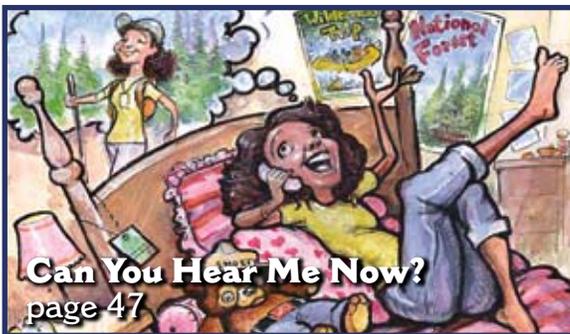


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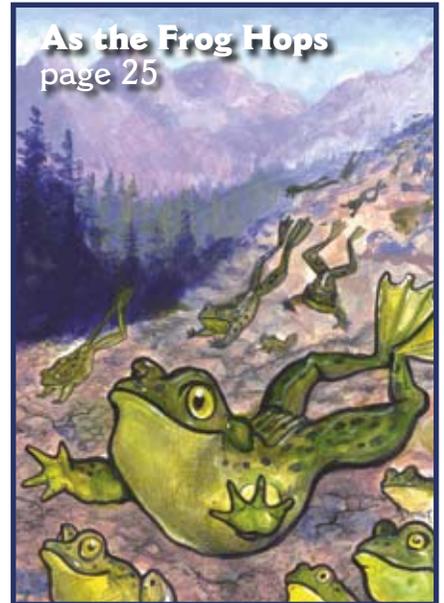
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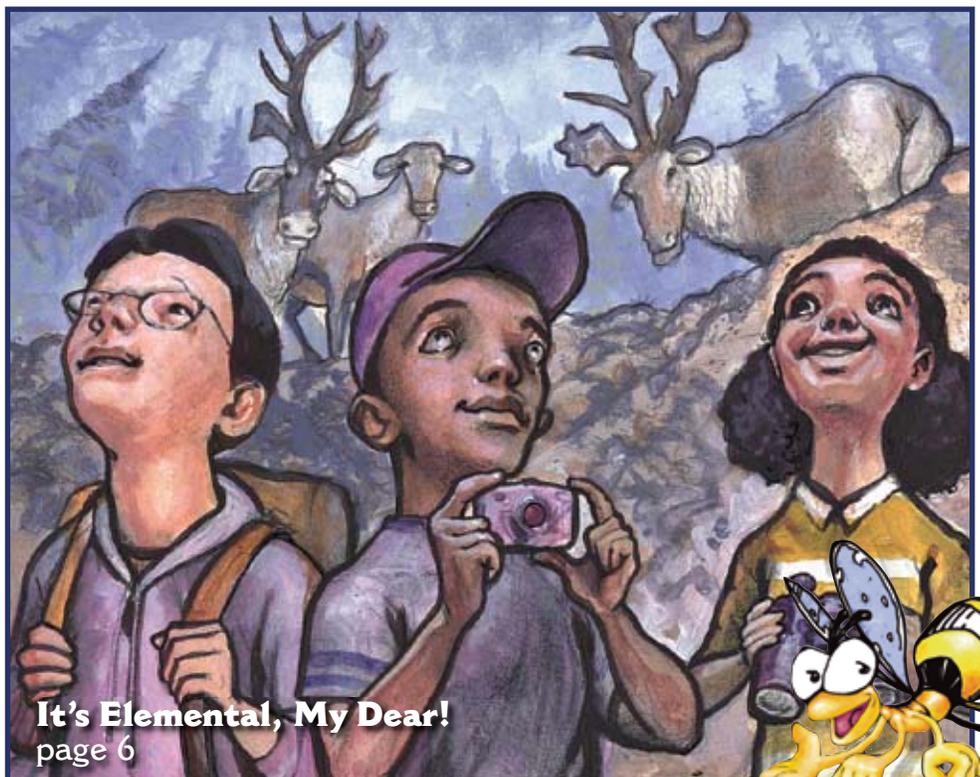
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It's Elemental, My Dear!



