DIG DEEPER

STORY OF THE UNDERSTORY

Why is the forest understory important?

Trees and shrubs growing in the urban forest are sensitive to disturbances. The forest floor and the understory layers are particularly susceptible. How can we help protect and restore these important forest layers?

GUIDING QUESTIONS

- What are the differences between the forest understory and the forest floor?
- What plants and animals live in the understory?
- What are some negative impacts people can have on these layers? How can we prevent this damage?
- How was the forest floor in parks managed in the past? How is it managed now?
- What is "coarse woody debris" and why is it important?
- How do Indigenous harvesting practices ensure sustainability when harvesting plants?
- What do these forest layers look like when they are healthy? What about when they are disturbed?
- Do healthy forests around the world all look alike? Why or why not?
- What are the different stages of forest succession?
- What do you want future forests to look like?
- How is climate change affecting our native understory now? In the future?
- What steps are involved in habitat restoration?

BACKGROUND

Our forests consist of four main layers: emergent layer, canopy, understory and forest floor. The two layers that we see up close and that are the richest in biodiversity are:

- the **understory**, which includes trees, shrubs and herbaceous plants below the canopy, and
- the **forest floor** (below the understory), consisting mainly of vegetative material like leaves, branches, bark and stems in various stages of decomposition. This layer is full of life (particularly invertebrates, fungi, algae, and bacteria).

Historically, urban forest management practices were to more or less "clean up the forest" (see Coarse Woody Debris Management Plan for more details). Tree debris was removed from the forest floor primarily for aesthetics and the idea that improving sight lines meant safer parks.

We now know that this is not conducive to a healthy forest or a safer park. Today, we leave wildlife trees and coarse woody debris in the forest. They help store carbon, provide habitat for plants and animals, and retain moisture.

wildlife tree – a standing dead or dying tree that has high habitat values for wildlife due to its physical attributes, location and relative uniqueness

coarse woody debris – dead and downed wood such as logs, uprooted stumps, large branches and coarse roots, in all stages of decomposition

CURRICULAR CONNECTIONS

Content for students to explore:

Kindergarten: needs and adaptation of local plants and animals
Grade 1: names of local plants and animals, behavioural adaptations
Grade 2: First Peoples use of their knowledge of life cycles, relationships between people and the environment in different communities
Grade 3: biodiversity, the knowledge of local First Peoples of ecosystems
Grade 4: forest biomes, sensing and responding (plants and animals)
Grade 5: First Peoples concepts of interconnectedness in the environment and sustainable practices, the nature of sustainable practices around BC's resources
Grade 7: evolution of organisms, natural selection, survival needs, climate change

Curricular competencies for students to develop:

- Experience and interpret the local environment
- Identify some of the social, ethical, and environment implications
- Communicate ideas, explanations, and processes in a variety of ways
- Express and reflect on a variety of experiences and perspectives of place

ADDITIONAL RESOURCES

City of Surrey *Biodiversity Conservation Strategy*
City of Surrey *Coarse Woody Debris Management Plan*
City of Surrey *Natural Areas Management Plan*

Surrey Parks works together with the community to celebrate nature and protect the environment.

Visit us online to plan your park visits, connect with nearby nature and help your students become stewards of our urban forest.