

Animal Skins

by Mary Holland



Animal Skins

Fur, feathers and scales are all animal coverings or skins. Animals use their skin to stay warm and dry, protect themselves, hide or even to warn other animals to stay away. Following *Animal Noses*, *Animal Tails*, *Animal Eyes*, *Animal Mouths* (NSTA/CBC Outstanding Trade Science Award), and *Animal Legs*, Mary Holland continues her photographic *Animal Anatomy and Adaptations* series by examining the many different ways that animals use and rely on their skin covering adaptations to survive in their habitats.

Animals in this book include wood frog (cover), American Bittern (title page); blinded sphinx moth, cicada, porcupine, striped skunk, white-tailed deer fawn, blue jay, male and female red-winged blackbirds, green frog, red eft, American toad, common garter snake, and human.



Arbordale Publishing offers so much more than a picture book. We open the door for children to explore the facts behind a story they love.

The *For Creative Minds* includes

- Match the Skin to the Animal
- How Animals Use Their Skins
- Special Skins
- Skins and Animal Classes

Thanks to Sarah Chatwood, Master Naturalist and Educator with Montana Audubon for verifying the accuracy of the information in this book.

Visit www.ArbordalePublishing.com for free resources and support: teaching activities; quizzes; reading levels; and alignment to Common Core, NGSS, and state standards.

Arbordale's interactive ebooks read aloud in both English and Spanish with word-highlighting and adjustable audio speed. Available for purchase online.

Mary Holland is a naturalist, nature photographer, columnist, and award-winning author with a life-long passion for natural history. After graduating from the University of Michigan's School of Natural Resources, Mary worked as a naturalist at the Museum of the Hudson Highlands in New York state, directed the state-wide Environmental Learning for the Future program for the Vermont Institute of Natural Science, worked as a resource naturalist for the Massachusetts Audubon Society, and designed and presented her own "Knee-High Nature Programs" for libraries and elementary schools throughout Vermont and New Hampshire.

