land
hastings corridor analysis

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Wynn, Graeme and Tim Oak (eds), 1992, Vancouver and Its Region. Vancouver:

introduction: The Vancouver region – encompassing Howe Sound and the Coastal Mountains to the north, the Strait of Georgia to the west, the Fraser lowlands to the south, and the Fraser Valley to the east – takes it character from the sculptural effects of glaciers.

The last glaciation, the Fraser, began 30000 years ago and reached its maximum extent 15000 years later, resulting in large outwash plains of the Vancouver lowlands, material which was molded and compacted in some areas under 1500m of ice.

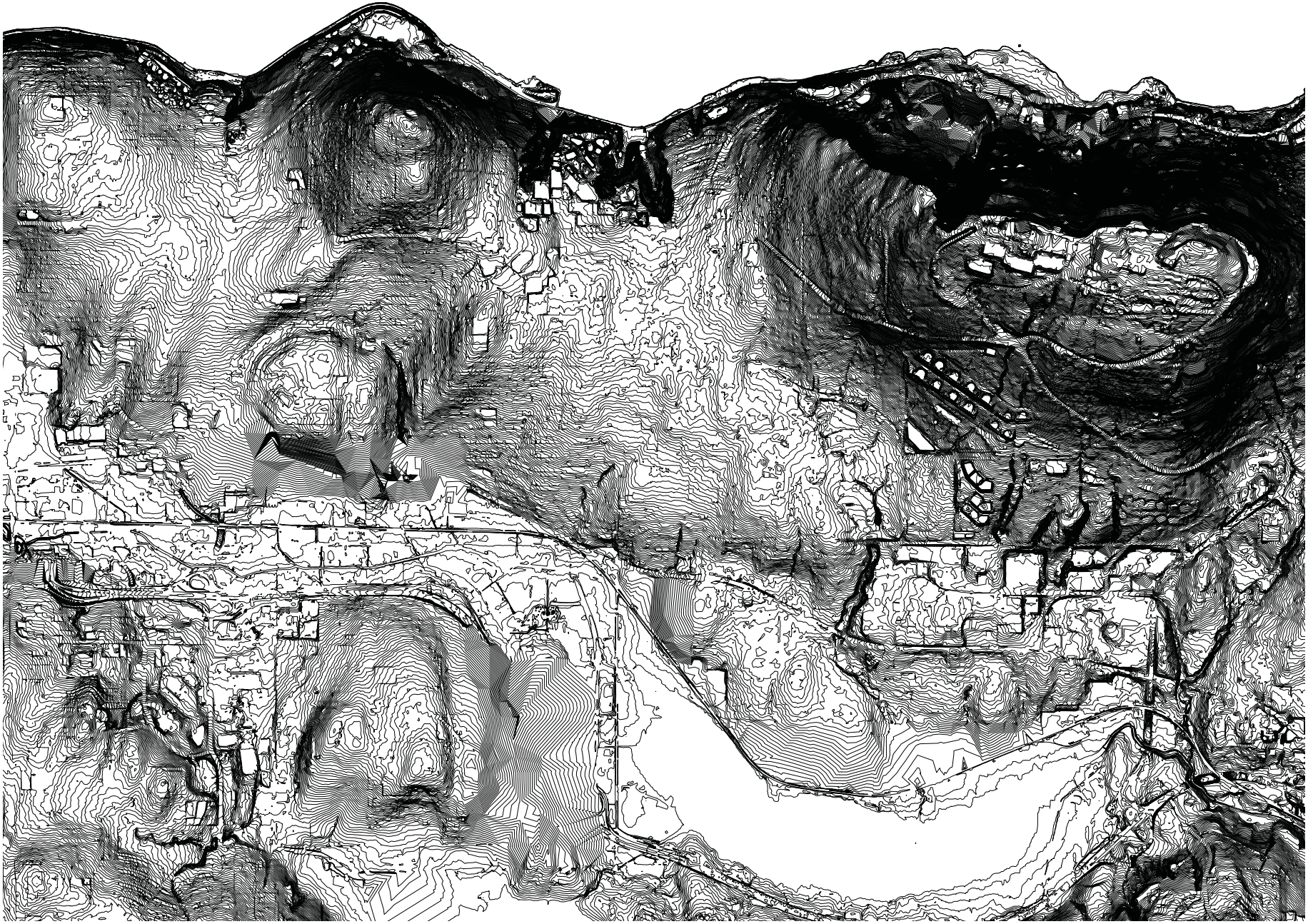
During glacial retreat, as the land began to rebound and vegetation take hold, the region underwent a gradual shift from a warm and dry climate marked by Douglas fir and arbutus to the current conditions enveloped in a Coastal Western Hemlock biogeoclimatic zone.

