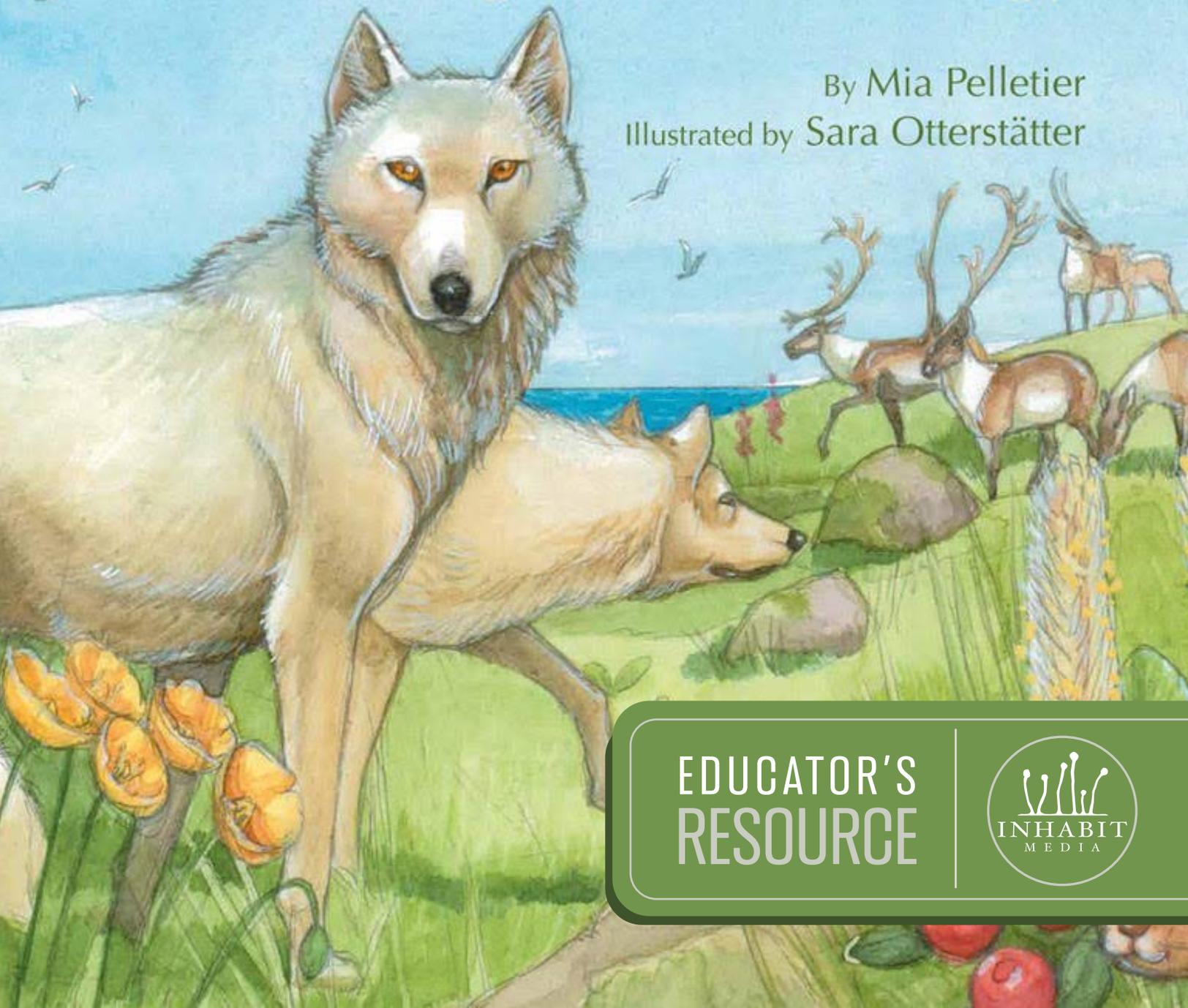


AVATI

Discovering Arctic Ecology

By Mia Pelletier

Illustrated by Sara Otterstätter



EDUCATOR'S
RESOURCE



Avati: Discovering Arctic Ecology

About the Book

The Arctic is not a barren, frigid landscape filled with only ice and snow. It is a complex ecosystem that contains many thriving habitats, each supported by dozens of ecological relationships between plants and animals. From the many animals that live and hunt at the floe edge, to the hundreds of insects that abound on the summer tundra, this book gives a detailed bird's-eye view of the fascinating ways that animals, plants, and insects coexist in the Arctic ecosystem.

