

---

## Lessons from Nature

# Tracks to a Full Stomach

Bonita Ford

**W**HEN I WENT on my first edible weed walk about ten years ago, I found myself delighted and a bit mystified. I wondered how I could possibly identify these plants with any certainty on my own. A few years later, as I picked lambsquarters (*Chenopodium album*) for dinner, a friend asked me how I knew what it was. I pointed out the shape of the leaves, the dusty layer on the leaf surfaces, and the flower cluster.

My local edible wilds teacher, Martha Webber, (1) pointed out that in plant identification, recognising the reproductive structures is essential. For example, all members of the mustard family (Brassicaceae or Cruciferae) have four petals and six stamens, of which four are long and two are short; the flowers may be white, yellow, or mauve.

It's about pattern recognition. We can learn the details mentally, and at some point, we recognise the pattern even before we consciously register all the details. I can look at an ostrich fern and know that it's an ostrich fern (*Matteuccia struthiopteris*). If you asked me how I know, it would take me a few more seconds to articulate it. Ostrich ferns have a groove along the stem (shaped similarly to a celery stalk), the fiddleheads have papery sheaths, and the unbranched fronds come up from the ground in a vase-like shape; the shorter fertile fronds remain visible in the winter.

---

## For me, it was like learning to read for the first time.

---

On my first walk in the woods around Martha's home, I remember thinking "She's so lucky to have so many wild edibles in her woods." Then I realised she had planted them there. Over the years, when she found an abundance of native or naturalised, edible and useful plants in other forests, she would bring a few to transplant into her woods. Dave Jacke calls this pattern "forest gardens in the woods." (2) By observing healthy ecosystems in our bioregion, we can learn what thrives together in conditions specific to our area. We can copy a page from Mother Nature's book, creating more abundance and resilience in the gardens we design.

In the last year, I've had a few opportunities to learn with a local bushcraft and nature interpretation skills teacher, Chad Clifford. (3) During a winter weekend course, we spent most of one day walking in the woods, stopping frequently to investigate animal tracks in the snow. From the clear print, gait, and the measurements of the tracks, we could identify many of the animals.



*Ostrich ferns in the hand! Nature is abundant and what's more fun than food!*

Knowing these patterns helped us deduce the type of animal; details such as seeing a claw mark, or the proximity of the tracks to water, helped us to verify what we'd found.

I realised that animal tracks are like a snapshot in time; they give valuable pieces of the story of the landscape. In a wetland, we found a few tracks frozen in the ice. Although not very clear, they still gave us an idea of the type of animal, the direction it had been walking and a rough sense of when this had occurred. Earlier in the week, we'd had a warm spell, followed by normal cold weather. It appeared that during the warmer weather, a wolf had walked along the soft ice; when the ice hardened again, its tracks were recorded. Understanding these tracks, I could orient the pattern in both space and time.

Along our path, we found clear tracks that were starting to fill in with the falling snow, meaning that the animal had walked by several minutes earlier. We also saw clear tracks with no fresh snow in them; the animal was only a few steps ahead of us! With other tracks, which had partly melted and melded with the surrounding snow, after scooping away the fresh snow on top and by feeling with our fingers, we could sometimes distinguish the toes or the pad of a foot. And with some much older tracks, we could see slight indentations, or raised areas, or darkened areas in the snow and ice.

For me, it was like learning to read for the first time. Similar to knowing edible wilds, animal tracks were another language, which opened up another world. I'd seen plenty of tracks before. Now, I could look at them and begin to make some sense of the patterns I saw. As we learn to know nature more intimately, our interactions and observations can teach us about the world around us, including the animals, plants and weather conditions.



*Sitting in the lean-to, learning about starting fires at Cliffland. From left to right: Chad Clifford, Laurie Lynn Clark, Louis Laframboise, Alister Augé, and Brittany Boychuck.*

### **Microclimates, snow, wind, and shelter**

A snowy landscape offers a wonderful opportunity to notice microclimates, wind patterns, and edges. Where does the snow melt first and last, and what can that tell us about the sun and wind exposure, the landform, and other conditions? Where does the snow drift and build up, and what can that tell us about the wind?

