Chapter 28

Observing Nature

"When we use all of our senses outdoors, we live fully in the present moment, and so live more richly and intensely."

—Joseph Cornell, environmentalist, outdoor educator, and Scouter

Here are some truths about observing nature. There is always something going on. What's going on is always exciting. We often look, but don't see, though we can change that by learning the skills of effective observation. What we see can help us understand that everything is connected. Observing the relationships of organisms to one another helps us expand our vision beyond ourselves, increasing our appreciation for all forms of life.

Every environment has much to teach us. Have you ever snorkeled around a coral reef or gone skin-diving to the ocean floor? At low tide many people wander along beaches searching for signs of marine life that have washed ashore, and during certain seasons some go out in boats and watch pods of migrating whales. The great swamps of the Southern states are full of remarkable plants and animals, and so are the deserts of the Southwest, the prairies of the Midwest, and the forests of the Northeast. So might be a city park, a Scout camp, and a backyard. In fact, nearly every spot on the globe supports natural communities varied and diverse beyond your wildest imagination.

From a city green space to an expanse of wilderness, we go out into the world to see what's there. And what's there—everywhere we look—is evidence of the complexity and wonder of nature.

The Big Picture

Flora is the Latin word for plants. *Fauna* refers to animal life. In their sound and rhythm, they are words that seem to go together. In the environment, what they represent is absolutely inseparable—vegetation and animals interacting in ways that form balanced ecosystems.

Most of us enjoy observing animals in the wild. There can be real pleasure in watching deer and elk grazing, a beaver working on a dam, an eagle on the wing, or perhaps even a bear crossing a distant ridge. Plant life is nearly infinite in its variety, complexity, and mystery, too. Add the geology of an area, the weather patterns, and there is no end to what can be observed, enjoyed, and studied.

Respect What You Observe

One of the principles of Leave No Trace is to respect wildlife. It reminds us to stay far enough from animals not to disturb their natural patterns of behavior, and to be especially thoughtful of their need for space during seasons when they are mating, nesting, raising young, and enduring winter. As observers, we can extend that level of respect to the rest of the environment, too, acting in ways that leave the areas we visit, and their inhabitants, in the same condition when we depart as when we arrived.

Being a Good Observer

Drop a pebble into a pool of water and notice how the ripples run out in circles, one outside the next. A skilled observer's line of sight is similar to those rings of ripples. First, scan the area a few feet to the front and sides of you. Sweep your eyes along, taking in the whole scene rather than focusing on just one or two things.

Then sweep your eyes to take in the next line of "ripples"—an arc about 20 feet away. Look out a little farther and do the same thing. With practice, you can scan a wide area quickly. Animals, plants, tracks, and curious geologic phenomena will seem to pop out of the background. You'll also have a sense of the area as a whole, rather than seeing just a few highlights.

Extending Your Range

An eagle can see much better than you can, even if you have 20/20 eyesight. While our senses are not as acute as those of many animals, we do have the power to expand our range with mechanical aids, and to enhance our ability to capture experiences with cameras, pens, brushes, and paper. We also can extend our observational abilities by going out early in the morning and in the evening, on stormy afternoons and moonlit nights—every season and every hour of the day presents different aspects of nature.

Binoculars and Magnifying Glasses

Binoculars allow you to study wildlife without approaching too closely, and to bring into view details too small to be seen by the naked eye. They can be invaluable for watching birds and other animals. A magnifying glass is ideal for examining plants, insects, and the details of soils and stones.

Most binoculars are marked with an equation—7 × 35, for instance. The first number represents the magnifying power of the binoculars; in this case, an object will appear seven times larger than normal. The second number indicates the diameter of a binoculars' larger lenses, measured in millimeters. Binoculars with higher numbers will capture a wider range of vision in more detail, but also might be heavier and more difficult to hold steady. Binoculars also vary greatly in the amount of light they capture, and thus the brightness of the image.

Photography

Photographing flowers, animals, and landscapes provides a memorable means for you to record high points of your adventures and to share your discoveries with others. Any reliable camera can provide the means for you to begin capturing nature on film. As you become adept at the basics, the addition of telephoto and close-up lenses can augment your photographic range. Digital cameras and computerized image-management programs offer a variety of ways to gather and present your images, all without the cost of film.

Drawing

Robert S. S. Baden-Powell, Daniel Carter Beard, and Ernest Thompson Seton—individuals who played key roles in establishing the Scouting movement—shared a common passion for sketching outdoor scenes. Each carried sketchbooks and pencils on adventures and filled page after page with pictures of wild animals, plants, and backcountry life.

You don't have to be a great artist to enjoy drawing what you see. Examining plants, animals, and landscapes with an eye toward capturing them on paper can give you fresh perceptions of nature, and trigger a special relationship with the subjects of your art.

