

# **TEACHER'S GUIDE**

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ISBN 1-894856-12-0



# Teacher's Guide Going Wild: Amazing Animal Adventures <u>Around the World</u>

### About the Book

*Going Wild: Amazing Animal Adventures Around the World* is a nature book like no other, as children learn about wildlife, the environment, and conservation through first-person accounts from one of Canada's foremost animal adventurers. In this book, lavishly illustrated by his own photographs, Keating describes ten of his most memorable wildlife-watching trips, in his trademark energetic and upbeat style. In this book Brian describes:

- miraculously escaping from a pride of charging lions in Africa on the scariest day of his life
- strolling down a penguin superhighway in Antarctica
- discovering (the hard way) the memorable defence mechanism of Norway's petrels-projectile vomiting
- marvelling at Borneo's amazing proboscis monkeys with their huge light-bulb noses dangling between their eyes
- looking into the eyes of Godzilla when getting up-close-and-personal with marine iguanas in the Galapagos.

# About the Author

Brian Keating is a keen naturalist, avid outdoorsman, world traveller, intrepid adventurer, and extraordinary spokesperson for the world's wild places and the creatures that inhabit them. His first job with the Calgary Zoo in 1981 was in their education program. Now Brian is Head of the zoo's Conservation Outreach Department, and responsible for national and international conservation projects, such as the Wechiau Hippo Sanctuary in Ghana, West Africa, and the nature-based eco-tour program that he started in 1983.

Keating has been a weekly guest on local CBC Radio for nearly two decades and has been featured bi-weekly on the Discovery Channel for the past six years. In addition to his fulltime job at the zoo, Keating is an Adjunct Assistant Professor of Anthropology at the University of Calgary, a pilot, a scuba diver, and mountaineer.

# About this Teacher's Guide

The *Going Wild: Amazing Animal Adventures Around the World Teacher's Guide* is an instructor resource that correlates to *Going Wild: Amazing Animal Adventures Around the World*. The activities in this guide can be used individually or as a series of lessons, depending on the requirements of the teacher. Activities are drawn from the Science curriculum shared by Canada's provinces and territories for grades five to eight, particularly the units focusing on: Wetland Habitats (Grade 5), Trees and Forests (Grade 6), Interactions and Ecosystems (Grade 7), and Freshwater and Saltwater Ecosystems (Grade 8). Students will be encouraged to analyze and interpret, perform and record, initiate and plan, and hone communication and teamwork skills. They will create models; discuss; debate; research, plan, and execute presentations; and initiate, plan, and create examples of conservation organizations.

**Humanities connections:** While all activities draw from the Science curriculum, activities one, four, five, and six also have strong Social Studies and Language Arts connections. Activity one draws on the grade six curriculum, Meeting Human Needs—Local Government, and grade seven's Culture; activity four connects to the grade five curriculum, Canada—Its Geography and People, grade six's Meeting Human Needs—Local Government, and grade seven's Culture; and activity six connects to the grade six curriculum, Meeting Human Needs—Local Government, and grade seven's Culture; and activity six connects to the grade six curriculum, Meeting Human Needs—Local Government, and grade seven's Culture; and activity six connects to the grade six curriculamake the book a fantastic cross-disciplinary text in the classroom. At the beginning of each activity is a section providing Skills, Science, and Humanities Focuses for the activity, which will help teachers to choose activities based on Humanities and Science curricula.

#### **Skills Focus:**

- communication and teamwork
- initiating and planning

**Science Focus:** Aboriginal knowledge providing an alternative source of understanding the environment; human impacts on the environment; human wants and needs impacting the environment; personal and public decisions that impact the environment

**Humanities Focus:** Impact of environment on human communities and cultures; local governments

In the introduction (pp. 4–5) to *Going Wild*, Keating describes his exciting work at the Calgary Zoo and his commitment to modern conservation methods and the importance of outreach conservation programs. "Things that Fly By in the Night" (pp. 18–21) and "Saving Ghana's Hippos" (pp. 42–45) also touch on

In a group discussion have all students compare Iwokrama to Wechiau in terms of their organization. Iwokrama was instituted by the government of Guyana; Wechiau was organized by the Wechiau people.