***What Makes an Experience
Different at Gates of the Arctic
National Park and Preserve?***

Glossary:



relationship (re la shun ship): When two or more things are connected in some fashion.

element (el uh ment): Any of the parts or qualities of a thing, especially a necessary one.

outdoor recreation (out dôr rek re a shun): Activities done outside for fun, such as hiking, boating, or playing baseball.

wilderness (wil dÛr nes): Area designated by Congress to be preserved in a wild and natural condition as part of the National Wilderness Preservation System.

manager (ma ni jÛr): A skilled person who directs or manages something.

designate (dez ig nat): To choose or appoint; to give a name to.

Congress (kong gres): The group of elected officials in the United States that makes the laws. Congress is made up of the Senate and the House of Representatives.

native (nat iv): Naturally occurring in an area.

subsistence (sub sis tens): The act of living or stay alive, getting the items necessary to live, such as food, clothing, and shelter.

boreal (bôr e ul): Relating to a northern climate, with long, cold, and dry winters. The trees in a boreal forest are evergreen.

Meet the Scientists

▼ **Dr. Glaspell:** My favorite science experience was having no idea what time of the day or night it was while interviewing visitors under the 'midnight sun' in Gates of the Arctic National Park.



▲ **Dr. Watson:** My favorite science experience was when I spent 5 months in Finland at the Arctic Centre in Rovaniemi (Ro van e em e) learning about wilderness areas in the north and the people who live there.



Thinking About Science

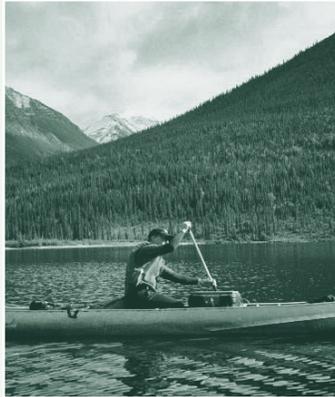
Do you like nature but science is your least favorite subject? You could still become an environmental scientist! Some environmental scientists are social scientists. Social scientists study individuals or groups of people. Instead of working with chemicals or microscopes, environmental social scientists study the *relationship* of individuals or groups of people to the natural environment. They often do this by observing people or by asking them questions. In this study, the scientists wanted to know which elements of an *outdoor recreation* experience were important to people visiting a *wilderness* in Alaska.

The scientists wanted to identify elements of visitor experiences that wilderness *managers* could track. Some of the elements might be things that people can change. Other elements might be things that people cannot change. Weather is one example of an element

Meet the Scientists



▲ **Dr. Kneeshaw:** My favorite science experience was when I flew into the base camp of Mt. McKinley in Denali National Park and Preserve. I talked with people who climb mountains about their experiences on North America's largest mountain peak.



▲ **Dr. Pendergrast:** My favorite science experience was going with my father and uncle on Saturday mornings to the Pendergrast Chemical Company. Saturday afternoons were spent hunting through junk yards for pumps, pipes, motors, and so forth with Dad and Uncle Bob. I had my Handy Andy Tool Kit and could take apart anything I wanted to; and for a couple of cents a pound could buy the most amazing stuff!

Glossary continued

tundra (tun druh): Treeless flat plains found in cold arctic climates, and covered with grasses, mosses, and small shrubs.

wildlife (wīld lijf): Animals that live in the wild.

species (spe sez): Groups of organisms that resemble one another in appearance, behavior, chemical processes, and genetic structure.

ecosystem (e kō sis tem): Community of plant and animal species interacting with one another and with the nonliving environment.

remoteness (re mōt nes): The quality of being far away.

analysis (uh now luh sis): Separating something into its parts to examine it.

questionnaire (kwes chun nair): A list of questions used to gather information from people.

sample (sam pul): A part or piece that shows what the whole group or thing is like.

constrain (kän stran): To hold in or keep back by force.

Pronunciation Guide

a	as in ape	ô	as in for
ä	as in car	ü	as in use
e	as in me	ü	as in fur
i	as in ice	oo	as in tool
o	as in go	ng	as in sing

Accented syllables are in **bold**.

that affects your outdoor experience. The person you are with is another element that affects your experience. Think about your favorite outdoor activity. There is at least one element that affects how much you enjoy yourself when you do that activity. What is that element?