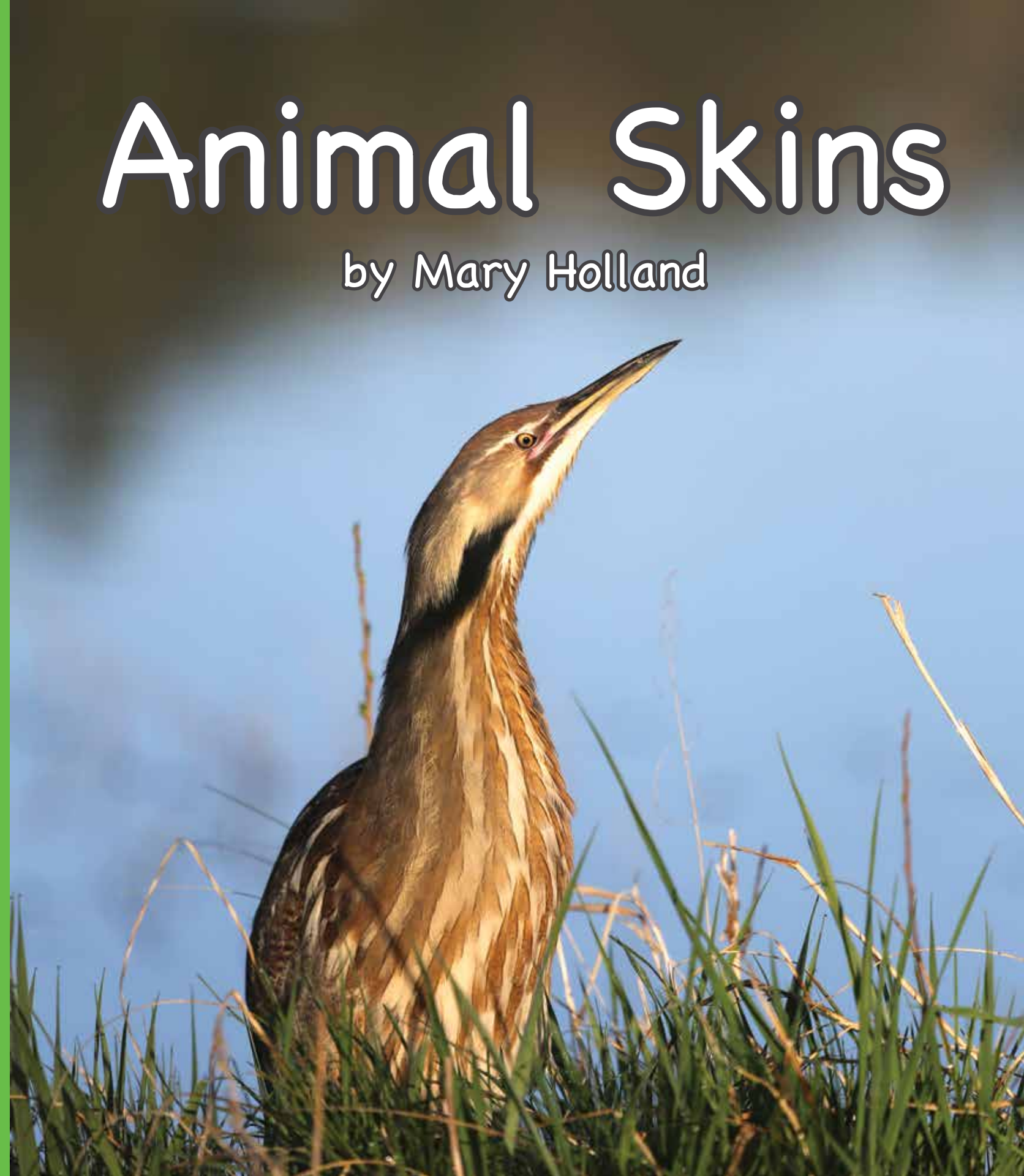
Her other children's books with Arbordale include *Otis the Owl*, *Ferdinand Fox's First Summer* (NSTA / CBC Most Outstanding Science Trade Book and Moonbeam Children's Book Award), *The Beavers' Busy Year*, *Yodel the Yearling*, *Animal Noses*, *Animal Tails*, *Animal Eyes*, *Animal Legs*, and *Animal Mouths* (NSTA / CBC Most Outstanding Science Trade Book). Mary's book *Naturally Curious: a Photographic Field Guide and Month-by-Month Journey Through the Fields, Woods and Marshes of New England* won the 2011 National Outdoor Book Award for the Nature Guidebook category. *Naturally Curious Day by Day* was published in 2016. Mary lives in Vermont with her lab, Greta. Visit Mary's blog at naturallycuriouswithmaryholland.wordpress.com.