- How could Aboriginal knowledge serve to provide an alternative source of understanding in the Wechiau sanctuary?
- Did Aboriginal knowledge contribute to the institution of the Iwokrama preserve?
- How have human wants and needs influenced the structure of both preserves?

modern conservation methods and their success. Divide the class into two groups. Have one group read the story on Ghana's hippo sanctuary and the other group read about the Iwokrama preserve in Guyana.

Using Keating's stories as a basis, have students research the conservation methods used in the two sanctuaries (start with the following websites: www.iwokrama.org and www.nri.org/MakingEndsMeet/ghana.htm)

Have each group give a brief presentation on the conservation methods used by the two preserves. Students may talk about the following concepts: holistic methods, taking local human populations into account, ecotourism, the "core" hippo area at Wechiau, the use of Aboriginal knowledge (based on longterm observation).

Divide students into their original two groups; have one group find an example of an Aboriginalinstituted preserve in Canada and the other find an example of a government-instituted preserve in Canada. Have students list key factors about each preserve, such as: location, mandate or vision statement, boundaries, attitude toward tourism and local population, conservation methods. Bring students back into a large group discussion about Canadian examples of government- and Aboriginal-instituted preserves. How do the two types of preserves differ? How are they the same?

### Activity Two: Web Work

#### Skills Focus:

**Extending the Exercise** 

- performing and recording
- initiating and planning

**Science Focus:** food chains and food webs; ecosystem connections; producers, consumers, decomposers; bio-diversity

Have students research and draw a food web of an ecosystem featured in one of the following stories: "Pogo Stick Pups," (pp. 38–41), "Saving Ghana's Hippos," (pp. 42–45), "The Land of Light Bulb

Noses," (pp. 30–33), and "Lion Attack at Secret Springs" (pp. 6–9). Encourage students to research and include at least five species present in the ecosystem but not talked about in the stories, identifying producers, consumers, and decomposers. Have students identify the species that are affected by the conservation of other species' habitats (wild dogs and impala; hippos and colobus, vervet, and spot-nosed monkeys, antelope, birds, and bats; pygmy elephants and proboscis monkeys).

# Activity Three: Fitting In

#### **Skills Focus:**

- analyzing and interpreting
- performing and recording
- communication and teamwork

**Science Focus:** adaptations necessary for interaction and interdependence; impacts of species actions on ecosystems; benefits of adaptations to species in specific environments; adaptations to fresh and salt water ecosystems; factors causing adaptations to specific environments

Brian Keating writes about the adaptations animals have made to their ecosystems in "Looking into the Eyes of Godzilla" (Galapagos Islands) (pp. 34–37), "The Penguin Superhighway" (The Antarctic Continent) (pp. 26–29), "Petrel Puke and Headless Kittwakes" (Norway) (pp. 14–17), and "An Outback Walkabout" (Australia) (pp. 10–13). How do a species' adaptations help it to fit into its ecosystem? Divide your class into four groups and assign one of the following animals to each group: chinstrap penguin, marine iguana, petrel, and kangaroo. Have each group read the story specific to its animal, then have them delve further (using the Internet and other sources) to find out more about how each animal's adaptations help it to fit into marine and land ecosystems. (For examples of adaptations within the stories see pages 26–27, 29 [chinstrap penguin], 35–37 [marine iguana], 15, 17 [petrel], and 10–11 [kangaroo]). Have students research the following:

• Identify and describe the animal's adaptations that are necessary for interaction and interdependence in its ecosystem.

Have each group create a multimedia presentation on their animal, outlining the benefits of its adaptations in its ecosystem.

In "Things that Fly By in the Night," (pp. 18–21) Keating writes about his time at the Iwokrama Nature Reserve in Guyana. He writes:

Worldwide there are about a thousand bat species. In Canada there are only about eighteen species, because we live on the northern edge of where bats can survive. Most of our bats fly here to take advantage of our good insects in the summer and then migrate to warmer regions in the winter.

