

Stop #3: Loamy Brunisolic Gray Brown Luvisol with Mormoder humus form.

This soil is situated at the toe slope and its development has been influenced by the original fluvial deposits, more recent downslope movement of colluvium (soil and rock) and the underlying glacial till materials. The upper coarse loamy-skeletal 45 cm layer of the soil is friable to firm and moderately well drained, whereas the fine loamy-skeletal layer below the depth of 45 cm is very firm and imperfectly to poorly drained. This clay enriched layer (Bt) represents the horizon characteristic for Luvisols -- the prevailing soils east from this area. Compared to Stop 1, this soil is imperfectly drained, has moderately deep rooting zone, may have some water surplus during growing season due to inputs from upslope, and may be slightly richer in nitrogen due to higher content of organic matter.

LFH	4 - 0	LFH	Softwood litter (L); partly decomposed,
Bm	0 - 15		non compact matted materials showing mycelia and clusters of droppings (Fa); a thin layer of well decomposed materials (Hd); few fine roots; abrupt, smooth boundary.
Ae	15 - 45		
Bt	45 - 75 cm		

- Bm** Dull yellowish brown; loamy; 30% coarse fragments; weak, medium, subangular, blocky; friable; many fine and medium roots; clear, smooth boundary.
- Ae** Grayish yellow brown; loamy-skeletal; 30% coarse fragments; weak, medium, angular blocky; firm; few fine and medium roots; abrupt smooth boundary.
- Bt** Yellowish brown; loamy-skeletal; 35% coarse fragments; massive; very firm; few medium roots.

Stop #4: Clayey Orthic Luvisol with Hydromoder.

This soil is located at a narrow flat terrain surrounding Gavin Lake. It has developed from the very fine (clayey) lacustrine deposits overlain by down-slope washed materials. The majority of tree roots are confined to the very thick (± 30 cm) well decomposed forest floor materials. The upper 10 cm layer is a mottled eluvial (Ae) horizon which is indicative of a seasonally very high stagnant groundwater table. The 10 to 60 cm layer consists of gleyed (strongly mottled) firm massive clayey horizons. Compared to Stop 1 this soil is very poorly drained with a strongly fluctuating water table. However, from a nutrient perspective, it is considered to be richer due to a large nitrogen capital in the forest floor.

LFH	25 - 0 cm	LFH	Softwood and herbaceous litter (L); partly decomposed non-compact matted materials showing mycelia and clusters of droppings (Fa); a thick layer of well decomposed saturated materials (Hd); abundant fine, medium and coarse roots; abrupt smooth boundary.
Aeg	0 - 10		
Bgf	10 - 30		
Btg	30 - 60		
Cg	80 + cm		

- Aeg** Grayish yellow; common, distinct, strong brown mottles; fine-loamy; medium, coarse, platy; few fine and medium roots, abrupt smooth boundary.
- Bgf** Grayish olive; common prominent bright reddish brown mottles; loamy; massive; firm; abrupt smooth boundary.
- Btg** Grayish olive; common distinct brown mottles; clayey; massive; firm; clear smooth boundary.
- Cg** Olive gray; clayey; massive; firm.

INTRODUCTION

The U.B.C. Alex Fraser Research Forest, a working forest, has an important educational role to play. The soil trail has been developed to allow visitors to see a variety of forest soils within the space of a one km walk and to relate them directly to each other.

This trail demonstrates an amazing variation in soils which have developed close to one another since the last glaciation. The major causes for the variation are differences in soil parent materials and local topography. Foresters are required to have a good understanding of soils and their properties to make the best possible management decisions. Both soils and vegetation on this trail have been disturbed when the original forest burned in a wild fire approximately 50 years ago.

Each soil profile is protected by a sheet to retain moisture and prevent erosion. Please try to avoid working in one area, and replace the sheet after use to extend the useful life of the profile.

To get the most from a visit to the soils trail, objectives for the visit, and items for study should be decided and understood before starting the route.

The Trail is about one km long and follows a circular route. It is advisable to wear strong footwear, as the trail lies within the forest.

By using this trail, you are reducing the pressure on other areas of the forest for soil study.

Please help us keep our forests green and remove any garbage that you have brought with you.

If you require further information please call us at 392-2207 or write to us at: 72 South 7th Avenue, Williams Lake, B.C. V2G 4N5



