

# *There be Dragons here!:* A Kentville Ravine Adventure



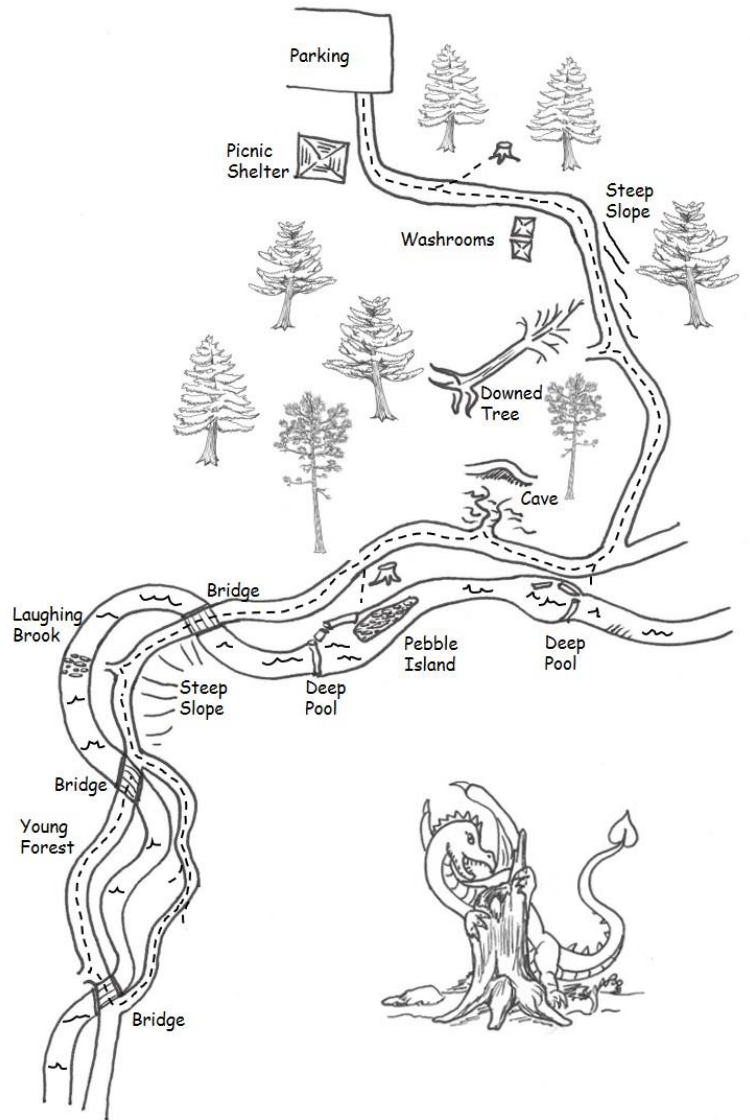
**Eastern Hemlock**



**Red Pine**



**White Pine**



**Distance:** 2 km return

**Approx. Time:** 1 hr 30 min

**Trail Info:** The Kentville Ravine is a beautiful old-growth Hemlock and Pine forest, one of the few that remains in eastern Canada. The trail runs along the Elderkin Brook between the Kentville and New Minas boundary. It is a popular spot for walkers, naturalists and biology educators and researchers. This old-growth forest is also accessible via the Kings Transit bus route by getting off at the Agriculture and Agri-food Canada Research Station property in Kentville. A short section of the trail going down to the ravine is steep with no railing. Wear sturdy footwear for steep inclines and walking over roots. It is easy walking along the brook once you are at the bottom of the ravine.

**Directions:** Coming from Halifax on Highway 101 west, take Exit 12 and turn right at the end of the ramp to Highway 1. Go 3km and turn left at the stop-lights heading towards Kentville. Go 300m and turn left onto the Agriculture and Agri-food Canada Research Station driveway to the left, 800m from the lights. Drive up the hill 250m and turn left at the main building, driving past the parking lots for 100m, turn right and go up the hill 200m. At the top of the hill there is a parking lot to the right and park there. Walk up the path and your adventure starts at the picnic shelter.