Mary Holland

Animal Skins

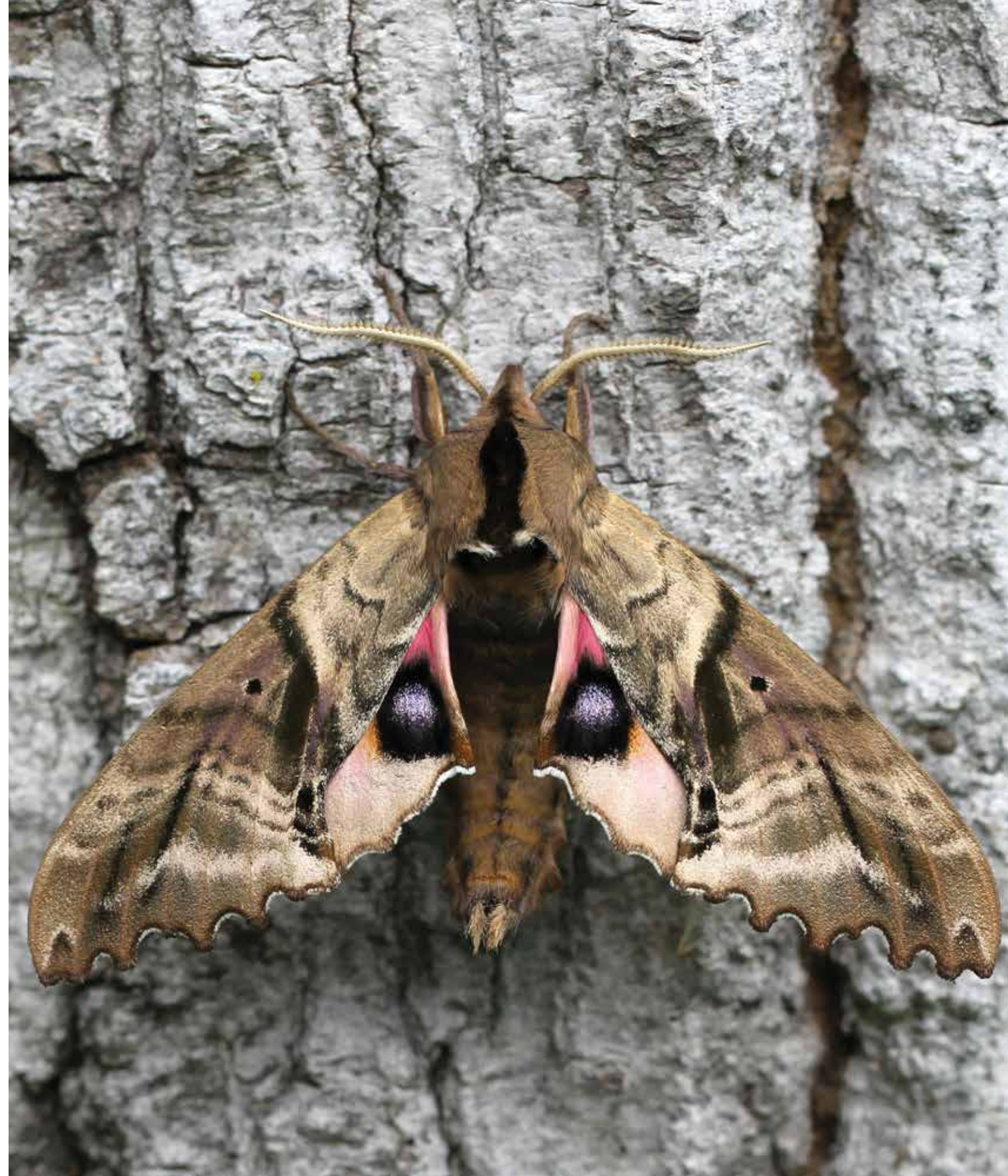
by Mary Holland



Fur (hair), feathers and scales are animal skin coverings that look very different from each other but do many of the same things. They can keep an animal warm and dry, protect an animal from predators, warn other animals to stay away, or even help an animal hide (camouflage).

The wings and bodies of moths and butterflies are covered with tiny, powdery scales.

The scales on this moth's wings are colored to look like big eyes to scare off predators.





Our skin grows with us, but an insect's skin (exoskeleton) does not grow. Like snakes, when a young insect's skin gets too tight, it must replace it. The insect makes a new, larger skin under its old one and then sheds its old skin. Some insects shed their skin many times before they become an adult.

After a young cicada grows wings, it splits its skin one final time and flies away.