One day, at a friend's place, I noticed large snow drifts along one side of a fence in an open field; I could imagine the direction the wind had been blowing and how other materials might accumulate at that edge. On a mild winter's day, I noticed areas at the back end of our yard and in our neighbours' yards where the snow had melted, while the rest of the yard was still covered in several inches of snow. As I looked closer, it seemed that these areas did not share any commonality in their orientation to the sun, their exposure to the wind, their slope, or their proximity to warm buildings or other edges. What they had in common was their proximity to large trees. It appeared that less snow had accumulated where there was the most tree cover. On another winter's day, which followed a couple days of thaw, a solitary patch of ice indicated where some snowmelt had pooled and remained. It confirmed that this was indeed a low spot and one of the most compacted areas of the yard. The landscape offers clues and invites us to notice. When we find something interesting or unusual, we can be curious, ask questions, and follow the trail.

Learning to build a simple shelter also teaches us to look around. What are the conditions? What resources are available? What is needed? With primitive living skills and permaculture design, there is no one "right" or "best" solution; it depends on the specific conditions with which we are working. When building a shelter, Tom Brown Jr. recommends picking a well-drained place with protection from the weather and natural hazards, offering a southern exposure, an entryway facing east, and an abundance of materials. (4) During our weekend with Chad, the snow was extremely compact, almost like ice, and not ideal for building a quince (a dug-out snow mound). So we found an area where there

was plenty of fallen wood for a lean-to.

We began searching for a small spot for the shelter. Chad pointed out the direction of the prevailing wind. He recommended that we not orient the lean-to perpendicular to the wind, because the eddies downwind of the shelter would blow smoke from the fire back into it. We noticed a rock outcrop that offered some protection from the wind and chose a clear spot near it. Chad also pointed out a slightly concave area nearby and reminded us, in rainy seasons, not to build shelters in low spots where water would accumulate.

Our lean-to shelter was simple and multifunctional. Vertical poles were placed side-by-side leaning against a cross-bar to create a sloped surface which acted as a wall and roof; this offered shelter from the wind and rain. The bed, made of a few larger poles tied together and covered with saplings and conifer branches, offered a spot to lie down or sit off the cold ground. We built a fire barely a couple of feet from the side of the bed, which could be used for cooking and staying warm; the back of the shelter also acted as a heat reflector. By taking the time to observe, recognising some basic patterns, and learning a few simple techniques, we created an effective design with the elements nature provided. These simple exercises in earth skills improve our ability to observe and interact with skill and understanding.

---

**With primitive living skills and permaculture design, there is no one "right" or "best" solution.**

---

### **Active and passive observation**

I'm quite intrigued by observation. I've been practicing and teaching both permaculture and Nonviolent Communication for several years, and observation was the first area of overlap I discovered in these two approaches. In observation, we notice and gather information with our senses, free of interpretation and evaluation. To say "the elderberry plant needs nitrogen" is an interpretation, whereas "most of the leaves on the elderberry plant are yellow" is an observation.

We can observe actively and passively. We can walk on the land and actively look for information related to a specific theme. We can observe water by looking for pools of water after rain events, noticing plants that indicate a preference for wetter conditions, and feeling for humidity in the soil. We can also walk and simply be open to receiving information, insights, and inspiration. Dave Jacke describes the observation process in detail. He calls these two forms thematic observation and undirected observation respectively. (5)

By engaging our senses and cultivating more body awareness, we have access to more details and nuances. To know the look

and feel of healthy soil, or the subtle feel of wood or cattail fluff that is dry enough to make good tinder, comes only from lived experience.