**Trail Tools:** Bring a daypack with water, snacks, first aid kit and anything else you need. Prepare and gather these tools for each person.

- Pencil and this sheet
- Cardboard Frame Tool (cut out from a cereal box or other cardboard)
- Magnifying lenses (optional)

## Discover the Forest Dragons and their Secrets

This old-growth forest is special because it is full of dragons! Not all forests have dragons, just the very old ones, which are rare these days. Let's find these dragons and the 4 secrets to why they live in this Ravine.

Using the 4 Secrets of Dragon Survival you will learn about along the trail, discover the words that fit into the spaces below, then unscramble the letters in the boxes to de-code the final message from the forest dragons.

### Secret of Survival Clues

Clue # 1: \_ \_ █ \_ \_

Clue # 2: \_ \_ █ \_

Clue # 3: █ \_ \_ \_ \_ \_ \_

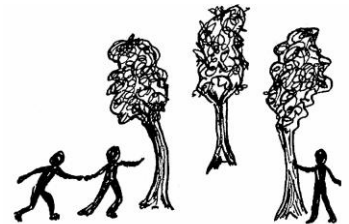
Clue # 4: \_ \_ \_ █ \_ \_

The first thing you need to know about dragons is that they are very shy and come in many different colours, shapes and sizes, from tiny bug size to gigantic tree size. They prefer to share secrets with other forest animals so first we need to act like a creature they know very well, the **Red Squirrel**, and maybe they will show us some signs. See the Red Squirrels chasing and darting in and out of the picnic shelter looking for treats! Let's join in the fun!

### 1. Red Squirrel Tag

⇒ Stand on the trail outside of the picnic shelter.

Red Squirrels love to play tag! They run from tree to tree where they are safe. Be a squirrel by making squirrel noises, "Crrrrrrr uuuu kkkk kuk kuk kuk!" Pick one squirrel to be it and the rest run from tree to tree. The squirrels being chased can only stay at a tree for 5 seconds, which they count out loud, before running to another tree. Play under the trees between the shelter and the washrooms. Play until you all feel squirrely!



*Feisty little **Red Squirrels** are very common in the mixed conifer / deciduous forests of this region. They are mammals in the rodent family and can be very aggressive, scolding and fighting anyone who gets close to their winter food stashes, which they hoard every year in the nooks of trees and under roots. You can even see them chasing off the bigger, yet more docile, grey squirrels when they come near. Red squirrels eat nuts, seeds, conifer buds, berries and mushrooms and I've even seen them skewer mushrooms on branches to dry them for storage. Along the trail see if you can find squirrel discarded seed piles or "middens" which are feeding stations on stumps or logs.*



## 2. Discover Dragon Flakes

- ⇒ Follow the path 200m, walking past the washrooms and down into the ravine. Be careful on the steep slope down. When it levels out at this point, halfway down to the bottom of the ravine, turn right into the clearing with a large downed tree.

These are some big trees, eh? The grey bark ones are either **Hemlock** or **White Pine** and the red bark ones are **Red Pine**. The neat thing about red pine is that the bark flakes off the trunk in neat designs and shapes. Find a large Red Pine Tree; there are 2 nearby. One is right next to the trail at this point and the other is on the edge of the slope just down from the fallen tree. Notice it's red colour and that the bark flakes off as odd, rounded shapes.



- 1) Go to the base of a **Red Pine** tree and pick up the bark flakes on the ground. Can you find one that looks like a dragon?
- 2) What other creatures do these shapes look like?
- 3) Keep your favourite creature shape for later.

## 3. Discover & Make Homes for Mini-Beasts & Dragons

- ⇒ Stay in the same area.

The first step is to find out where the dragons live. Realize that they always share their homes with other forest creatures. Big dragons share with bigger creatures and smaller dragons share with smaller creatures. To help you find mini-beasts and mini-dragon homes, use your magnifying lens.

