Manitoba
Sustainable Development

Western Parks

Spruce Woods Provincial Park

Isputinaw Self-guiding Trail

Introduction

The hillside you are about to climb is the southern wall of the valley carved by the old Assiniboine River. As it cut into the land it created a slope made up of soils with varying amounts of moisture, each producing or supporting its own unique plants. These various moisture-related habitats will become apparent along the trail.

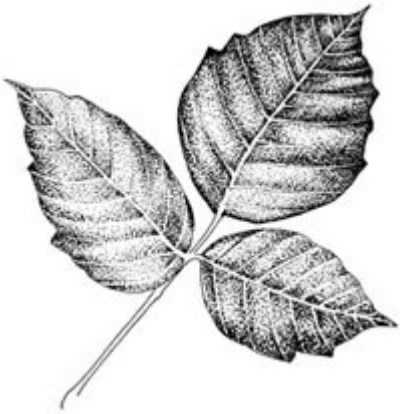
Virginia creeper by J.A. Carson

The sandy loam soils here at the base of the hill are quite damp and are ideal for plants like American elm, trembling aspen and red-osier dogwood.

Just east of here is a small creek fed by springs on the hillside. The creek has created a wet-soil area, which supports bog plants such as marsh marigold and scouring rush.

Higher up along the trail are false Solomon's seal, bur oak and other plants that prefer a drier soil.

Where sunlight penetrates the undergrowth there are brome-grasses, poison ivy and golden Alexanders.



Poison ivy. Avoid touching any part of this plant!

This level is about six metres higher than the bottom of the slope. The soil is well drained and therefore drier. Amuchloved Christmas treat, the hazelnut, is here in a dense growth. These nutritious nuts are an important winter food for squirrels. The small shrubby trees dominate this site; their thick foliage intercepts the sunlight before it can reach the ground thereby limiting plant growth beneath them.

Red Squirrel

Beaked hazelnut

Wild Grape

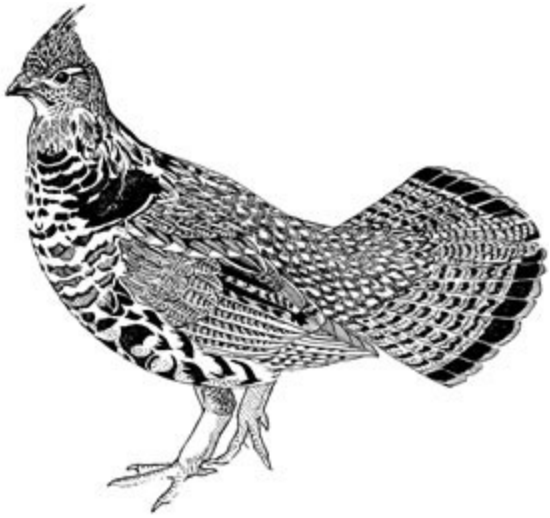
This large hillside bog is fed and maintained by numerous small springs. The wet soil is covered by a carpet of sphagnum moss, slough grasses and scouring rushes. The soil is too wet to support dry-land types of plants such as large trees, for in such moist conditions their root systems would rot. In the centre of the bog is a microclimate where an area of raised drier land supports chokecherry bushes and a single large white spruce.

Recapture in your mind the sounds of moving water. Imagine it seeping into the soil, being sucked up by massive root systems, and passing up trunks to the leaves from where it escapes as water vapour.

The vapour becomes concentrated under the forest's canopy, creating a hot humid environment in which this lush vegetation can flourish. These plants would not survive the parching heat of the grasslands near the top of the slope.

You are at the edge of two different worlds, the dry grasslands and the moist forest. A sharp delineation marks the height of the water table in the valley's wall. From here to the top of the slope, the surface is baked dry by the sun, and therefore, trees have not been able to gain a foothold. Notice how dryness has stunted the bur oaks. Compare them to the tall straight ones below.

Here the wild grape twines around bur oaks and other plants. The vines flourish because of the still-damp soil, the humid air and the shade. The fruits of this vine were used as food by Aboriginal people and made into preserves by early settlers. They are also a favourite of the ruffed grouse and other birds.



Here the creeping juniper, with branches like outspread fingers, clutches the ground. The evergreen bearberry is scattered between these fingers. The shallow outwardfanning roots of the white spruce glean the scarce moisture from the soil. Spruce are the green sentinels above the brown-baked slopes. Yellow-flowered hoary puccoons, white asters and wild prairie roses appear among the parched grasses. These plants have adapted to the hot dry conditions by sending root systems as far down as 2.4 metres to reach water. Creeping juniper grows close to the ground and has needle-like leaves to reduce the area from which moisture can evaporate. Other plants have adapted by having shorter flowering seasons to avoid the drying mid-summer sun. Consequently, these plants of the slope would not survive the moist valley below, and the plants of the valley would die on the hot dry slope.

white spruce branch with cones

Bur oak leaf

Look back along the trail to the steep hillside. This southfacing wall, exposed to direct sunlight most of the day, has become an almost arid environment. Only short grasses and a few shrubs can obtain sufficient moisture there to survive. The north-facing hillside, however, receives less sunlight and its soil retains more moisture. Tall trees and shrubs cover it. The abrupt demarcation of bur oak forest from grassland indicates where the sun's rays hit the slope most often.

Here, at the top of the slope, the land is flat and not as

exposed to direct sunlight as the slope itself. The soil, however, is still dry as indicated by the gnarled, stunted bur oak. The forest cover creates a humid environment by holding and concentrating its own escaping water vapour close to the forest floor. These somewhat moist conditions have allowed other small shrubs to invade the understory.

Note the change in humidity as you move from the grasslands to the bur oak forest and back into the grasslands.

As the trail passes down this slope through the silvery white wolf willow, the features you noticed before will be encountered again, but on a smaller scale.