Baden-Powell found great joy in sketching outdoor scenes.

Journals

During their three-year journey across the American West in the early 1800s, the explorers Meriwether Lewis and William Clark wrote daily in their journals. They noted their locations, the vegetation and wildlife they saw, and accounts of their activities and those of others in their expedition. To this day, their journals are invaluable records of one of the great American adventures.

Try keeping a journal during your own trips, and you might discover the same pleasure and personal value in writing as did Lewis and Clark. A simple notebook is all you need—just write something every day you are in the back-country. Keep a log of animals and plants you see, make notes about the weather, and write descriptions of other natural phenomena that catch your attention. Your skill as a keeper of journals will grow, and you will have a record that years from now will remind you of some of your favorite journeys.

Becoming an expert tracker takes patience and practice. The more time you spend at it, the easier it will be for you to decipher signs left by wildlife, and the more surely you can figure out behavior patterns and activities of animals you are following.

Tracking Animals

Every animal traveling on land leaves tracks where it passed. Following those tracks can teach you much about what an animal eats, where it sleeps, and its daily habits. With luck, your tracking skill might lead you to the creature itself.

Tracking is detective work, the solving of mysteries. Why is that twig broken? Did an animal rooting for grubs turn over those stones? What made these scratches on the trunk of a tree? One by one, clues can lead you along the route traveled by an animal and deeper into its life. Are you able to guess where it is headed? Can you find a spot where it might have slept? Did it leave any droppings? Is there evidence of what it has been eating?

You have to find some tracks before you can follow them. Winter snows hold a surprising number of tracks. During other seasons, try the soft soil near ponds and streams. In dry country, scan the dust for prints and look for pebbles and rocks that have been disturbed.

Study a Single Track

Closely examine the shape of a track you wish to follow. Measuring and sketching it can help you find it later even if it becomes mixed in with other tracks.

Wolf tracks in sand

Track Early or Late

Tracking can be easiest early in the morning and late in the day when shadows cast in the prints make them stand out more than when the sun is directly overhead. Sharply defined tracks probably were left more recently than those with eroded edges.

Look for More Than Just the Prints

Bent or matted grass, broken twigs, stripped bark, and displaced pebbles might help you see an animal's path. Watch for burrows, caves, insect mounds, and nests.

Droppings, known as scat, can give evidence of an animal's diet. Break scat apart with a stick. Hulls of seeds, skins of berries, and bits of leaves suggest the animal is an *herbivore*—an animal that eats only plants. Small bones, fur, and feathers might appear in the scat of *carnivores*—animals that feed on other animals. Mixed scat indicates an *omnivore*—a species whose diet includes both animal and plant material. Scat tends to dry from the outside in. If it is completely dry, you know the animal passed by some time ago. Moist scat is much fresher; the animal might be near.

Beaver gnawings on a tree is one obvious sign of an animal habitat.

Imagine Yourself in the Place of the Animal

Should you lose the line of footprints you are following, ask yourself where you would go if you were the animal, then look in that direction. Mark the last print with a stick and explore all around it until you again pick up the animal's trail.

Notice Landmarks

Tracking can be an absorbing activity, but don't become so interested that you get lost. Be alert to your surroundings, noticing and remembering landmarks that will guide you back to your starting point.

Collect Tracks

Perhaps you've heard the old saying, "Take only photographs, leave only footprints." By making plaster casts, you can bring home the footprints, too.

When you find a track you want to preserve, mix up some plaster of paris. (Plaster of paris is available at pharmacies. Container labels will have mixing instructions.) Turn a cardboard strip into a collar by notching the ends together. Place the collar around the track and pour in the mix. Let it harden—10 to 15 minutes in warm weather—then lift the cast and brush off the dirt. On the back of the cast, write the date, the location where you found the track, and the identity of the animal that made it.

You can also cast plaster molds of tracks in the snow. In addition to plaster of paris, you'll need a mist bottle such as those used with glass cleaner. Spray the track with a fine mist of water and wait a few moments while it freezes. Mix the plaster using cold water (warm plaster will melt the print). Put a collar around the track and pour in the plaster. Give it plenty of time to harden.

By themselves, casts of prints are fine souvenirs of your adventures. You can also press them into damp sand to recreate the original prints.

Casting a mold is a way to bring home a souvenir of a track you found.

"Something, I think, also [could] be done toward developing the boy's mind by increasing his powers of observation, and teaching him to notice details."

—Robert S. S. Baden-Powell (1857–1941), founder of the worldwide Scouting movement

Though tracking wildlife requires movement on your part, perhaps the best way to observe animals is not to travel at all. You are likely to see more in an hour of sitting quietly than during a full day of hiking.