See all of the dead wood just lying around? Is it really dead with nothing living there?

- 1) Pick a log lying on the ground that has some moss growing on it.
- 2) Get down on your knees to look closely and look for mini-beasts! Do you see where they find shelter on the log?
- 3) Use your magnifying lens to help see the tiny world where these beasts live.

Sometimes the forest dragons need to protect and help the many creatures in the forest find shelters. Do you think the mini-beasts would enjoy a change in scenery? Make creative homes for these little creatures using the dead wood on the ground.

- 4) As you use sticks on the ground to form your houses and shelters, be careful not to disturb the permanent homes already there, especially any containing wasps!
- 5) Have an open house viewing of these new homes! Show your group all the neat features that your home offers its future owners.
- 6) Place your bark creature shape in the house as a guest if you like.

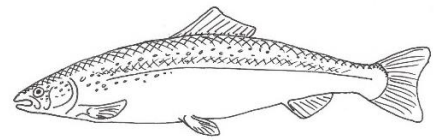
## 4. Surprise the Swimmers

- ⇒ Walk back to the trail and go down the hill 50m to where the trail intersects the Elderkin Brook Trail and go right down the hill another 25m to where the brook has made a pool on the left. Stop on the trail before going to the water.

*Deep pools form where trees have fallen in the brook, stopping water flow and erosion and allowing fast flowing water to plunge over the log and dig a deep hole in the river bed.*

Shhhh! There are quick and shy Brook Trout living here. If you want to see them you need to walk quietly and slowly over to the edge of the water. Deep pools in the brook provide cold water, which are favourite spots for fish. Think of an animal who likes to catch fish, like a racoon or an eagle.

- 1) Practice being that hungry animal as it is about to quietly sneak up on its prey.
- 2) Get low to the ground and sneak over to catch a glimpse of the fish darting around at the bottom of the pool.
- 3) What kind of fish do you think it is?



Dragons need to eat just like all other creatures and **FOOD** is the first survival secret. They do enjoy a few fish to eat and these Brook \_ \_ \_ \_ (Clue # 1) are their favourite.

*Despite the massive structure of this old growth forest, the Ravine is vulnerable to activities on surrounding lands that influence its exposure to wind and water. At present, forest cover on adjacent uplands buffers the steep ravine slope forest from intense winds and heavy rain during extreme storms. Without those buffers, the shallow-rooted ravine trees are easily uprooted when winds are high and runoff saturates soils. Erosion that accompanies such flooding events degrades stream quality for **Brook Trout, Atlantic Salmon** and other water creatures living here.*

## 5. Climb to the Dragon Cave

Across the trail from the deep pool look up to see a natural **Sandstone** shelter carved out of the bank by erosion, or was it by a dragon?

**SHELTER** is the second survival secret and this big dragon \_ \_ \_ \_ (Clue # 2) is a shelter for other creatures as well.

- 1) Carefully, on all four paws, climb up to the cave using the tree roots to help you.
- 2) Touch the cave. What is it like?
- 3) Sit and look out over the trail to get a dragon's eye view of the forest world.
- 4) Draw a "♥" in the sand to thank the forest and the dragons for sharing this special place with you.
- 5) Climb back down using all four paws.

## 6. Meet the Ancient Ones

⇒ Walk 80m down the trail to the big stumps and trees.



Every tree has a dragon guardian that is as old as the tree, so the dragons knows the age and personality of their tree very well. Find out how old the dragons are by discovering how old the trees are:

- 1) Find a big stump or log and count the growth rings to find out how old the tree was when it died. 1 ring represents 1 year of growth.
- 2) Does everyone come up with the same number? Add all of the numbers together and divide by the number of guesses to get an approximate age of the tree.
- 3) Now look at the live trees around you and compare the size to your stump to guess their age.

- 4) Go over to the biggest tree as a group. How many arms does it take to stretch around the tree? Use everyone's arms if you have to!

