

## Dueling Mandates



### When

After the expedition

### Disciplines

Science and social studies

### Description

Students work in small groups to consider management issues specific to Yellowstone National Park.

### Learner Outcomes

The student will:

- Explore the complexities involved in making management decisions and discover the far-reaching consequences of park management decisions.

### Materials

Dilemma Cards handout, Internet/library research materials



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### Background

The National Park Service is only one of the federal agencies responsible for managing public lands. Others include the Bureau of Land Management, the U.S. Forest Service, and the U.S. Fish and Wildlife Service. Sometimes visitors perceive a national park and a national forest as similar; however, there are notable differences between them. The Department of the Interior administers national parks, while the Department of Agriculture manages national forests. The National Park Service is mandated to preserve resources unimpaired, while the U.S. Forest Service is mandated to wisely manage resources for a variety of sustainable uses.

Most federal land management agencies allow for “multiple uses” for the greatest good for the greatest number of people. On the other hand, through the National Park Service Act (1916), Congress authorized the National Park Service *to promote and regulate the use of the Federal areas known as national parks, monuments, and reservations...by such means and measures as conform to the fundamental purpose to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.* The mission—preservation of wildness for the enjoyment of the people—is appealing, but it is difficult to accomplish.

Park managers must forever struggle with this dual mandate to both preserve and use. The challenge becomes increasingly difficult as more people visit parks. As the value of wild places becomes increasingly clear, we are struggling to decide, with limited resources, just what can and should be saved.



### Suggested Procedure

*After the expedition, the teacher will:*

1. Explain that park staffs are often faced with difficult management decisions. Use the background information to introduce students to the dual mandates of preservation and use.
2. Tell students that their work groups will play the part of Yellowstone park officials attempting to make wise management decisions. Give each group a Dilemma Card relevant to a specific Yellowstone issue. Allow each group time to read its card and research the issue presented on the card. Suggest to the students that they research their assigned issue on the Internet. The park's official website ([www.nps.gov/yell](http://www.nps.gov/yell)) includes park management plans, press releases, and research documents related to the various issues.
3. Have students choose the best course of action from those proposed, or formulate their own. Encourage them to analyze their choices by listing the pros and cons of the various options they consider. Students should attempt to reach a consensus.
4. Have small groups of students brainstorm and decide on a solution to their dilemma. Then a spokesperson from each group will present the group's dilemma and its solution.
5. Facilitate a class discussion about the issues. What key factors/reasons influenced decisions? What additional information did they need to make an informed decision? What would be the long-term consequences of their suggested solutions?
6. Explain that the Yellowstone National Park management staff is addressing all the various dilemmas by means of management plans, and that the public is involved in the planning process. Encourage students to seek updates from the park rangers during *Expedition: Yellowstone!*

Activity adapted from Explore Your National Parks Yellowstone Discovery Kit, developed in cooperation with the National Park Service and made available by the National Park Foundation through generous funding by Target and The Eureka Company.



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## Dilemma Cards

### Student Handout



#### Winter Use

Old Faithful is the most popular visitor destination in the park, both in the summer and in the winter. The only access into the Old Faithful area during winter is by snowmobile or snowcoach, a large tracked vehicle. Winter use has increased dramatically from virtually none in the 1970s to more than 140,000 visitors per season since the early 1990s. Concerns generated in public meetings include: overcrowding, visitor impacts on natural resources, noise and air pollution, availability of facilities and services, use restrictions, user group conflicts, importance of winter visitation to the local and regional economy, wildlife use of groomed surfaces, wildlife displacement, and health and human safety. The dilemma is: How do you balance the park's dual mandates of preserving park resources while allowing access for the enjoyment of the people?

- Ban snowmobiles from the park and allow people to travel by snowcoach, skis, or snowshoe only.
- Limit the number of snowmobiles that can enter the park each day.
- Require that visitors use the latest model snowmobiles that produce less noise and air pollution than two-stroke models.
- Require that certified guides accompany all snowmobile users to help enforce the regulations, such as traveling on groomed roads only.
- Other.



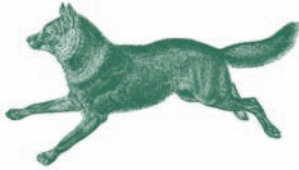
#### Bio Prospecting and Benefits-Sharing

Increasingly, private companies come to geyser basins in the park to collect samples of the unusual microbial life that thrives in extreme hydrothermal areas. As an example, the microorganism *Thermus aquaticus* was discovered in a Yellowstone hot spring. Almost twenty years later an enzyme from *T. aquaticus*, which is synthetically reproduced, contributed to the DNA fingerprinting process earning hundreds of millions of dollars for the patent holder. In 1997, the park signed a benefits-sharing agreement ensuring a portion of future profits from Yellowstone research would go toward park resource preservation. In 1999, a legal challenge put a hold on implementing this agreement until an environmental assessment is completed. Long-standing laws and regulations instruct parks to allow scientific research as long as it does no harm to park resources or values. Park managers do not allow the commercial use of park specimens or removal of microbes beyond the tiny samples required for scientific analysis. The dilemma is: Should the potential scientific and economic benefits resulting from collaboration with scientists be used to support and strengthen the National Park Service's primary mission of resource preservation?

