



# NATURE DETECTIVES

Summer 2001

## Crow's Quest for Fire

The first winter was hard on the animals. They were fearful of the cold and the snow that seemed to pile deeper each day. Someone, they decided in council, needed to make the long journey to Sky Spirit and ask for the cold and snow to stop. Crow spoke up with his melodious voice and bravely volunteered for the quest.

Using his powerful wings, Crow flew and flew until he reached the home of Sky Spirit. When he told Sky Spirit of the animals' request, Sky Spirit replied that he had no control over the snow and the cold. But, he promised to give Crow something precious to help the animals. Sky Spirit handed Crow a stick. One end of the stick was glowing with bright warmth. Crow took the other end of the stick in his mouth and began the journey home.

As he flew, the bright, glowing end of the stick suddenly burst into red and yellow flames and the stick began to shorten. The fire ate more and more of the stick; smoke entered Crow's nose and throat, and he began to cough. Crow traveled further, and the flames began to singe his rainbow-colored feathers. At last, Crow arrived back at the council of animals. The warmth from the fire immediately began melting the deep snow and warming the air. Crow shared Sky Spirit's instructions for making more glowing firesticks. Using the fire sticks, the animals could build bigger fires.

When a fire accidentally got away from them one day and burned the forest, the animals were sad. But soon they noticed that some of the partially burned trees were sending out new shoots, and different plants sprouted in the burned forest where only trees had stood. Woodpecker and other birds found that the burnt trees were great places to drill new homes. Deer enjoyed nibbling the new plants.

Crow was still sad the fire had ruined his beautiful voice and charred his multi-colored feathers. Then he discovered he could make more sounds now and even imitate other animals when he wanted to play a joke on them. He also noticed, though his feathers look black, in the sun they gleam with the colors of the rainbow.

Adapted from a Lenape tale retold by Nancy Van Laan



Pull Out and Save



# FIRE!

## Fire in our everyday life

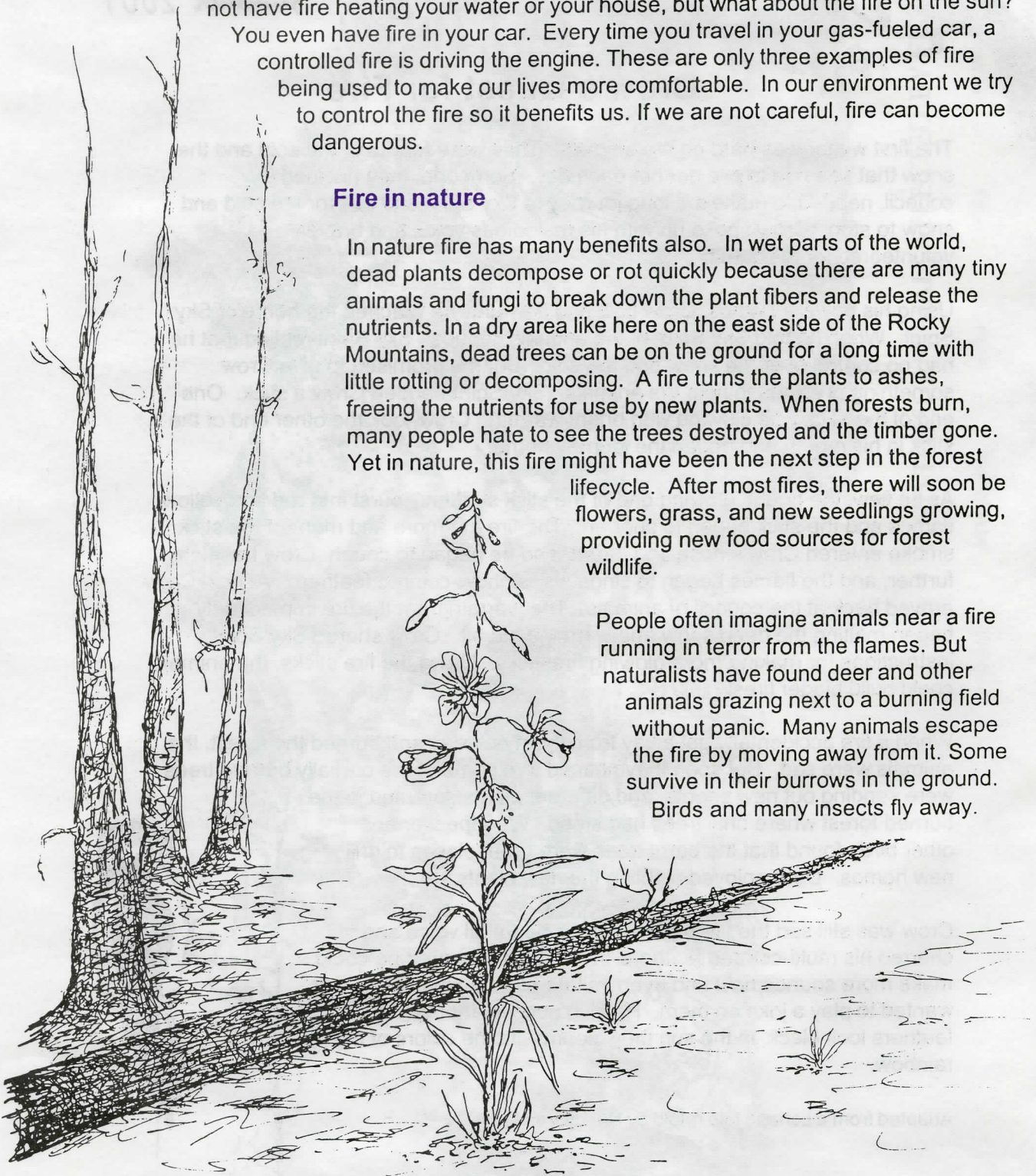
Think of fire. Do you picture a burning house or forest? Those images may come to mind first, but dramatic fires are rare in everyday life. Now think of the warm water in your tap. A controlled flame under many hot water tanks keeps the water hot. If you have gas heat in your house, fire warms the air in your heater vents in the winter. Those fires are right in your house, and they are easily turned on and off with a switch or valve. If you have solar panels, you might think you do not have fire heating your water or your house, but what about the fire on the sun?