Did you know that trees shed? Look at all of the large branches on the forest floor. Why do you think it is a good thing for the forest and the creatures that live there that the trees drop branches?

- 5) On this part of the trail, discover the lean-to shelters that others have made. Could you sleep there?

*The Old Hemlock and Pine trees of the Ravine are so special and unusual old in today's world of short rotation forestry. Some of these trees are easily 200 years old if not older. This forest was spared cutting due to its steep slopes and difficulty in getting the wood out. Also, this land was bought by the Canadian government over 100 years ago and now is public land, open to all.*

## EARTHWORKS



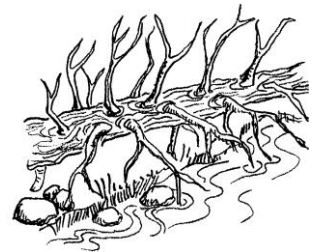
*See all of this dead wood? This is food for the forest and sustains all of its many habitats that contribute to the great diversity of life found here. Whole trees are left here when they fall to create perfect homes and food for the forest creatures. These giant trees shed branches and bark to the forest floor throughout their life which adds carbon to the soil, storing the carbon in the top humus layer and feeding millions of critters living there, including bacteria, fungi and insects. They have an important decomposition role in the food web and feed nutrients back to the tree roots in an elegant Nutrient Cycle.*

## 7. Dragon Scale Skipping Challenge

- ⇒ Walk 10m to where a short path goes to the brook and you see another plunge pool. Hop onto the rocky island in the middle of the brook.

Once you are on Pebble Island, look down at the flat **Shale** rocks and pick one up. These rocks shimmering with rainbow colours are actually Dragon Scales! They shed their scales at certain times of the year, just like a dog sheds it's fur. When Dragons are not looking after the forest they can be found having fun skipping their rainbow scales along the water. Why don't you try skipping scales too!

- 1) Pick a flat scale and holding it level with the ground between your thumb and forefinger flick your wrist forward and send it across the pool. Be sure there is nobody within striking distance on the other side of the pool.
- 2) Take turns with everyone in your group to see who can:
  - a. Make the most skips across the water in one throw
  - b. Hit the log
  - c. Skip over the log



## Earth Steps



Want to help keep the brooks and rivers clean for fish and other wildlife? The products we use in our own homes can make a difference. Use less-harmful chemicals to clean your homes and don't pour or flush these chemicals down the drain. Instead, try biodegradable and more natural products like vinegar and baking soda to clean. By using less harmful products, we stop toxins from leaking out of our septic systems and sewage treatment facilities into precious rivers and brooks.

## 8. Laugh out Loud

⇒ Back on the trail, walk 200m around the corner of a steep slope and follow a short path to the brook on the right.

The water dragons are constantly laughing here in the brook. Everyone spread out about 3m apart. Stand perfectly quiet for 60 seconds. Do you hear them laughing? They love a good nature joke and here are a few to get them laughing even harder. Each of you take turns saying a joke out loud. Do you hear the laughter getting louder?



- Where do tree saplings go to learn? - ElemenTree school
- What is a dragon's favourite day of the week? - Chewsdays
- What's the difference between weather and climate? - You can't weather a tree, but you can climate.
- What did the tree wear to the pool party? - Swimming trunks!
- What does a dragon eat for a snack? - Firecrackers
- What did the beaver say to the tree? - It's been nice gnawing you!
- Why are leaves always involved in risky business? - Because they're always out on a limb.
- Where do yellow birch trees keep their valuables? - In a river bank.
- Did you know that I can cut down a tree just by looking at it? - It's true. I **SAW** it with my own eyes!
- Where do you find a forest with no trees? - On a map.
- Why are dragons good storytellers? - They have long tails.

Do you have any other dragon or nature jokes to share?

Dragons need water to survive and **WATER** is the third survival secret. This section of the brook is

— — — — — — — — — — (Clue # 3) with joy when water tickles the rocks as it flows by.

