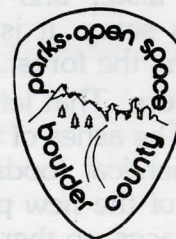


Spring/Summer
1989



Nature Detectives

Who's been here? What were they doing and why were they doing it? When did it happen? Nature detectives try to answer questions like these by looking for clues and evidence of the activities of creatures in the outdoors.

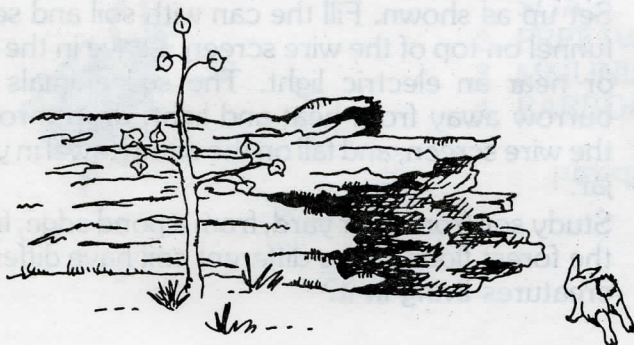
Have you ever wondered about teeth marks on the trunk of a tree or strange footprints in the snow or mud? If you have, then you are already a nature detective.

THEME:



Recycle It!

Nature wins the prize for recycling. Nothing is ever wasted. The only new thing that keeps coming to our planet is energy from the sun.



*Water is used over and over again.

*Air is used over and over again.

*Carbon, nitrogen, oxygen and all the other chemicals that make plant cells and animal bodies are used over and over again.



Water for your shower came through pipes from a reservoir or well. Before that it was rain or snow falling from a cloud. How did water get into the cloud? It evaporated (dried up) from the ground, from city streets, from lakes and ponds, in the heat of the sun.

The oxygen in the air you are breathing right now might have been in the cells of a maple leaf yesterday!

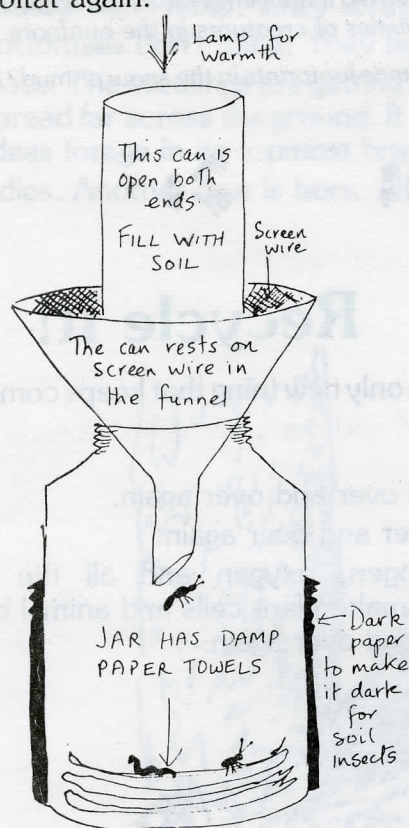
The chemicals that are part of your chicken sandwich might have been in the grass munched by a brontosaurus millions of years ago!

Read on to find out more about recycling in nature, and how people can learn from nature's motto, "WASTE NOT, WANT NOT".

FOREST FIRES

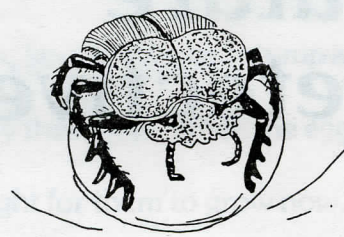
No rain has fallen for weeks. A storm is building. lightning strikes a dead tree. Pow! In no time at all, the forest is ablaze. Great orange tongues of fire lick at the trees. The wind blows and the flames burn faster and faster across the dry grasses. It is scary. It is also nature's way of spring-cleaning the forest.

Dead trees burn. That lets more light reach the forest floor. The ashes of the fire are full of good nutrients (chemical foods) to help new plants grow. Some of the new plant seeds will blow in from other places, so there will be more kinds of plants (more diversity). For a while animals will need to find food somewhere else. But it won't be long before this burned forest grows into rich animal habitat again.