In the tropics, where bats have evolved in a stable, warm environment, their numbers have exploded. (pp. 20–21)

Read this passage aloud to students, then discuss possible ways in which bat species that summer in Canada have adapted to the climate and food challenges here. What makes them keep coming back? Ask students why they think there are more bats in British Columbia than any other province in Canada. (Climate, forests, food opportunities) Encourage students to read through Keating's story, then to go to various sources to find out more about Canadian bats. A good bat resource site on the Internet is: www.cancaver.ca/bats/



#### Marine Iguana

Sometimes there are so many iguanas on the beach, warming their cold little bodies after a dive, that they climb on top of one another to get the best sun.

Extending the Exercise

#### **Skills Focus:**

- communication and teamwork
- analyzing and interpreting

**Science Focus:** Energy pyramids; biodiversity; food chains and food webs; human impacts on marine environments; biotic and abiotic elements within ecosystems; Aboriginal knowledge providing an alternative source of understanding the environment

**Humanities Focus:** impact of the environment on human communities and cultures; meeting human needs; communities; culture

Have students read the story, "A Ton of Wrinkles" (pp. 22–25). Then read aloud the paragraph that deals with polynyas, places of plenty:

This wealth of cultural history and wildlife in the area is due to the presence of a polynya—a place of plenty. There are only about a half dozen polynyas in the Canadian arctic. They are located where warm-water upwellings keep areas of the ocean free from ice and snow, and also supply nutrients that feed tiny organisms, which in turn feed fish. Fish then attract animals such as seals, sea ducks, and whales. And these animals are what brought the original Inuit to the region. (p. 24)

Lead a discussion on the differences between the types of populations and ecosystems existing in Arctic polynyas and in marine and shoreline ecosystems that do not benefit from a polynya (in plant life, bird life, mammalian species, and human populations relying on all of these). Divide the class into three groups. Have one group research and create a three-dimensional model of a Canadian Arctic polynya, including all levels of the ecosystem. Have the other group research and create a three-dimensional model of a shoreline/marine ecosystem in the Canadian Arctic that does not benefit from polynya conditions. Have the third group research the culture, stories, and history of the Inuit peoples in both polynya and non-polynya marine/shoreline areas and research the following questions:

- How do the two groups of people differ?
- How many differences between the two cultures are directly related to the presence or absence of a polynya?

Representatives from each group should present their models and research during the course of one class, with time for questions and discussion.



### Walrus

A walrus's eyes become more bloodshot the longer it sits out on the ice. The veins in its eyes help get rid of the excess heat.

Going Wild: Amazing Animal Adventures Around the World

#### **Skills Focus:**

- performing and recording
- initiating and planning
- communication and teamwork
- analyzing and interpreting

**Science Focus:** human wants and needs impacting the environment; personal and public decisions that impact the environment; human actions that can threaten living things' abundance and survival; group actions that can serve to preserve ecosystems; human use of forests and other ecosystems

**Humanities Focus:** Language Arts exercise in creating a written proposal based on research

Have students read the stories "A Ton of Wrinkles," (pp. 22–25) "Things that Fly By in the Night" (pp. 18–21), and "Lion Attack at Secret Springs" (pp. 6–9). Each of these stories relates to the practice of ecotourism in different areas of the world. Refer students especially to the areas of the stories that relate to ecotourism practices (kayaking in such a manner that does not disturb the walruses, p. 25; canopy platform tours and riverboat tours, pp. 19–20; not making assump-

tions about the wildlife in the park based only on previous experience, p. 9). Discuss the benefits of having people explore sensitive wilderness areas in wildlife friendly ways instead of barring them from those areas. Then, have students form groups to create their own ecotourism companies. Each group should choose a sensitive wilderness area in Canada to explore (Saskatchewan's Great Sand Hills; British Columbia's old growth forests; Alberta's Wood Buffalo National Park; etc.). Then, taking hints from Keating's writings about rules and practices of ecotourism, as well as researching existing ecotourism companies, the groups should form their company mandate and a list of rules for the ecotourists who may choose to hire them as guides. Students should submit their company proposals in a print format, including the following:

- Area of Canada explored, species viewed
- Company name, mandate, vision statement
- Services offered (transportation, etc.)
- Rules for ecotourists in the wilderness area, taking into account the specific area and its ecosystem

Extending the Exercise Divide the class into two groups and stage a debate with each group defending one position: Ecotourism is good for the environment, or Ecotourism is bad for the environment. Using the information that they have gained in creating their own ecotourism companies, students will be able to craft arguments and present examples for both sides. Two representatives from each group should be chosen by the groups to debate the issue, with you, the teacher, acting as mediator. Each group should present at least four points and be available to answer questions from the opposing side.



#### **Burro Burro River**

We returned to Guyana 2 years after our first visit, guiding a group of tourists. We traveled with them down the Burro Burro River as part of a tourism project that benefits the locals.

# **Activity Six: The Comeback**

#### **Skills Focus:**

• communication and teamwork

**Science Focus:** investigate evidence of change in ecosystems; methods to observe and monitor changes in ecosystems and assess impacts of human actions; links between human impacts and human wants and needs on the environment; species revival and the implications of species comeback

**Humanities Focus:** the impact of human communities on the environment; meeting human needs

In "Looking into the Eyes of Godzilla" (pp. 34–37) Keating writes that the Galapagos giant tortoise is making a comeback after its populations were severely decimated by whalers from the nineteenth to mid-twentieth century. Now, he writes, there are about fifteen thousand tortoises, thanks to the Charles Darwin Research Station's efforts (p. 35). Discuss with students the impact on ecosystems of changes in populations of species. The tortoise's near-extinction impacted on the ecosystem of the Galapagos, just as its comeback does. Present students with a Canadian example of a comeback population, examining the effects on the ecosystem of the species' revival. Possible species discussed could be the swift fox and the peregrine falcon.

Extending the Exercise

Have students research the impact of the giant tortoise's comeback on the Galapagos by directing them to: http://www.darwinfoundation.org/



### Galapagos tortoise

The giant tortoise, which can weight up to 200 kilograms (440 lb.) and live from 100 to 150 years, gave its name to the Galapagos Islands— "galapago" means tortoise in Spanish.

#### Skills focus:

- performing and recording
- initiating and planning
- communication and teamwork
- analyzing and interpreting

**Science Focus:** predator/prey relationships; adaptations necessary for interaction and interdependence; human actions that can threaten living things' abundance and survival; groups actions that can serve to preserve ecosystems; food chains and food webs; the impact of human wants and needs on the environment

**Humanities Focus:** communities; local government initiatives; impact of the environment on human communities

Have students read "The Land of Light Bulb Noses" (pp. 30–33) paying close attention to the information on mangrove trees, then refer them to the list of conservation action groups on page 46. Conduct a classroom discussion on what a conservation action group for mangrove trees and their ecosystems might look like. What would the group do to keep mangrove populated areas from falling to prawn farms? You may also wish to discuss the conservation of wild dogs in "Pogo Stick Pups" (pp. 38–41), referring to the method of introducing prey to keep predator populations up (p. 39).

Next, divide students into groups to create their own conservation action groups modelled after research into the conservation groups featured at the back of the book. Groups should choose a particular Canadian species at risk and its ecosystem: the swift fox, the burrowing owl, and the humpback whale are examples. They should devise a recovery plan to help keep their species at risk from going extinct. The plan should include a way to raise public awareness about the species and the challenges it is facing, including the impact of human wants and needs on the species' ecosystem. Each group should create a multi-media presentation that will:

- outline the main threats to the species and suggest ways in which those threats could be reduced or removed
- have a strategy to promote public awareness, using a variety of communications media
- describe recovery projects or conservation groups that already exist for this species, or describe methods that the group has adopted from the conservation groups listed in the book
- explain how scientific knowledge can and should be used to help the action group



### **Proboscis Monkey**

Proboscis monkeys, which feed on mangrove leaves, have a beautiful coat of beige, reddish brown, and white. They look like they are dressed in three-piece pajamas.