*The leafy, water-loving and shade-tolerant tree that lives close to the brook is the **Yellow Birch**. Some of these trees are quite old and large. You will notice that it has shiny golden birch bark and its roots are large and strong, allowing it to hold tight to the eroding river bank. You will know it is a yellow birch if you can smell wintergreen (toothpaste) when you scratch a young branch.*

*Other large deciduous trees living close to the brook are **Red Maple**, **Sugar Maple** and **American Beech**. The invasive and non-native **Norway Maple** can be distinguished from the Sugar maple by the white latex that comes out of its leaf stem when picked. Tell the Red Maple from the Sugar Maple by its finely toothed leaves compared to the smoother Sugar Maple leaves. The trunk of the poor American Beech will usually be irregular and full of dimples and holes from an invasive fungal attack.*

## 9. Get Twisted like a Unicorn Horn

⇒ Walk back to the path and walk another 100m a bridge. Just before the bridge, take the path to the left another 100m.

The large trees in the forest don't live forever. Hemlock and Pine trees are prone to tipping over or snapping off during hurricane strength winds. Sometimes when dragons take off flying they create quite a wind with their wings. Some of the tree trunks on the ground that the bark had been stripped off are twisted like a Unicorn Horns. Only the Dragons know for sure why this twisting happens. Why do you think the wood is twisted?

Get Twisted! Test this theory...

- 1) Stand like a Hemlock tree in the forest with your branches and leaves up to the sun.
- 2) Since you want the sun's energy to power your body you stretch and reach towards the sun with all of your might!
- 3) Oh no! One of your big branches breaks off in a hurricane! Drop one of your arms.
- 4) In that same storm you have been tipped over and now lean at an angle.
- 5) You want your good branch up towards the sun again so you twist your body around.
- 6) Keep spinning as year after year, gravity pulls your branches down as you try to send them up to the sun.

Other theories involve genetic mutations in the cells of the tree that cause them to grow in a twisted way. Whatever the reason, it is neat to see this different growth pattern in nature.

## 10. *Paint with Plants*

\*\*\*Walk 15m down the path until you see a small clearing.

Many large trees have fallen here and sunlight can now reach the ground and power the growth of new plants on the forest floor. Plants produce colours in their leaves, flowers and berries. Even decaying old logs and stumps have a nice brown colour. These colours are magic and can help you see the magical world of the dragons!



- 1) Pull out your cardboard frame. This will become your Dragon Finder once it is painted.
- 2) Take a leaf, berry or rotten wood and smear it on the frame. Pick leaves that are abundant and not from small trees that need the few leaves they have to make food. What colours and designs can you make on your frame?
- 3) Once finished colouring, place the frame on a log or stump and tap it with a fallen branch while you say these magic words all together:

**Colours bright and colours dim,  
Dragon secrets are within.  
With these hews, I cannot loose,  
Let the dragon search begin.**



Now you have your dragon finder! Hold it at arm's length with both hands so you can see through it and find dragon shapes and faces everywhere you turn. Look on tree bark and roots and in the branches to start. Can you find:

- A dragon claw
- A dragon foot
- A dragon wing
- A dragon scale
- A dragon head
- Dragon teeth ..... Watch out!

Try to find more dragon signs as you walk along.

## 11. *Get Small in the Fern Forest*

- ⇒ Continue walking along the path 200m to where it comes to the main trail and turn right. Walk 10m along the trail, crossing the bridge and turn to the left.

This ferny little forest is home to tiny dragons and their mini beast friends. To find them you need to get small so shrink down to their size by getting low to the ground. Use a magnifying lens to discover the tiny world within.

- 1) Get low and crawl up to the ferns and peek underneath them. Do you see the brown spots there? What do they look like under the magnifier? These are the spore producing bodies of the fern and one of them is called an **Indusium**.
- 2) Now turn your attention to the ground. Can you find any mini beasts or dragons living here?