- Prohibit removal of anything from the park.
- Allow researchers to collect bacteria from the park.
- Allow researchers to collect bacteria from the park, but require any company that benefits from the research to share the profits with the National Park Service for the preservation of wildlands.
- Other.

## Dilemma Cards

### Student Handout



#### Wolf Recovery Card one

Wolves used to live throughout the Yellowstone ecosystem. In the early days of the park, it was thought that wolves killed too many elk and were a potential danger to cows and sheep living near the park. Since those days, research has shown that wolves are an important piece of the Greater Yellowstone Ecosystem puzzle—one that should never have been removed.

In the winter of 1995, after a 70-year absence, wolves were brought back to Yellowstone. In the years since reintroduction, wolves have repopulated the area and may soon be “delisted” as an endangered species. To date, far fewer problems have arisen than were predicted. Some wolves have been illegally shot outside the park, have been hit by cars, and occasionally have “gotten into trouble” tracking down domestic livestock—an offense that can lead to the legal death of the wolves involved. As wolf numbers continue to climb, there will be more wolf-human encounters. Wolves are not normally a danger to humans, unless people habituate them by giving them food. Like coyotes, wolves can quickly learn to associate campgrounds, picnic areas, and roads with easy food. This may lead to aggressive behavior toward humans and can increase the risk of a wolf being poached or hit by a vehicle.



#### Wolf Recovery Card two

The return of wolves has already had beneficial impacts on the Greater Yellowstone Ecosystem. Wolves have preyed on elk, and the carcasses have provided food to a wide variety of other animals, especially scavenging species. Grizzly bears have usurped wolf-kills almost at will. Coyote populations have declined inside wolf territories—a finding that may benefit smaller predators, rodents, and birds of prey. Preliminary data from studies indicate that wolf recovery will likely lead to greater biodiversity throughout the Greater Yellowstone Ecosystem. The dilemma: The wolves are back, doing well, and may be delisted. How should wolf management proceed?

- Capture and put a radio collar on all wolves in the park and monitor them regularly. If a wolf leaves the park, bring it back to the park.
- Leave collars on wolves that already have them, but do not collar any new ones. Only return wandering wolves to the park if it is deemed necessary for their immediate survival.
- Let the wolves go where they may, even if it means an early death. Wolves are wild and should never be handled by people or collared.
- Other.

## Dilemma Cards

### Student Handout



#### Wildland Fire

Almost 80% of Yellowstone is forested and most of the forests are thick with lodgepole pine. In summers of severe drought, lightning-caused wildfires are common. Although most summers are quite cool and wet, in summers like 1988, thousands of acres may burn, even if the fires are fought. Many people do not like large forest fires because they can disrupt vacations, change the look of the park, and may spread outside the park—threatening homes. Despite these disadvantages, the Yellowstone ecosystem needs fire to stay healthy. Fire is important to the natural succession of the area and actually helps create the landscape people love to see. Grasses, flowers, and trees are rapidly replacing burned trees. The dilemma is: How do you manage fires in Yellowstone?

- Suppress all fires so there will never be another fire like the one in 1988.
- Allow lightning-caused fires to burn out on their own, but suppress all human-caused fires.
- Only monitor, not suppress, all fires in backcountry areas where people and structures are not in danger.
- Allow logging in the park to reduce fuel levels.
- Other.



#### Lake Trout in Yellowstone Lake

Nonnative lake trout have been illegally introduced into Yellowstone Lake. Their presence in the lake poses a serious threat to the native cutthroat trout population because young lake trout compete with cutthroats for food, and adult lake trout prey on cutthroats. If lake trout were to deplete the cutthroat population, the number of species dependent on the cutthroat for food (such as bears, eagles, and otters) could decline. This could destroy the excellent cutthroat trout fishing in the lake that people have enjoyed for over a century. The dilemma is: How do you protect the native Yellowstone cutthroat trout and other species dependent on the native trout?

- Eliminate the lake trout entirely by destroying all fish life, and then reintroduce the cutthroat. This would cost between \$32 and \$181 million.
- Gillnet some, not all, the lake trout to reduce costs.
- Leave the lake trout alone and see what happens.
- Recruit thousands of anglers to catch lake trout.
- Other.

## Dilemma Cards

### Student Handout



#### Bison Management-Brucellosis Disease

Yellowstone sits on a high plateau prone to severe winters. In the winter, large herds of bison, elk, and other grazing animals migrate to lower elevations in search of forage. Yellowstone National Park is not a zoo—there are no fences keeping the wildlife within park boundaries. Furthermore, animals have no idea about political boundaries! Therefore, the animals migrate outside the park. About half of Yellowstone's bison test positive for exposure to brucellosis, a disease that can cause susceptible domestic cattle to abort their first calf. Because Yellowstone bison migrate into Montana, their exposure to brucellosis concerns the cattle industry in that state. No cases exist of wild, free-ranging Yellowstone bison transmitting brucellosis to cattle. The State of Montana, like other states, has spent much time, effort, and money attempting to eradicate brucellosis in cattle. Elk also carry brucellosis. The human form of the disease, undulant fever, is no longer a public health threat. The dilemma is: How do you manage Yellowstone bison?

- Slaughter bison that leave park boundaries and give the meat, hides, and other products to those in need.
- Inject all wild bison with the brucellosis vaccine.
- Do not prevent the bison from leaving the park.
- Support a proposed law to allow the hunting of bison that leave the park.
- Other.

