

K-8	Personal health
K-4	Characteristics and changes in populations
K-4	Types of resources
K-4	Changes in environments
K-4	Science and technology in local challenges
5-8	Populations, resources, and environments
5-8	Natural Hazards
5-8	Risks and benefits
5-8	Science and technology in society

History and Nature of Science

K-8	Science as a human endeavor
5-8	Nature of science
5-8	History of science