## 12. Sing a Bird Song

- ⇒ Back on the trail, continue back towards the beginning about 100m to where there is a lot of vegetation growing on the slope to the left.

*A major wind storm that reached hurricane strength blew this part of the forest down in December of 2010. It is re-generating back to a thick mass of deciduous, broad leaf shrubs and trees like **Raspberry, Blackberry, Cherry, Maple, Poplar, Birch and Ash**. This succession from an old-growth conifer stand of trees to a stand of young deciduous trees is perfect for a diversity of bird species.*

This tangle of greenery is a part of the forest growing back after a wind storm blew the trees down. The birds love the tangle of branches that hide their nests and the abundance of berries that fruiting shrubs and trees provide. How many bird species can you hear?

- 1) Stop and listen quietly for 2 minutes.
- 2) How many different bird songs do you hear? Compare your number with everyone else.



Having a **PLACE** to live and room to grow is the final secret to survival.

The dragons need the old-growth                (Clue # 4) habitat to move around in and get all the things they need to survive.

Wait a minute! What about all of the other living things in the forest? Do they need the same 4 things?

## 13. Solve the Final Secret to Survival

Now you can solve the final survival secret. Go back to the beginning and fill in the 4 secret words that you found along the way. There are 4 shaded letters amidst the clue words. Unscramble these letters to find out the final secret to survival of all creatures in the forest. Place it below.



This one little word is the key to survival. Without people caring about what happens to the forest and the creatures living in it, these habitats are in danger of disappearing. Share what you have learned today and invite others to join the adventure and             (same word) the forest too!

Just as the birds give a song of Thanks for space and room to live in the forest, you can thank the forest and its dragon guardians for being such great hosts to you and your group today. Everyone get in a circle and share one-



by-one what you have been thankful for today on this adventure. Look for dragons as you return down the trail with your dragon finder.

## BEYOND THE ADVENTURE



The Ravine Trail continues on for another 400m, ending in a cascading waterfall over the rocks. The brook can be entered at any point but be sure to wear shoes since there are sharp rocks under foot. For more information about the Ravine visit the Town of Kentville <http://kentville.ca/community/parks-trails/ravine-trail/>.

To see beautiful pictures of the Ravine go to [http://www.paulillsley.com/Kentville\\_Ravine\\_Trail/](http://www.paulillsley.com/Kentville_Ravine_Trail/).

**LEARN MORE:** Accessible wild spaces are becoming increasingly rare as towns place higher value on land for development. It is up to the citizens of towns to let their local governments know that they deserve and demand natural spaces within town limits so that families have an opportunity to get connected to nature. Contact your local municipal government to learn more about what they are doing to increase green space in your area. Learn more about how to combat "Nature Deficit Disorder" by reading Richard Louve's "Last Child in the Woods" and "The Nature Principle".

### MORE ADVENTURES IN KINGS COUNTY

Go to the Kings County for more trail adventures in the Annapolis Valley. <http://www.countyofkings.ca/common/pars/>

### CREDITS:

This document was created by Marina Myra of Wild Roots Nature Education Centre. <https://www.wildrootsnec.com/>. This work was inspired by and adapts material from Earth Adventures in the Halifax Region 3<sup>rd</sup> Edition, by Alan Warner, Janet Barlow, and George Taylor.



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Illustrations by Marina Myra and Lois Bearden.



### FINANCIAL AND IN-KIND SUPPORT:

This Trail Adventure Project was made possible with the generous funding and support of the Blomidon Naturalists Society whose dedication to educating the public and connecting people with the natural world is making a difference in our communities. <http://blomidonnaturalists.ca/>



The Blomidon Naturalists Society recognizes the support of the Province of Nova Scotia. We are pleased to work in partnership with the Department of Communities, Culture and Heritage to develop and promote our cultural resources for all Nova Scotians.



Supported by the Town of Kentville Parks and Recreation



Supported by the Municipality of the County of Kings Recreation Services