About the Author

Mia Pelletier studied ecology and anthropology and holds an MSc from the Durrell Institute of Conservation and Ecology in the United Kingdom. Drawn to wilderness and shorelines, Mia has lived in faraway places from California to the Magdalen Islands and the Canadian Arctic, and spent six years working on the co-management of Arctic protected areas with Inuit communities on Baffin Island.

About the Illustrator

Sara Otterstätter studied illustration and graphic design at the University for Applied Studies in Münster, Germany. Since 2007, she has been working as a freelance illustrator for German and international publishing houses. The focus of her works is educational illustrations for children.

Pre-Reading Discussion Questions

- Show the class the cover of the book. Ask if anyone knows what the words “*avati*” and “ecology” mean and have a brief discussion about how the title tells readers what this book is about.
- Explain that this book is a work of non-fiction and ask if anyone can explain what that means. Share that the book contains many facts and suggest that students take notes during the reading about the facts they think are the most interesting.
- Show the glossary at the back of the book. Have students used a glossary before? Explain that if they don't know the definition of any italicized words in the book, they can go to the glossary and look them up. (If you are reading the book aloud to the class, you can choose whether to look definitions up as you read the story or wait until afterwards.)

During and Post-Reading Discussion Questions

The following questions and discussion points can be used during and after reading *Avati: Discovering Arctic Ecology*. Provide students with the chance to voice their own opinions, share their experiences, ask questions, or point out anything else they may notice about the book.

- Look again at the cover of the book. Can you identify the animals shown? If you don't live in the Arctic, or haven't visited there, were you surprised that the cover doesn't depict a snowy scene? Why do you think the illustrator or publisher decided to put a summer scene on the cover of a book about the Arctic environment?
- What are some of the ways that the boundaries of the Arctic are defined? Why is the Arctic described as being "above the treeline"? Can you describe the different terrain found in the Arctic? What is the Arctic Circle? What countries does the Arctic Circle pass through?
- Avati means "environment" in Inuktitut, the language of Inuit. What do you know about Inuit, and where do they live? What does "Nunavut" mean in that language? What Greek word does the word "Arctic" come from? Why was that name chosen for this land? Have you ever seen Ursa Major or Ursa Minor in the night sky?
- From the notes you took while reading (or hearing) the book, share what you think are the most interesting facts you learned. Why were you intrigued by these? Was it because of the way the animal, bird, or terrain was described? Were you fascinated by a physical characteristic or by a particular animal's behaviour? What were some of the more unusual behaviours? Is there a characteristic or behaviour you would like to have? Example: "If I could fly as fast as the gyrfalcon, I would . . ."
- What is it called when landfast ice meets open ocean? Can you name some of the animals and birds you might find there? Why does the ice there sometimes look golden brown? Which fish is an important food for birds, animals, and Inuit? Have you ever eaten Arctic cod? How about Arctic char? Have you ever gone fishing for either?
- Where do the murre seabirds lay their eggs? Why don't the eggs fall off the cliffs? How many do they lay, and what colour are they? Which animals and birds try to feast on the murre's eggs? How do the murrens find food when there's still ice on the water? What other signs of life can be found in a polynya?
- Why do millions of birds return to the Arctic every spring? Which bird of the Arctic has the longest migration on Earth? Where does it go when it's not nesting in the Arctic? How many miles does it fly every year? Where do Arctic terns make their nests and what do they eat?
- What is the role of the permafrost on the Arctic tundra? What life can be found in mud and pools of water? What species feeds on these insects? And what species do the insects feed on? Why are insects an important part of Arctic ecosystems? Can you name some Arctic insects? What are some ways that insects stay warm in cool Arctic summers? How do they pass the winter?
- Peary caribou are one of the animals with a coat that changes from winter to summer. Can you name some of the other animals that this happens to? What do Peary caribou eat? What is their favourite food? What is the term for an animal that only eats plants?