Thinking About the Environment

Gates of the Arctic National Park and Preserve is located in the northern third of Alaska (**figure 1**). Gates of the Arctic is a national park, but was also *designated* a wilderness by Congress in 1980. For centuries, Gates of the Arctic National Park and Preserve has been inhabited by *native* people. Today, native people still use this area for *subsistence*, and other people go there to do things such as hiking, backpacking, and rafting. This area was created by glaciers, which carved large valleys and wild rivers (**figure 2**). It is now covered with *boreal* forests and arctic *tundra* (**figures 3 and 4**). This area also has an abundance of wildlife. Some of the larger wildlife *species* include caribou (**kair uh bu**), Dall sheep, wolves, and bears (**figure 5**).

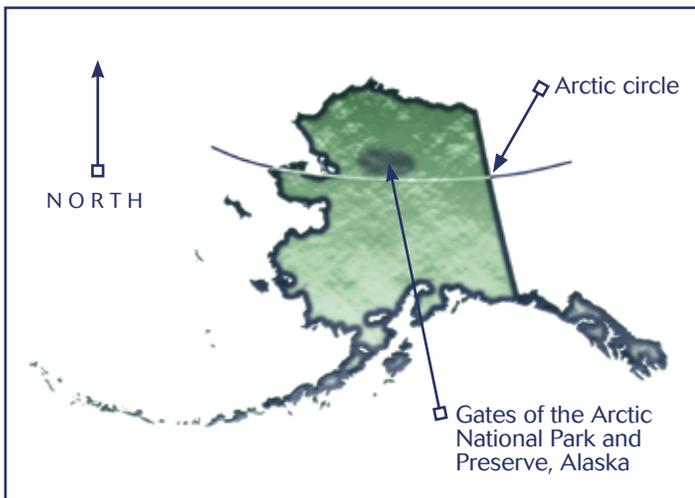


Figure 1. Location of Gates of the Arctic National Park and Preserve.



Figure 2. Gates of the Arctic National Park and Preserve. (Photo by Suzan Stutzman and courtesy of <http://www.wilderness.net>).

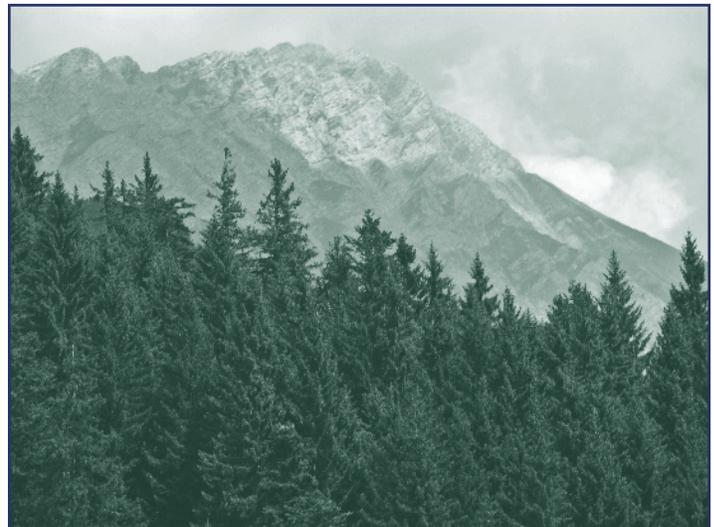


Figure 3. Forests in Gates of the Arctic National Park and Preserve are boreal forests, which are mostly coniferous (evergreen trees with cones).



Figure 4. Much of the land within Gates of the Arctic National Park and Preserve is arctic tundra. (Photo courtesy of <http://wilderness.net>.)



Figure 5. Caribou are one of the species found in Gates of the Arctic National Park and Preserve. (Photo courtesy of <http://www.wilderness.net>)

The Gates of the Arctic National Park and Preserve contains two types of ecosystems. Both of these ecosystems require cold temperatures. The first is an evergreen forest called a boreal forest. The most common tree in Alaska's boreal forest is spruce. A waxy coat on the needles of most boreal trees helps to protect them from the cold. The decomposing needles that fall to the forest floor are highly acidic (uh **sid** ik), discouraging most other plants from growing in the forest. As the spruce needles decompose, they become part of the soil. The acid in the soil that comes from the needles prevents most other plants from absorbing nutrients.

The other ecosystem is the tundra. The tundra is a large expanse of grassland plains and, for most of the year, the tundra is covered with ice and snow. The tundra has a top layer of permafrost (**pür** muh frost). The permafrost is a layer of soil that stays frozen all year. In the summer, the very top layer of permafrost begins to thaw during the long days of the short summer. This provides a watery habitat for insects, waterfowl, caribou, and other wildlife.