During our permaculture design course, we sat and lay down under a tree to talk about the functions of trees. I led the group through an exploration from the roots up through the leaves and beyond: the catching and cycling of water, the conversion of sunlight and gases into sugars and biomass, the building of soil. We could actively look at the patterns in the branches and bark,

---

## ... "deep observation and deep interaction" ... seems to arise naturally as we cultivate a relationship...

---

as well as all the edges that the canopy offered. We were also bathed in dappled light and the sounds of the wind in the leaves. Being under a tree offered a change in perspective and rhythm. It brought an experiential quality to our learning. This space allowed us to look, listen, touch, notice, and learn with a fuller sense of connection.

Years ago, before setting out on a vision quest, our guide taught us what he called a "shamanic gaze," which Chad calls wide-angled vision. We can practice widening our vision to include our peripheral vision, unfocussing the eyes to softly include everything in our field of vision. I would describe this as an open and receptive gaze, as compared to an active or piercing gaze. Being in the woods with this gaze allows us to receive a wider array of information and to notice things out of the corners of our eyes: a flicker of movement, a hint of colour, or a particular shape or pattern.

Along with a receptive gaze, we can practice getting grounded by feeling the weight of our bodies in our feet, letting our shoulders relax with gravity, and even imagining roots from our feet connecting us with the Earth. Starhawk describes the use of grounding and coming into our senses to help us become more fully present and connected. (6)

### **Relationship with place**

In my experience, the richness of observation emerges as we frequent a place. We can visit a place intentionally, to sit quietly, write or sketch; or we can simply walk the same path twice a day to go feed the chickens. There is something that I call "deep observation and deep interaction," which seems to arise naturally as we cultivate a relationship with the plants, the animals, the land, and the place.

Walking with land steward Howard Clifford, (7) we could appreciate the depth of his connection to the land

where his family had lived for over 30 years (a few years ago, the Clifford family donated 1,200 acres of this land under a conservation easement to a local land trust conservancy). He seemed to have his finger on the pulse of beaver activity through the years. He pointed out an area where they had built a dam and flooded several years ago. He pointed out where the beavers were active now. While walking in the forest, I noticed an edge consisting of mainly coniferous trees on one side and deciduous trees on the other. I asked Howard about it. He explained that it shows where the beavers have been. As they tend to fell the deciduous trees and leave the conifers, we can see how far they got in an area. Once again, patterns can tell us stories of what's happened in a place, if we have the awareness to notice and the understanding to interpret them.

My partner, Sébastien, and I practice and teach permaculture together. One of the places we frequent is our garden; we like being there and noticing the changes through the seasons. We have three general modes of interaction and observation.

The first is our "everyday work mode." We have our "zone 1" path, which we walk at least twice a day for chores. For some people, this kind of routine includes feeding animals and taking out compost. When we take out the compost, we notice things along the path. We especially notice changes from day to day. "Something dug up that bed this morning," or "that plant is looking particularly floppy today."

## OCCIDENTAL ARTS & ECOLOGY CENTER

### PERMACULTURE AND COMMUNITIES COURSES

**Permaculture Design Course**  
Certificate-Granting, Two-Week Course  
March 2-15 • July 13-26  
September 21-October 4

**Edible Food Forests:  
Designing and Cultivating  
Your Edible Forest Garden**  
August 2-4 (tentative)

**Starting and Sustaining  
Intentional Communities**  
April 15-19 • November 4-8

**Facilitation for Group Decision Making**  
August 23-25

Please see [www.oaec.org](http://www.oaec.org) for costs and all details.  
All Courses are Residential. Course Fee Includes all Lodging and Meals.

15290 Coleman Valley Road Occidental, California 95465  
oaec@oaec.org • [www.oaec.org](http://www.oaec.org) • 707.874.1557 x 101

We also like to go for little walks in our garden. This is our “exploring mode.” When we wander, we venture into our “zones 2 and 3,” the places we may go once a day or only a few times a week. Sometimes we want to check on things. “How is that patch of lettuce we recently seeded?” or “Is that serviceberry growing back after being well-pruned by the wild rabbits?” At other times, we like to walk and be open to whatever we notice. “There’s much less wind here than elsewhere.”