DUNG BEETLES

Even dung (animal droppings) is food! Dung beetles collect droppings from grazing animals, which contain partly digested vegetable food. Each ball of dung is buried with one beetle-egg laid in it. The larva hatches, eats up the dung and eventually emerges as a grown beetle.



SOIL CENSUS

One way to find out about living creatures in the soil is to catch them using a Berlese funnel.

Stuff list:

tin can (open both ends)

funnel

wire screen-cloth

jar

paper towel

magnifying glass to see your "catch"

Set up as shown. Fill the can with soil and set in funnel on top of the wire screen. Leave in the sun or near an electric light. The soil animals will burrow away from heat and light, drop through the wire screen, and fall on the damp towel in your jar.

Study soil from your yard, from a pond edge, from the forest floor. Does different soil have different creatures living in it?

NEARLY NEW

Have you ever looked closely at bird or squirrel nests?

*What are they made of?

*Are they all the same?

*Where do you think the building materials came from?

*Do you see straw, grass, twigs, bits of wool, dog hair, moss, leaves, mud?

*Do you see any recycled people-stuff?

(One squirrel's nest in my yard is made soft with bits of an old mattress and decorated by a sock with red stripes!)

MICE MINERALS

Each year in late winter mule deer shed their old antlers and grow new ones. Yet the woods are not littered with antlers. You hardly ever find them. Why not?

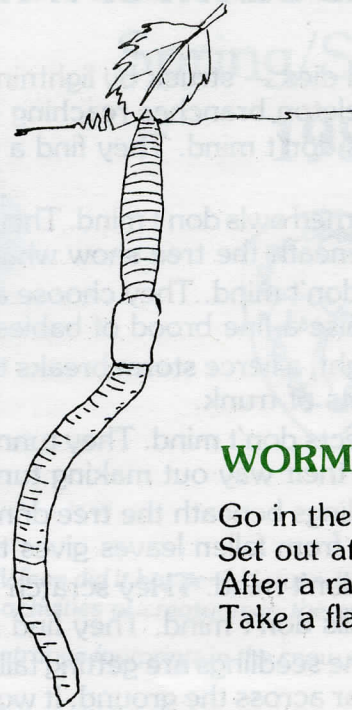
Mice, moles, and other rodents nibble the antlers, which are full of minerals. These minerals help the animals grow just like vitamins help you grow.

Rodents' teeth keep growing all the time. If it were not for antlers and hard gnawing food, mice teeth would get so long that the mice could not close their mouths.

YOUR GARBAGE, SOMEONE'S DINNER

Potato peelings, apple cores, coffee grounds, banana skins, and all food left-overs can be someone's dinner. You can collect them in a special place in your yard, even an old garbage can with some airholes in it. Layer the food leftovers with a few inches of soil and some leaves or grass clippings. Keep moist. While all the soil scavengers and decomposers in your compost heap are having a feast, they are turning your leftovers into rich humus (organic soil).

Dig a hole in a sunny place in your garden. Make it about 18" deep. Fill it with humus from your compost pile. Plant a few pumpkin seeds and watch them grow on leftovers! Remember they'll need water and TLC (tender loving care) too.

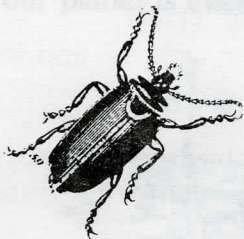


WORM HUNT

Go in the summer.
Set out at night,
After a rainstorm.
Take a flashlight!

WHY RECYCLE?

- *To save landfill space.
- *To make better use of energy and natural resources.
- *To make less pollution and litter.



Unscramble the letters and find out what you can recycle.

1. SGASL
2. PREESWANP
3. MMUNIAL
4. RARBOCDAD

1. glass 2. newspaper 3. aluminum 4. cardboard

Answers:

HOW?

You can start recycling at home. Find a place to store the items to be recycled. Boulder and Longmont have curb-side pick up. Other towns in the county have places to take your recyclables. To find out for your town, look for *Recycling Services* in the Yellow Pages of your phone book.

MAKE YOUR OWN RECYCLED PAPER

Supplies: newspaper shredded into small 2 inch pieces, water, electric blender, old window screen or a screening stapled to a wooden frame.