Introduction

Wilderness managers want to do the best job they can, for both wilderness and for people who visit wildernesses. To do this, they want to know what is important to visitors. This could be things like having good information, seeing wildlife, or feeling completely free. These are examples of elements that affect the experience that people have when they visit wilderness.

In this study, the scientists wanted to identify the most important elements of an experience in Gates of the Arctic National Park and Preserve. Other scientists had already done similar research in other wildernesses. Therefore, the scientists had some ideas about what might make a wilderness experience different than other outdoor recreation experiences. Gates of the Arctic, however, is different from many other wildernesses because of its location, large size, and remoteness. When people visit this area, they are visiting a vast natural area. The closest town to the park boundary is the small village of Anaktuvuk Pass (**figure 6**). Therefore, the scientists thought that the elements of an experience in this wilderness might be different than in most other wildernesses.



Figure 6. Anaktuvuk Pass, the town closest to Gates of the Arctic National Park and Preserve. (Photo by Brian Glaspell)

Reflection Section



Think about what it would be like to be in an area as remote as Gates of the Arctic National Park and Preserve. Think of three things that you would expect to see, do, or feel if you were in an area that far away from cars, phones, buildings, or other people. Remember that in a wilderness, you cannot use any motorized vehicles or equipment. Share your ideas with your class. Discuss the benefits and disadvantages of visiting such a remote place.

If you were the scientist, how would you find out what some of the elements of experience are for people visiting Gates of the Arctic National Park and Preserve?

Methods

Remember that the scientists had a reason to believe that visits to this wilderness might be different from visits to other wildernesses. To get an idea of what some of the elements might be, they talked with 94 visitors to Gates of the Arctic National Park and Preserve. They spoke with each visitor at the end of his or her trip to the wilderness. The scientists audio-recorded these conversations. Then, they typed the conversations exactly as they were recorded. Using the typed copies, the scientists examined what people said about their experience in Gates of the Arctic National Park and Preserve. This was the first part of their *analysis*.

The scientists used what people said about their experience and created a *questionnaire*. The purpose of the questionnaire was to find out if a larger *sample* of visitors felt the same way as the first 94. The questionnaire was sent to the homes of 242 people who visited Gates of the Arctic National Park and

Preserve. The scientists used a computer program to group the answers into smaller categories that represented the important experiences people had while visiting this wilderness. This was the second part of their analysis.

Findings

As a result of their conversations with the 94 visitors, the scientists read over 1,000 pages of text. Some of the things that people said in the conversations are shown in **figure 7**. Remember that the scientists took the comments from the conversations and used them to develop questions for the questionnaire. The scientists received questionnaires from 83 percent of the people. As a result of their computer analysis, the scientists identified five categories that they considered elements of experience at Gates of the Arctic National Park and Preserve (**table 1**).

Reflection Section



- 🍁 Why do you think that the scientists audio-recorded the conversations?
- 🍁 Do you think that the scientists received responses from all 242 people who were sent the questionnaire? Why or why not?

Number Crunches

How many questionnaires did the scientists receive? Multiply .83 by the number of questionnaires that they sent.

The landscape is big.	The area is remote.
I had a feeling of timelessness.	I was physically challenged.
I felt free.	I felt like I could have been the first visitor.
I enjoyed seeing the wildlife.	The scenery was beautiful.
There were a lot of mosquitoes.	I often felt uncertain about what to do.
I felt that other visitors shared my values.	I felt that I was far from any help.
The area is really far north.	I had to change my plans while in the wilderness.

Figure 7. Some of the comments made about the experience at Gates of the Arctic National Park and Preserve. These comments came from conversations with 94 visitors.

Table 1. Five elements of experience at Gates of the Arctic National Park and Preserve. This list was developed from the computer analysis and is based on responses to the questionnaires.