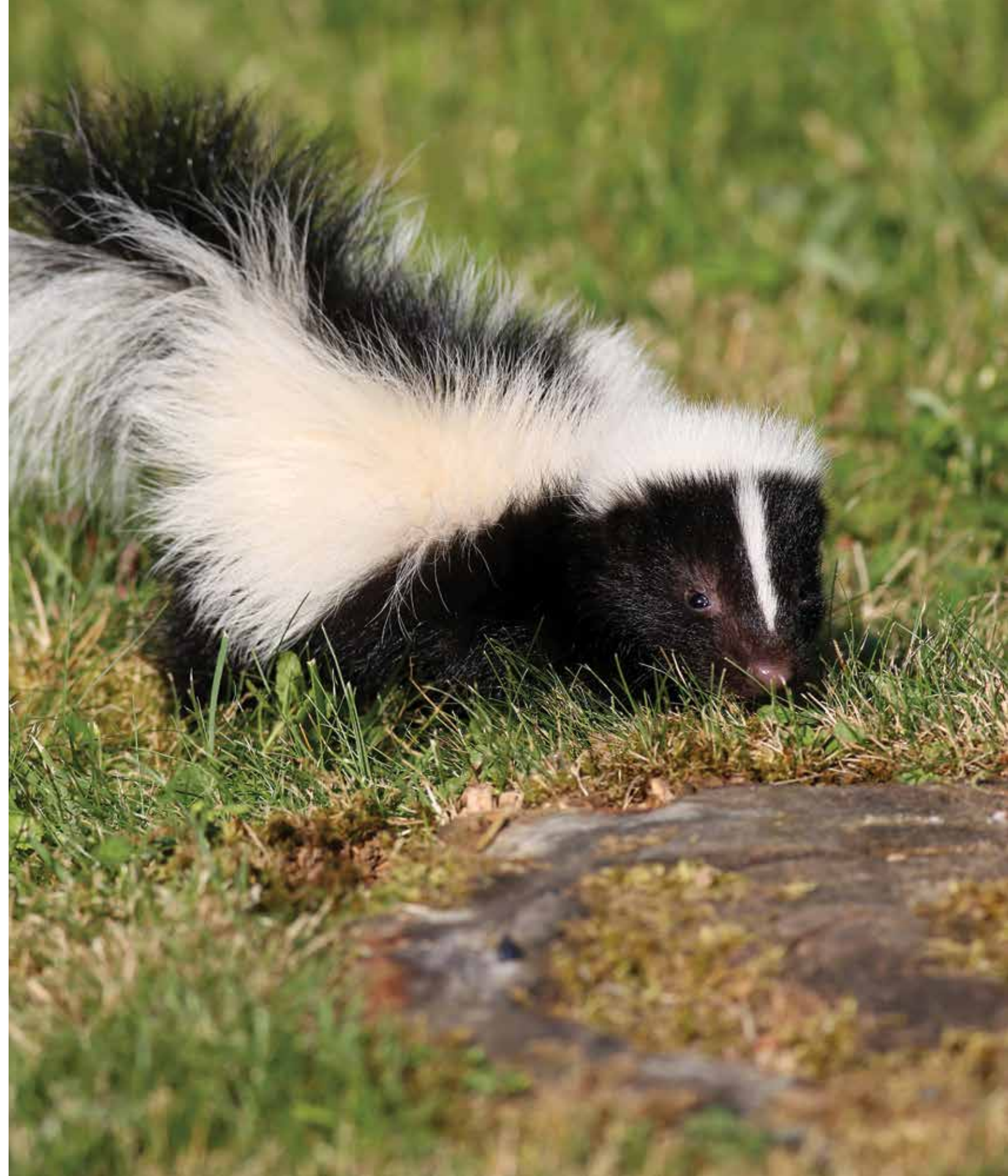


Porcupines are mammals, and like all mammals, they have hair. Porcupines have three kinds of hair:

- Underfur – short and thick, keeps the porcupine warm in winter
- Guard hairs – long, sensitive hairs, act like whiskers, letting a porcupine know when it brushes against something
- Quills – stiff, pointed hair used for protection

Quills are hard, hollow, and pointed, with little hooks at their tips. If you touch one, it will stick into you. But don't worry — if you don't touch a porcupine, you won't get any quills in you. A porcupine cannot throw its quills any more than you can throw your hair!

A striped skunk is a mammal and has a black-and-white coat of hair. If an animal really bothers it, a skunk can spray it with a smelly liquid that comes out under its tail. Most animals don't get near skunks because they know that its striped coat means "stay away or I'll spray you!"



For Creative Minds

This section may be photocopied or printed from our website by the owner of this book for educational, non-commercial use. Cross-curricular teaching activities for use at home or in the classroom, interactive quizzes, and more are available online.

Visit www.ArbordalePublishing.com to explore additional resources.

Match the Skin to the Animal

Match each animal to its skin.

A 	B 	C 	D 
spotted salamander	porcupine	European starling	snapping turtle

1 	2 	3 	4 
--	---	--	---

Answers: A3, B4, C2, D1

How Animals Use Their Skins

Which of these animals uses its skin to:

1. breathe	2. crawl	3. keep warm
4. defend itself	5. camouflage itself	6. warn others

Some animals may use their skin for more than one purpose.

 barred owl	 American toad
 ring-necked snake	
 Pero moth	 red eft

Answers: to breathe: American toad, red eft; to crawl along the ground: ring-necked snake; to keep warm: barred owl; to defend itself: American toad; to camouflage itself: Pero moth, American toad, barred owl; to warn others: red eft

Special Skins

Hairy-tailed Mole: Moles spend most of their life underground, in tunnels that they dig with their front feet. The fur coat of moles is short, soft and velvety. It can easily move forward or backward, so that the mole can travel in tight tunnels without getting stuck.