Observing Wildlife

Humans traveling in the backcountry usually create enough disturbance to send wildlife scurrying for cover, but if you are motionless and silent, many animals will have difficulty detecting your presence. Use this to your advantage by finding a place to sit comfortably. Hide in the brush, or climb into a tree and wait to see what animals pass nearby. Crouch behind a snowdrift, at the edge of a meadow, or beside a game trail. Position yourself downwind from the likely locations of wildlife so that your scent doesn't give you away. Before long, animals will resume their normal activities and come into your field of view.

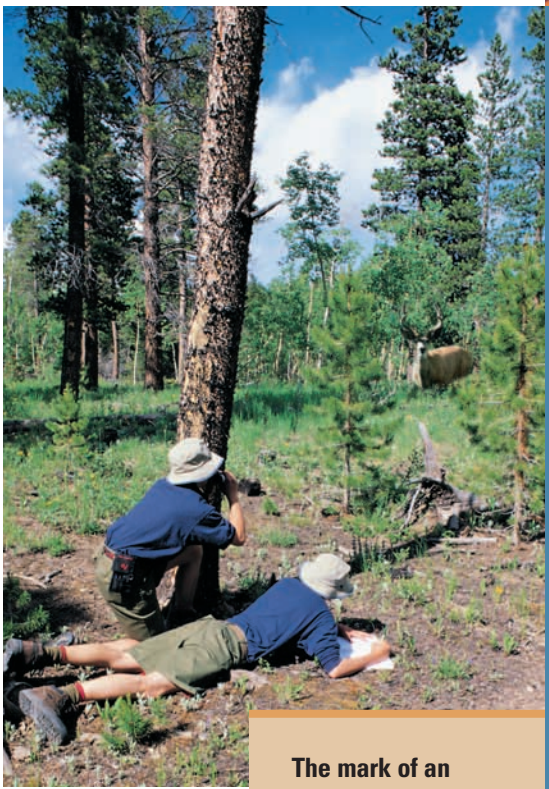
Sunrise and dusk often are the best times to observe animals, when they can be more active than during the middle of the day. A great many animals are active at night. Under a full or partial moon, you are likely to discover lots of wildlife activity, though your observations might lean more toward sounds than sights.

Attracting Animals

Blow on a duck call and you might bring a circling flock of birds near your hiding place. Make a kissing sound against the back of your hand and deer might come to investigate. Whistle softly and a running rabbit might stop in its tracks, while a shrill whistle in high mountain country can bring marmots out of their burrows to see what's going on.

Stalking Wildlife

Stalking wild animals is a skill as old as humankind. For eons, it was a means of getting close enough to animals to increase hunting success. Today, stalking can be a way to observe their habits and to take photographs and make sketches. Stalking also can be a demanding discipline that depends on your ability to use all of your senses, on your understanding of the animals you are observing, and on your willingness to practice patience.



You might, for example, see a deer grazing in a meadow. Although the deer is busy eating, it raises its head now and then to sniff the air, listen, and glance around for signs of danger.

Study the landscape and decide how you might slip closer to the animal. Are there folds in the terrain where you can hide, or trees and brush that will conceal your presence as you ease toward the meadow? What is the wind direction? If a breeze is blowing toward the deer, it can pick up your scent long before it sees you. Is the ground covered with dry leaves that will crunch beneath your footsteps, or with soft grass that will muffle the sound of your approach? Is the deer standing still or in motion? Will mist or fog help conceal your presence and dampen noises? Are there other animals or people in the vicinity that might startle the deer before you get close?

The mark of an expert stalker is the ability to reach a point where animals can be observed, and then to leave so quietly that the animals are never aware you were there.

As you stalk toward the deer, remember that while its senses are keen, it has trouble seeing things that don't move. Freeze whenever the deer lifts its head, and hold still until it looks away. Stay in shadows as much as you can. When you reach an observation spot with a clear view of the animal, enjoy watching for as long as you want, then withdraw as quietly and invisibly as you approached. Always keep enough distance between yourself and wildlife so that you aren't disturbing their activities, causing them anxiety, or blocking their access to sources of food, water, or critical habitat.

Watching Birds

As you observe birds, the six S's—size, shape, shadings, song, sweep, and surroundings—offer a means for you to gather clues that can lead to a bird's identification. Even if you aren't interested in finding out its name, noticing the S's will solve some of the mysteries about a bird.

Size

Hummingbirds are just a few inches long and weigh only ounces. A turkey vulture weighs several pounds and has a wing span of 3 feet or more. Compare the size of a bird you see with the sizes of birds you know. Is the new one larger than a sparrow? About the same size as a robin? Smaller than a crow? A bird's size might affect its methods of gathering food, making its nests, and avoiding predators.