- After reading this book, do you understand the words “predator” and “prey”? What is the relationship between two animals if one is the predator and one is the prey? Give some examples of both from the book. Who are the predators of the Peary caribou? Why do these predators look for caribou that are young, old, or weak? Can you name some of the ways that prey animals protect themselves? What are some common tools in a predator’s hunting arsenal?
- Seals are prey for polar bears, but they are also prey for what non-natural predator? How many of the predators in the book are also hunted by Inuit? Can you think of other examples from the book of ways Inuit interact with Arctic animals, birds, and sea life?
- From the book: “As muskoxen open up little patches of tundra with their hooves, rock ptarmigans use these openings to search for tasty plants.” This is an example of how some animals in an ecosystem depend on others. Can you think of other examples from the book that show how Arctic animals depend on other Arctic animals for survival?
- Talk about what happens as autumn comes and the weather turns colder. Name some of the shorebirds that fly south. Which animals feed on summer seeds? Which plants and berries ripen and change colour? Name some of the animals, birds, insects, and sea life that stay in the Arctic throughout the winter. What are the plants called that survive all winter beneath the snow?



- How do caribou and muskoxen find food underneath the snow? What are some other animals with feet adapted for staying warm in the snow, walking on snow, or finding food? Name some Arctic animals whose white coats help them stay camouflaged in the snow.
- Give some examples from the book of natural features that animals use to camouflage themselves. Do you think it's more important to use camouflage to hide from predators? Or is it more important to use camouflage to find your prey?
- Which marine animals find food and safety in or on the winter sea ice? Who uses the ice as their hunting ground? How do walruses stay warm in the cold water? Can you name the types of whales found in the Arctic Ocean?

Extension Activities

Have students complete one or more of these activities.

Language Arts

- Study all the glossary words and sort them into these categories:
 - Ecosystem/habitat
 - Animals
 - Ocean/water
 - Terrain/plants
 - Birds
 - Insects
- Then choose one of the categories and write two or three paragraphs about Arctic life using the words in your category.
- Choose any of the full-colour pages in the book and write two or three detailed, descriptive paragraphs about what is happening in the picture.
- There are many legends and traditional stories told about the Ursa Major and Ursa Minor constellations. Write your own original story explaining how these two bears came to reside in the Arctic sky.
- Choose one facet of the Arctic ecosystem that is interesting to you and imagine that you are designing a website where visitors can learn more. Outline what information would appear on the website's home page, and then write the text that would appear on three or four other pages of the site. Describe the photos or illustrations you would use on those pages. What would your website name be? What URL would you use?

Arts

Divide the class into four teams and assign a different Arctic season to each team. Each team will create something representative of their season and then present the information to the rest of the class. Here are some examples, but feel free to invent your own presentation:

- Make a poster depicting that season's animal activities
- Design a chart that shows the "top ten things to watch" during that season
- Create flash cards showing animals, birds, or insects with a seasonal picture, name, and fact

Science

- Choose two Arctic animals, birds, or insects from the book and conduct research to find out more about them. Compare and contrast the two and write a report. Do they eat the same foods? Do they protect themselves in the same way? Are they predators or prey? How are they alike and different?
- One of the fascinating habitats described in the book is the Arctic Ocean. Using the book and glossary as a starting point, conduct further research about life in the water. Write a report about marine animals, the role of ice in their lives, and how sea life is interconnected.
- This book explores the landscapes of Nunavut. Conduct research and write a report about the landscapes, habitats, and animal life in another Arctic Circle country. Is it similar to what is described in this book? What are the differences?
- Conduct research and write a report on Arctic bird migration. Which birds migrate? Where do they travel to? How far do they travel? Where do they make their nests when they're in the Arctic?
- There are several Arctic characteristics that are only briefly mentioned in the book. Choose one of the following, conduct research, and write a report about it:
 - The snow patterns formed by wind and snow, and the names they have been given by Inuit
 - The aurora borealis, or northern lights