European Honey Bee: Honey bees are covered with branched hairs. As they travel from flower to flower collecting pollen grains for food for their hive, some of the pollen gets caught in their hairs. When honey bees visit a flower, some of the pollen covering their body is left behind and helps turn flowers into fruits (pollination).

Turkey Vulture: While most of a turkey vulture is covered with feathers, its red head is almost featherless. The reason for this may be so that when this scavenger is eating a decaying animal, it does not soil head feathers when it reaches into the rotting carcass to feed. The lack of feathers on its head may also help it stay cool in the summer, as heat from its body can escape more easily if it's not trapped by feathers.



Gray Treefrog: Gray treefrogs have the ability to change the color of their skin. They can be gray, green or brown, depending on the temperature, amount of light and their surroundings. Gray treefrogs tend to become darker when it is cold or dark, and lighter when it is hot and sunny. Their mottled skin blends in with bark, making it very hard to find them when they are on a branch.

Skins and Animal Classes

Animals with backbones are divided into five different groups, or classes: fish, birds, reptiles, mammals and amphibians. One of the several ways that scientists sort animals into these classes is by their skin covering!

- Mammals have fur (hair) at some point in their lives.
- Fish have moist scales.
- Birds are the only animals that have feathers.
- Amphibians have smooth, wet skin.
- Reptiles have dry scales.

Looking at their skin coverings, can you identify to which animal class these animals belong?



bear



owl



frog



snake



human



fish

Answers: Mammals: bear, human; Fish: fish; Bird: owl; Amphibian: frog; Reptile: snake

To Lily Piper, whose skin is so very soft—MH

Thanks to Sarah Chatwood, Master Naturalist and Educator with Montana Audubon for verifying the accuracy of the information in this book.



Library of Congress Cataloging-in-Publication Data

Names: Holland, Mary, 1946- author.

Title: Animal skins / by Mary Holland.

Description: Mt. Pleasant, SC : Arbordale Publishing, [2019] | Series: Animal anatomy and adaptations | Audience: Ages 4-9. | Audience: K to grade 3. | Includes bibliographical references.

Identifiers: LCCN 2018050175 (print) | LCCN 2018053186 (ebook) | ISBN 9781643513423 (Pdf) | ISBN 9781643513447 (ePub 3) | ISBN 9781643513461 (Read aloud interactive) | ISBN 9781643513393 (hardcover) | ISBN 9781643513409 (pbk.) | ISBN 9781643513416 (spanish pbk.)

Subjects: LCSH: Body covering (Anatomy)--Juvenile literature. |

Skin--Juvenile literature. | Adaptation (Biology)--Juvenile literature.

Classification: LCC QL941 (ebook) | LCC QL941 .H65 2019 (print) | DDC 591.47--dc23

LC record available at <https://lcn.loc.gov/2018050175>

Lexile® Level: 640

key phrases: animal adaptations

Animals in this book include wood frog (cover), American Bittern (title page); blinded sphinx moth, cicada, porcupine, striped skunk, white-tailed deer fawn, blue jay, male and female red-winged blackbirds, green frog, red eft, American toad, common garter snake, and human

Bibliography/ Bibliografía:

Halfmann, Janet. *Fur and Feathers*. Mt. Pleasant, SC: Arbordale Publishing, 2010. Book.

Holland, Mary. *Naturally Curious: A Photographic Field Guide and Month-By-Month Journey Through the Fields, Woods, and Marshes of New England*. North Pomfret, VT: Trafalgar Square Books, 2010. Book.

Text Copyright 2019 © by Mary Holland

The “For Creative Minds” educational section may be copied by the owner for personal use or by educators using copies in classroom settings.

Printed in China, June 2019
This product conforms to CPSIA 2008
First Printing

Arbordale Publishing
Mt. Pleasant, SC 29464
www.ArbordalePublishing.com



If you enjoy this book,
look for other Arbordale books that may be of interest:



Includes 4 pages of
learning activities.

Look for more free activities
online at

ArbordalePublishing.com