Pour one cup water into the blender and add a handful of used paper and whirl in the blender. Keep adding paper and water until you have a mushy pulp. Then pour the pulp onto the screen. It is best to do this over a sink or outside. Using a wooden spoon, spread the pulp evenly over the screen. Let the paper air dry for one day, then peel away the paper from the screen. You now have a piece of recycled paper that you can use to make a poster or to draw on.

BIRTH AND DEATH OF A TREE

A cottonwood dies — struck by lightning. After a long life, the tree is gone. All that is left is a dead snag, with skeleton branches reaching to the sky.

*The squirrels don't mind. They find a good nest hole and winter shelter deep inside the ancient trunk.

*The great-horned owls don't mind. They raise two white, fuzzy babies in a nest in a fork of a branch. Owl pellets beneath the tree show what the owls ate for supper.

*The flickers don't mind. They choose a hole, about ten feet off the ground, and drill it out to their liking. They raise a fine brood of babies.

One winter night, a fierce storm breaks the snag. It crashes down, leaving a jagged stump and a few broken sections of trunk.

*The bark insects don't mind. They tunnel through the bark to lay their eggs. When the eggs hatch, the larvae eat their way out making tunnel-patterns as they go.

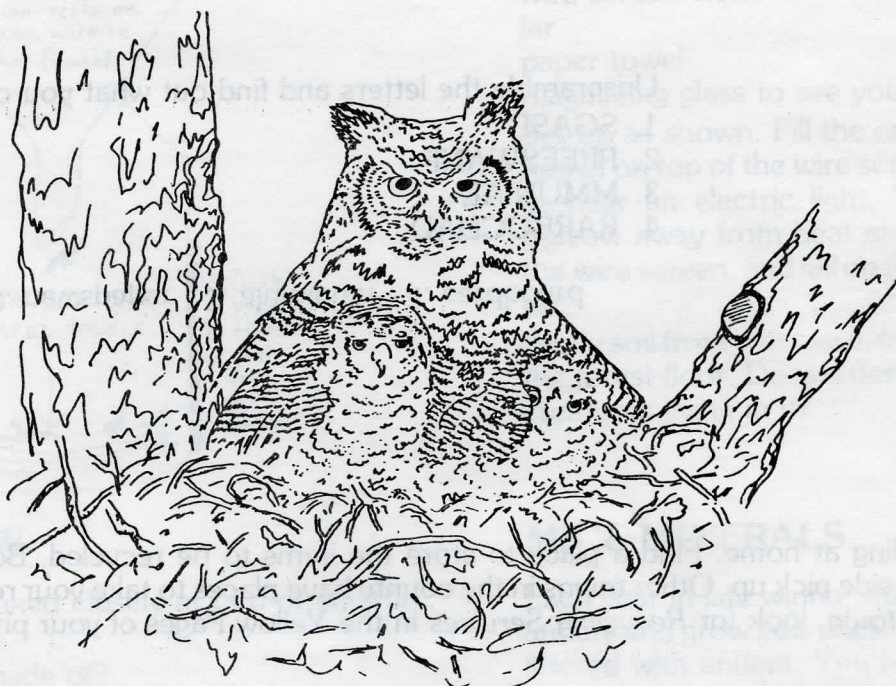
The little seedlings beneath the tree don't mind. There is more light for them to grow now, and the rich soil made from fallen leaves gives them nourishment.

*The skunks don't mind. They scratch around for grubs in the punky, rotten wood of the stump.

*The cottontails don't mind. They find a safe shelter by running inside the hollow trunk.

Years pass. The seedlings are getting tall now, but one is taller than the rest. It gets the most light. Its roots spread far across the ground. It won't be long before it is a fine, big cottonwood. Warblers and chickadees forage in its topmost branches for caterpillars and insects. People picnic in its shade.

A tree dies. Another tree is born. Nature makes use of what it can throughout the cycle.



NATURE DETECTIVES: Place Walden Ponds. Saturday, May 13. Nature wastes nothing. From dead-twig homes to meals of old leaves, everything is used again. Meet the soil clean-up crew! Join the *Pond Pick-up Patrol* and prove people can recycle too. Earn your "habitat helper" badge.

See "Discover Nature Calendar" for details.