

# Paddy's Flat Trail

*Welcome to Paddy's Flat. Take this guide with you along the trail. At each numbered trail stop, open the brochure to discover interesting facts about the Elbow Recreation Area.*

## Stop #1 — Rock Stories

The smooth rocks on the ground around you have been shaped by the forces of water and ice. You can tell a good deal about how these rocks got here by examining their shapes and sizes.

If the range of rock sizes varies widely from large boulders to tiny pebbles, the rocks were deposited by glacial ice. If you see only small rocks, usually in the form of gravel, they probably settled out of a slow-moving river.

As you continue your hike, see if you can "read" this area's history from the rocks along the trail.

## Stop #2 — Forest Stories

While the rocks can tell us about the distant past, the trees can reveal the more recent history of this area.

The tree to the left of the numbered post is a white spruce. The tree to the right is a lodgepole pine. Examine these trees so that you will be able to identify these two species as you walk along the trail. Use the following information to understand what has happened to this forest:

(a) If you see...

that almost all the trees are lodgepole pine.

Forest age...

1-40 years

What happened...

This area was either burned or logged within the last 40 years. The lodgepole pine needs plenty of sunlight and will be the first evergreen to repopulate an area.

(b) If you see...

Mixed forest of small spruce and larger lodge-pole pine.

Forest age...

40-75 years

What happened...

The spruce grow well in the shade of the larger pines. Many years have passed since a forest fire or logging operation.

(c) If you see...

Mixed forest with large white spruce and some lodgepole pine.

Forest age...

75-150 years

What happened...

The spruce are shading the pine. New lodgepole pine trees cannot grow because of the shade. More than 75 years have passed since this area was burned or logged.

(e) If you see...

Almost the entire forest is made up of white spruce.

Forest age...

Over 150 years

What happened...

It has been at least 150 years since this area was burned or logged. The spruce have shaded out all the lodgepole. The forest will remain this way until it is logged or burned and then lodge-pole pine will grow here again.

## Stop #3 — Forest Filter

If you reach down and touch the soil, you will see that it is covered with partly decayed leaves, twigs and other plant material. Below this surface layer, an intertwining web of tree, shrub and grass roots can be found. These layers prevent the soil from washing into the river during heavy rains. Instead, water filters through the forest floor and slowly enters the river.

If a fire were to burn through this forest, the top layer of twigs and leaves would be destroyed. This would expose the soil to erosion and the river to sediment pollution from the soil run-off during heavy rains.

After a forest fire it could take centuries for the soil to be restored to what you see around you. In fact, because the cold, dry foothills climate slows down the decay process, it can take a dead tree 250 years to decompose. Thus, if the upper soil layers are lost, new trees may never grow in the area again.

## Stop #4 — Elbow Pathway

For thousands of years the Elbow River and this valley have been a pathway for man and animals. Trails like this have been used by Indians travelling from the foothills into the mountains, by hunters in search of deer and elk, and by cowboys herding cattle to market.

Today this valley is managed so that a variety of commercial and recreational activities can take place here with a minimum of conflict.

As you follow this old trail, think of all the people and animals that have walked this Elbow pathway before you.

## **Stop #5 — Water Provides**

It is no coincidence that the largest trees in this part of the forest are near this small stream. The stream originates at a spring, which seeps from underground layers of gravel higher up the hill. This constant flow of water provides the trees with ample moisture and also offers some protection from forest fires.

The plants growing on this part of the forest floor are different from those found in other areas along the trail. The dark green feathery-looking plants are horsetails, which require a moist environment like this one. In a warmer, more humid period of the earth's history, giant ancestors of the horse-tails grew almost as tall as these large spruce trees.

## **Stop #6 — Fire!**

Forest fires have always been a part of this valley's history. In 1910 a fire started near the Kananaskis Lakes west of here, spread across the mountains and burned through this area. Nine years later another fire started near Canyon Creek about 10 km northwest of here; it burned the new trees that had grown up after the 1910 fire.

Fire detection and fighting techniques have improved since the 1910 fire. In fact, in this area today a fire would probably be under control within a few hours. However, with the right conditions, a forest fire can travel several kilometres within an hour, so please be careful with matches and camp-fires. Help protect this forest and the wildlife living here.

## **Stop #7 — Old Riverbeds**

Thousands of years ago glaciers and their melt-water rivers deposited thick layers of rock and gravel in this valley. These gravel layers filled the valley to approximately the level at which the present Elbow road is found.

When the last glacier receded, the Elbow River cut through the upper layers of gravel. The amount of water flowing from this glacier changed from time to time due to climatic warming and cooling trends. Whenever the climate warmed, more water was released and the gravel deposits were deeply eroded.

These periods of rapid erosion have resulted in the terraced landscape found in this part of the valley. Each sharp drop in elevation between the campground and the Elbow River indicates a more recent riverbed left by the cutting action of the river.

Today the Elbow River is still cutting through these old gravel layers and eventually a new terrace will be added to the valley.

## **Stop #8 — Wildlife**

The vertical scars on the tree in front of the numbered post were made by a bear marking its territory. Black bears, elk,

deer and moose have always been found in the Elbow River area. The numbers of these large animals have varied over the years due to such factors as forest fires and hunting.

After the forest fire in 1919, the new plant growth that covered the charred land attracted large numbers of elk to this part of the foothills. Predators such as wolves and cougars followed the elk into the valley. Today there are fewer elk, and wolves and cougars are rare.

## **Stop #9 — A Soggy Sponge**

In the low area behind the numbered post, water lingers on its way from this hill to the river. This area is like a soggy sponge that soaks up water each spring as the snow melts. Large pools of water such as this one affect the distribution of living things.

Balsam poplar trees and shrubby willows grow well in areas like this, since they require more moisture than other types of woody plants. Notice where the grasses are growing: they occupy small soil mounds in order to stay above the water. Generally, white spruce do not grow in areas this wet, so the presence of this tree species indicates that this area is not wet all summer.

Look for plants that grow in wetlands as you walk along the trail, and then compare these areas with the drier surrounding forest.

## **Stop #10 — Water in Motion**

This river is constantly shifting. The force of the moving water changes the valley through which it flows.

If you look across the river, you can see how the water has cut through the valley floor. This cutting process is still taking place, so eventually more of the rock will be exposed.

The river channel is also changing. As rock and gravel are moved by the force of the water, old pathways are closed and the river must cut new channels.

If you return to Paddy's Flat in the future, look for changes in this river-formed landscape.

## **Stop #11 — The Sands of Time**

Reach down and touch the hard river-worn sandstone forming this ledge. The sand making up this rock was deposited here over 100 million years ago. At that time in the earth's history, this area was a broad, swampy coastal plain. Rivers flowing into this area carried mud and sand that had been eroded from far-off mountain ranges.

Layer upon layer of sand and mud filled the ancient swamp. After millions of years the deeper layers were gradually compressed to form sandstone.

These deep layers of sandstone were eventually uncovered by glaciers and the moving water of the Elbow River.

## **Stop #12 — The Elbow River's Water**

Most of the water flowing past you will eventually end up in Hudson Bay. Some of the water will be diverted and used for irrigation, power production, industry and drinking.

The hundreds of small streams flowing from the mountains and foothills of the Elbow River area collect the rain and melting snow that fall on this watershed. The forest covering this area slows the movement of water from the land into the streams, preventing floods and erosion.

You can see that protecting the Elbow's forest is an important part of protecting the Elbow's water resource.