Hummingbird

Shape

Notice the shapes of birds and try to guess how their physical features play into their abilities to adapt to their environments. The great wings and powerful talons of eagles, hawks, and other raptors allow them to drift overhead and then to snag their prey and lift it into the sky. The long, slender legs of herons and many other shorebirds enable them to wade in waters where they can feed on small fish. Beaks are clues to the diets of birds, capable of tasks ranging from cracking small seeds or drilling holes in wood to sipping flower nectar or catching insects on the wing.

Shadings

Bright feathers help many birds attract mates. For others, drab colors act as lifesaving camouflage. The ptarmigan is a good example. Its brown feathers hide it during summers in mountain forests. When winter comes, the ptarmigan's feathers become as white as the snow.

Ptarmigan

Goliath heron

Song

Birds use their songs to warn of danger, mark their territories, and find mates. When you know the songs of birds, you can identify them even without seeing them.

Sweep

"Sweep" refers to the movements a bird makes. Some hop or scurry across the ground. Others flit from tree to tree. Soaring birds can catch updrafts of wind and hover without flapping their wings. Some birds dive into bodies of water in pursuit of prey. Close observation of the sweep of birds can lead to a greater understanding of how each has adapted to its surroundings.

Surroundings

Like all animals, birds have certain habitat needs. They must find food, cover, water, protection from predators, and places to mate and raise their young. The first five S's (size, shape, shadings, song, and sweep) are ways that birds have adapted to their surroundings.

Great blue herons during their courtship ritual

Observing Plants

Vegetation is so much a part of our outdoor experiences that we may hardly notice it all around us. Noticing, though, is what observing nature is all about, and when it comes to seeing plants, there is enough of interest to keep a careful observer occupied for a lifetime.

The chapter titled "Plants" will discuss specific means of examining and identifying vegetation. More general observation can help you unravel some of the ways in which plants are intertwined with animals, terrain, and other aspects of an ecosystem.

Notice, for example, the sizes and shapes of the trees, and how close together they are growing. Pick a single tree and examine the color of the leaves or needles. Smell the bark and feel its texture. Have birds built nests in the branches? Has a woodpecker in search of a meal drilled holes in the trunk? Have deer rubbed their antlers against the bark, or have hungry elk standing on drifts of snow nibbled the low-hanging twigs? Is there evidence of fire, disease, or strong winds? Study the network of fine lines crisscrossing the surface of a leaf. Search the ground for fruit, seed pods, or nuts, and break one open. If you have a plant identification book, find a description of the tree and read about its uses, range, longevity, and special characteristics.

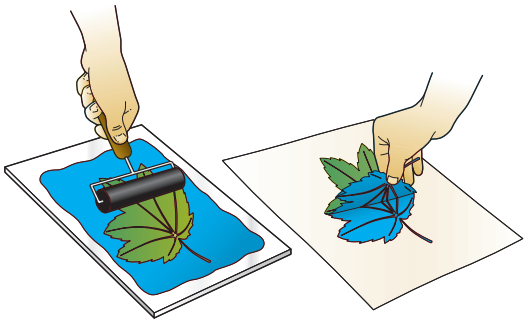
Trees, grasses, flowers, and other forms of vegetation serve as living habitats for all kinds of life. The following questions can help you begin your exploration of a plant and the ways in which it is woven into its ecosystem.

1. ***How is it similar to and different from nearby plants?***
2. ***How are the leaves or needles shaped?***
3. ***Does it bear flowers or fruiting bodies?***
4. ***What kind of soil is it growing in? Sandy, wet, dry, gravel, black dirt?***
5. ***Who is visiting the plant? Do any creatures use it for food or as a home?***
6. ***How is the environment influencing the plant? (For example, is the plant growing in sunshine or shade?)***
7. ***How is the plant affecting the environment around it?***

Pressing Leaves

When you have leaves you would like to preserve, put each one between two sheets of paper, lay the sheets on a board or other flat surface, then place heavy books or some other flat weight on top. Give the leaves several days to flatten and dry. Mount them in a scrapbook along with the details of where and when you found them, the identity of each plant, and any other information you have learned about each plant's natural history.

Making Leaf Ink Prints



Use a rubber roller to spread a dab of printer's ink on a glass plate. Place a leaf on the glass with the veined side against the ink. Run the roller over the leaf several times, then lay the leaf, inked side down, on a clean sheet of paper. Cover the leaf with a piece of newspaper and run the roller over it to make a print. After the ink dries, arrange the pages in a scrapbook.

Observing the Earth (and Its Neighborhood)

All of nature is interesting, all its parts are connected with all the others, and trying to make sense of it is tremendously important. The following chapters in this book provide guidance to help you explore geology, meteorology, botany, biology, and astronomy. In every case, the key to understanding is simply to begin looking.

"Anything will give up its secrets if you love it enough."

—George Washington Carver
(American botanist, agricultural chemist, and educator)