	Elements of experience and some examples to help describe the element	Percentage of people saying that this experience was important to them
1	The Gates Experience	99
	It was a big landscape.	
	I felt a sense of discovery.	
	I was free from the clock.	
	I felt that I was far from civilization.	
2	Free-Roaming Wildlife	95
	I saw a lot of wildlife.	
	I saw evidence of wildlife.	
	The animals were not used to seeing people.	
3	Freedom From Rules and Regulations	94
	I did not feel <i>constrained</i> by park management.	
	I did not feel constrained by regulations.	
4	Problems With Access	59
	It was difficult to find information about Gates of the Arctic.	
	It was difficult to get to Gates of the Arctic.	
5	Risk and Uncertainty	33
	I often felt that my safety was at risk.	
	I was often uncertain about what would happen next.	
	The weather conditions were challenging.	

Reflection Section

🍁 Look at figure 7 and table 1. Each of the comments in figure 7 should fit somewhere in table 1. See if you can place each item from figure 7 under one of the five elements in table 1.

🍁 Which of the elements in table 1 do you think that wilderness managers can change? Discuss why or how managers might or might not be able to change each of these elements with your classmates.



Discussion

Gates of the Arctic managers might decide to use these five elements. The elements might help them to do a better job for the visitors. If the managers decide to use them, they will have to figure out how to measure each of the elements. Remember, however, that these elements only tell a small part of the story. When people visit a wilderness, there are many aspects to the experience that may never be fully known or understood.



Wondering About Wilderness

What is the difference between wild lands and wilderness? Wild lands, sometimes also called wilderness, are natural areas rich in biological diversity, and they provide many benefits to people and other animals. But how is the wilderness that is referred to in this

edition of the *Natural Inquirer* different from wild lands? A wilderness is an area of natural land or water with special legal protection. Land with this legal protection is part of a national system called the National Wilderness Preservation System. In a wilderness, people can visit but cannot

remain. They cannot take anything mechanical into a wilderness, including vehicles. Within a wilderness, nature rules! For more information about wildernesses, read page 5 in this journal or visit <http://www.wilderness.net>.

Reflection Section



- Look at table 1, element 2 (Free-Roaming Wildlife). Name one way that managers might measure this element.
- Why do you think that managers will have to measure any of the elements that they decide to use?

From Glaspell, B., Watson, A., Kneeshaw, K., and Pendergrast, D. (2003). Selecting indicators and understanding their role in wilderness experience stewardship at Gates of the Arctic National Park and Preserve, *The George Wright FORUM*, 20(3): pp. 59-71.

FACTivity



The question you will answer with this FACTivity is: What are some of the things that make a visit to Gates of the Arctic National Park and Preserve different than a visit to other wildernesses or other natural areas? The method you will use to answer this question is as follows:

After your teacher divides your class into small groups of 4-5 students,

appoint someone to record your discussion. Look at each element in table 1 and the example descriptions, one at a time. Using a discussion format, answer all three of the following questions for each element. You can use the chart on the next page as a guide to completing this exercise.

1. The element expresses something about a relationship. Was the relationship

between a person and some other thing or things? If so, what was or were the other thing or things? Was the relationship between the person and something else inside of them, like a feeling or emotion? If so, what was it? Was it a combination? If so, how?

2. The scientists thought that the remoteness of Gates of the Arctic National Park and Preserve might make the experience there different than other wildernesses. How might this element be different for a visitor to Gates of the Arctic than for a visitor to a wilderness located near a large city like Atlanta, Georgia, or Los Angeles, California?

3. Think about natural areas that are not wildernesses. When people hike and camp in these areas, they can drive off-road vehicles and carry any kind of

machines that could help them survive or be more comfortable in the outdoors. How might this element be different for people when visiting natural areas that are not wildernesses, compared with Gates of the Arctic National Park and Preserve?

Pick someone from your group to present your findings to the class. Were the different groups' findings similar or different? Discuss the findings with your classmates and come to a group agreement about the similarities and differences and the reasons for those similarities and differences between outdoor recreation experiences at three types of areas: (1) Gates of the Arctic National Park and Preserve, (2) other wildernesses, and (3) natural areas that are not federally protected wilderness.

Question	Group Discussion and Answers
Element One	
1	
2	
3	

FACTivity Extension



Visit Gates of the Arctic National Park and Preserve Web site at <http://www.nps.gov/gaar/home.htm>. After having a chance to read about Gates of the Arctic National Park and Preserve, discuss some of the key values represented by this area with your classmates.



If you are a Project Learning Tree-trained educator, you may use PLT Activity #54, "I'd Like To Visit a Place..." as an additional activity resource.