When we have time or when we make time for it, we like to relax in the garden. This third mode is our “being mode.” Especially in the Spring and Fall, I love to lie in the warm, sheltered microclimate outside our back door and soak up the sun. Sébastien likes to sit under the crabapple tree. It’s a shady spot and offers a great vantage point to see a lot of the garden. Sometimes I close my eyes and simply “be with” the garden. I like to connect with the essence of what makes the place alive and beautiful. When I think of the lawn that has now become straw-mulched veggie beds, sheet-mulched paths and guilded patches of edible and useful perennials, I can imagine the land smiling and celebrating! I believe it is this third mode of quiet being that helps us deepen our relationship with a place and allows “deep observations and interactions” to emerge.

In designing our small food forest, working, exploring and being were all part of the process. We spent a year and a half observing the landscape and planting our annual gardens, before starting on the food forest. In the winter, we made paths in the snow to get a sense of the scale and flows; due to limited space, we had an idea of the number and location of the trees we could plant. In the spring, I walked our imagined paths again and again, until I found paths that “felt good” to walk. We wanted to create harmony and flow, while also being efficient in transporting materials.

We chose our species based on their functions, size, growth habit, light requirements, juglone-tolerance (there are two mature black walnuts at the edge of our food forest), and availability at nurseries (which is a real constraint in Canada, given the cold climate and the border that has to be crossed if shipping from the US).



The edge of a beaver dam, showing the frozen wetland (on right side) at Cliffland.

When we finally brought the young trees and shrubs home, we put them in the spots where we intended to plant them. I held each plant, stood quietly, and listened inwardly. In the same way that some paths “felt good” to walk and others did not seem so harmonious, this “sense of harmony” became another factor in the placement of the plants. Through this process, we tweaked the placements, switching one shrub for another. Similarly, with the herbaceous and ground cover layers in the guilds around the main plants, in addition to size and light, I included this sense of harmony. By being receptive and listening deeply, I was interacting and designing in a more subtle way.

---

## ...this “sense of harmony” became another factor in the placement of the plants.

---

In our designs, we can apply a multitude of lessons from nature. When we wander in our gardens or step into the woods, we are invited to observe and interact. What can we learn from the animals outside our homes, or the plants along the paths we frequent? What do we notice with our five senses? What patterns do we recognise and what can they tell us? Mother Nature offers us an abundance and diversity of examples and lessons. As we deepen our relationships with the places we inhabit, we have only to be present with openness, wonder, and curiosity to learn.  $\Delta$  Bonita Ford is co-founder of the Permaculture Institute of Eastern Ontario and Transition Perth. Her speciality is permaculture design for organisations, businesses, and personal lifestyles. In her courses and coaching, she applies permaculture, Nonviolent Communication, Reiki, as well as Earth- and body-centred practices. She has led workshops worldwide for over nine years. To learn more about Bonita and her work, visit: [www.eonpermaculture.ca](http://www.eonpermaculture.ca).

### References

1. Webber, Martha. <http://www.dandelionjam.com/>
2. Jacke, Dave and Eric Toensmeier. *Edible Forest Gardens, Volume 2: Ecological Design and Practice for Temperate-Climate Permaculture*. White River Junction, VT: Chelsea Green Publishing Company, 2005, pp 89-90.
3. Clifford, Chad. <http://www.wildernessrhythms.com/>
4. Brown, Tom Jr. with Brandt Morgan. *Town Brown's Field Guide to Wilderness Survival*. New York: Berkeley Books, 1983, pp 24-25.
5. Jacke, Dave and Eric Toensmeier. *Edible Forest Gardens, Volume 2: Ecological Design and Practice for Temperate-Climate Permaculture*. White River Junction, VT: Chelsea Green Publishing Company, 2005, pp 198-220.
6. Starhawk. *The Earth Path: Grounding Your Spirit in the Rhythms of Nature*. New York: Harper Collins, 2004. pp 52-58.
7. Clifford, Howard. <http://www.cliffland.ca/>