GAVIN LAKE SOILS TRAIL

This project was made possible by a Green Gold Grant funded by the

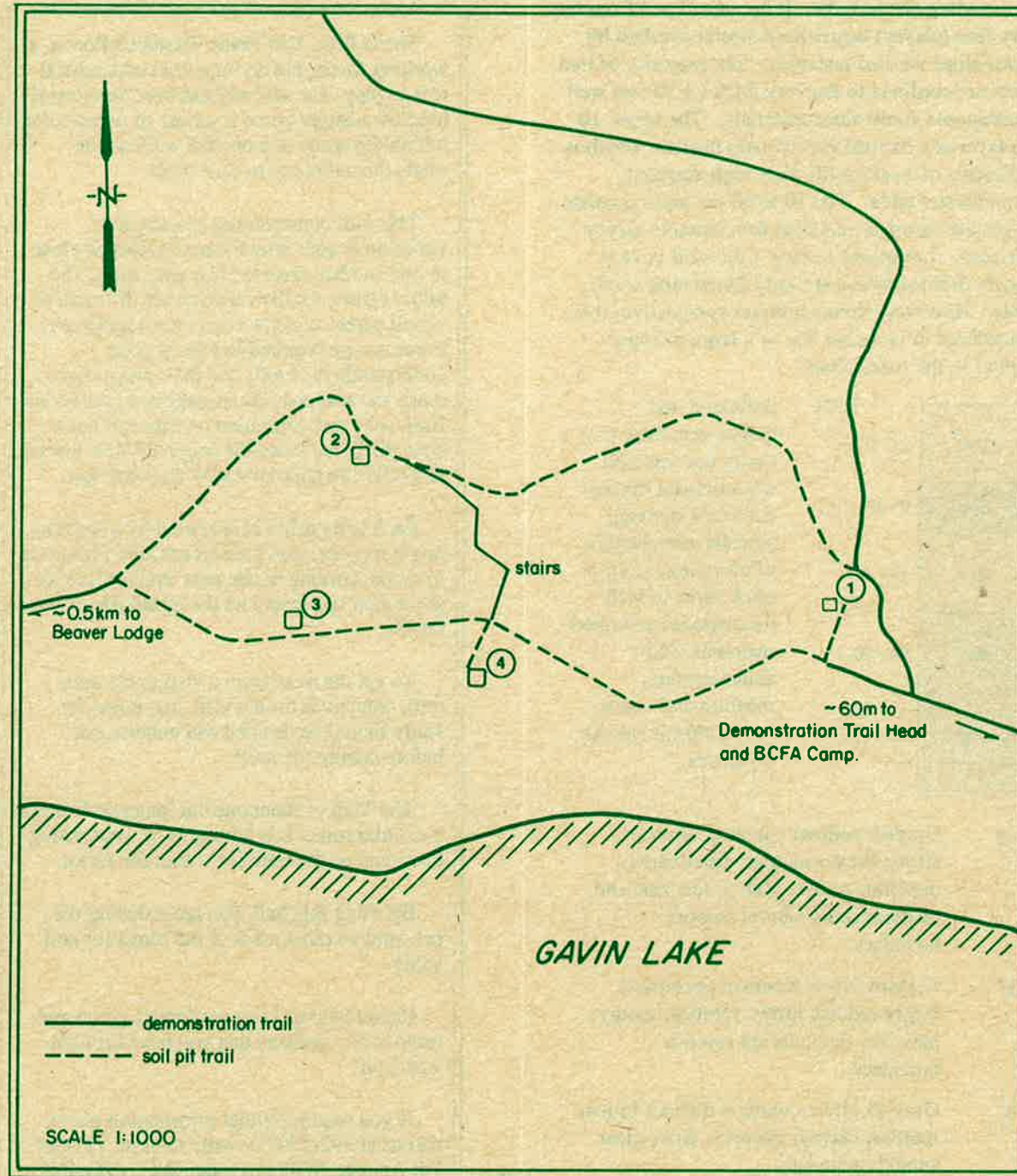
GAVIN LAKE SOILS TRAIL

Stop #1: Loamy Orthic Dystric Brunisol with Mormoder humus form.

This soil is located at the edge of poorly sorted, shallow fluvial terrace. Particle size changes with increasing depth from fine loamy in the upper layer to loamy-skeletal in the middle layer to sandy-skeletal in the lower layer. The rooting zone is moderately deep (80 cm), with the majority of the tree roots situated in the upper 30 cm, which is a very friable brown layer underlain by compacted glacial till. The soil is moderately well drained and, in relation to others in the area, is considered to provide average supply of water and nutrients for tree growth.

LFH	5 - 0 cm	LFH	Softwood and hardwood litter (L);
Ah	0 - 1		partly decomposed non-compact matted materials showing mycelia and clusters of droppings (Fa); well decomposed materials (Hd); few fine roots; abrupt smooth boundary.
Bm	0 - 30		
IIBm	30 - 60		
BC	56 - 80		
IIC	80 + cm		

- Ah Dark grayish brown; loamy; weak, fine, granular; friable; many fine roots; discontinuous.
- Bm Dull yellowish brown; loamy; 15% coarse fragments; weak, medium, subangular, blocky; friable; many fine and medium roots; clear smooth boundary.
- IIBm Dull yellowish brown; sandy-skeletal; 40% coarse fragments; single grain; loose; few roots; gradual, smooth boundary.
- BC Dull yellow; sandy-skeletal; 50% coarse fragments; single grain; loose; few roots; abrupt, smooth boundary
- IIC Light yellow, loamy skeletal; 35% coarse fragments; massive; very firm.



Stop #2: Sandy Orthic Humo-Ferric Podzol with Hemimor humus form.

This soil has also developed from fluvial materials but the landform is an esker. Soil particle size is fine sandy with only a few coarse fragments (< 5% by volume). The layer below the depth of 75 cm consists of light grey, very coarse sand. The light reddish-brown rooting zone is deep (over 100 cm).

LFH	4 - 0 cm	LFH	Softwood litter (L);
Bm1	0 - 7		partly decomposed compact matted materials showing mycelia (Fm); very thin layer of decomposed materials (Hd); many fine roots; abrupt smooth boundary.
Bm2	7 - 30		
Bm3	30 - 75		
IIC	80 + cm		

- Bm1 Bright yellowish brown; sandy; 5% coarse fragments; weak, fine, subangular blocky; friable; many fine and medium roots; clear, smooth boundary.
- Bm2 Dull yellow orange; sandy; 15% coarse fragments; single grain; loose; weak, medium subangular, blocky; friable; many fine and medium roots; clear, smooth boundary.
- Bm3 Grayish yellow brown; sandy; 5% coarse fragments; single grain; loose; few fine and medium roots; clear, smooth boundary.
- IIC Light gray, coarse sand; single grain; loose; few roots.

Soil descriptions were graciously provided by Professor Karel Klinka, UBC Faculty of Forestry.