You even have fire in your car. Every time you travel in your gas-fueled car, a controlled fire is driving the engine. These are only three examples of fire being used to make our lives more comfortable. In our environment we try to control the fire so it benefits us. If we are not careful, fire can become dangerous.

## Fire in nature

In nature fire has many benefits also. In wet parts of the world, dead plants decompose or rot quickly because there are many tiny animals and fungi to break down the plant fibers and release the nutrients. In a dry area like here on the east side of the Rocky Mountains, dead trees can be on the ground for a long time with little rotting or decomposing. A fire turns the plants to ashes, freeing the nutrients for use by new plants. When forests burn, many people hate to see the trees destroyed and the timber gone. Yet in nature, this fire might have been the next step in the forest lifecycle. After most fires, there will soon be flowers, grass, and new seedlings growing, providing new food sources for forest wildlife.

People often imagine animals near a fire running in terror from the flames. But naturalists have found deer and other animals grazing next to a burning field without panic. Many animals escape the fire by moving away from it. Some survive in their burrows in the ground. Birds and many insects fly away.





## Succession of plants growing after a fire

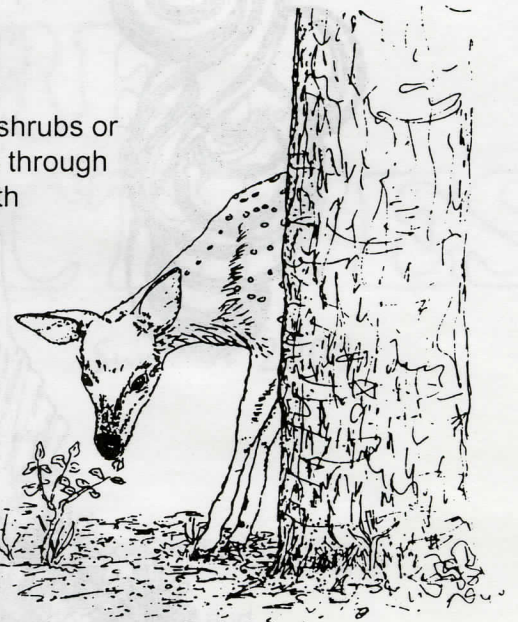
When you look at an old, dense forest, there are not many shrubs or small plants living on the forest floor because little light gets through the tall trees. Here in Boulder County it might be a forest with Douglas fir and Ponderosa pine.

If lightning ignites this forest, all the trees in one area may burn. When the rain stops the fire, blackened tree stumps and ashes remain. It looks completely dead, but after only a few weeks, green grass will be growing amidst the ashes.

Grass seeds can tolerate the fire's heat. Grass roots may have survived, too. The plants grow quickly, fertilized by the nutrient-rich ashes. Seeds that have been in the ground for years may germinate as may the seeds that were blown in by the wind or dropped by birds or buried by squirrels.

These seeds would not germinate if the fire had not killed the trees, allowing light to reach the forest floor and releasing the nutrients contained in the old and dead trees. Some of the old Ponderosa pine might survive the fire since their thick bark protects against ground fires. Aspen trees may tolerate the fire, growing new trees from underground suckers. A year later, the site of the fire will be full of new life. Then the short plants will gradually disappear as the new trees grow to shade them once again.

Many years later a fir and pine forest may stand on the site again. Though a fire seems destructive, it opens up possibilities for other plants to grow and attract new wildlife in the natural cycle of the forest.



## What is fire?

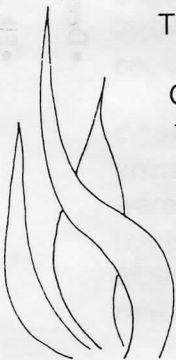
There are three parts to fire: oxygen, fuel, and heat.

Oxygen is a gas present in the air we breathe. To stop a fire by taking away the oxygen, firefighters smother the fire with other gases like the greenhouse gas, CO<sub>2</sub>. This is only possible for small fires.

Fuel is anything that can burn such as dry leaves, twigs, and logs. In managed forests and grasslands, the naturalists try to avoid big fires by removing fallen logs and brush or by burning some of the ground fuel with controlled fires.

Lightning, a campfire, a cigarette, sun shining through broken glass or any other source of heat can start a fire. The heat is the part of a fire we avoid by being careful.

People cause a lot of wild fires through carelessness, and these wild fires are often very damaging to nature since they are difficult to control once they are burning. Often, they start in places a natural wildfire would not start.







**FIND THESE ANIMALS AFFECTED BY FIRE!**

- Deer
- Porcupine
- Owl
- Fox
- Mouse
- Butterfly
- Elk
- Skunk
- Coyote
- Turtle
- Frog
- Bird
- Raccoon