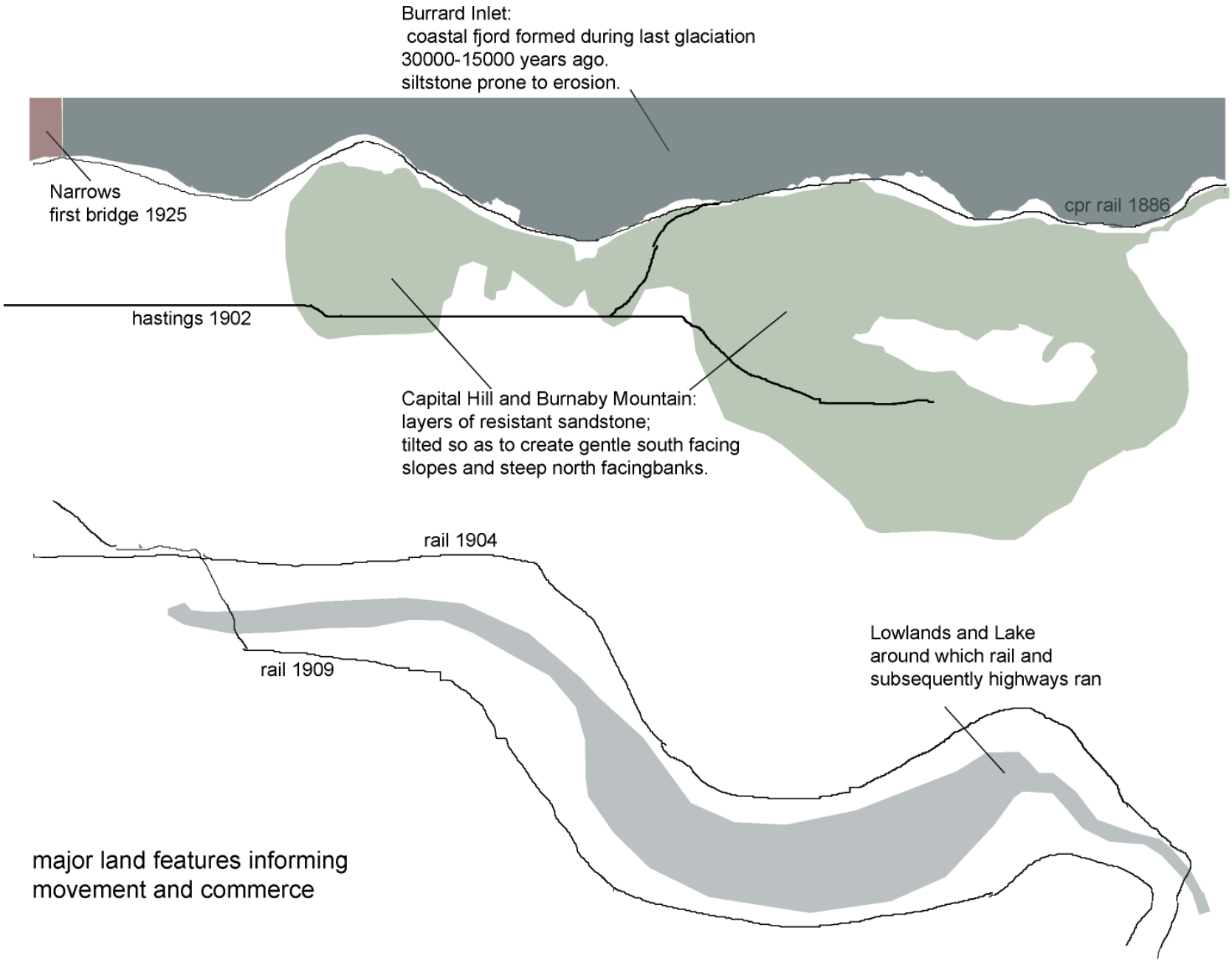
The Burnaby stretch of Hastings Street finds itself conspicuously caught in the middle, amidst a large lake and major river south, a fjord north, a small mountain east and Vancouver west, marked by Boundary road. Though, it is the Trans Canada Highway that effectively demarcates the shift, its location derived from the narrowing of Burrard Inlet and thus the bridge. These features act so as to create Burnaby as both coherent place and dynamic passage.

Along the water from west to east there are three rises in the land ascending from Burnaby Heights at 100m Capitol Hill at 200m and Burnaby Mountain at 365m. Hastings runs along the south of these features jogging only once for Capitol Hill until it splits in front of the mountain. Each rise corresponds with a round out into the fjord. Between them are small valleys with live streams and active vegetation, a pattern that is repeated throughout Burnaby.

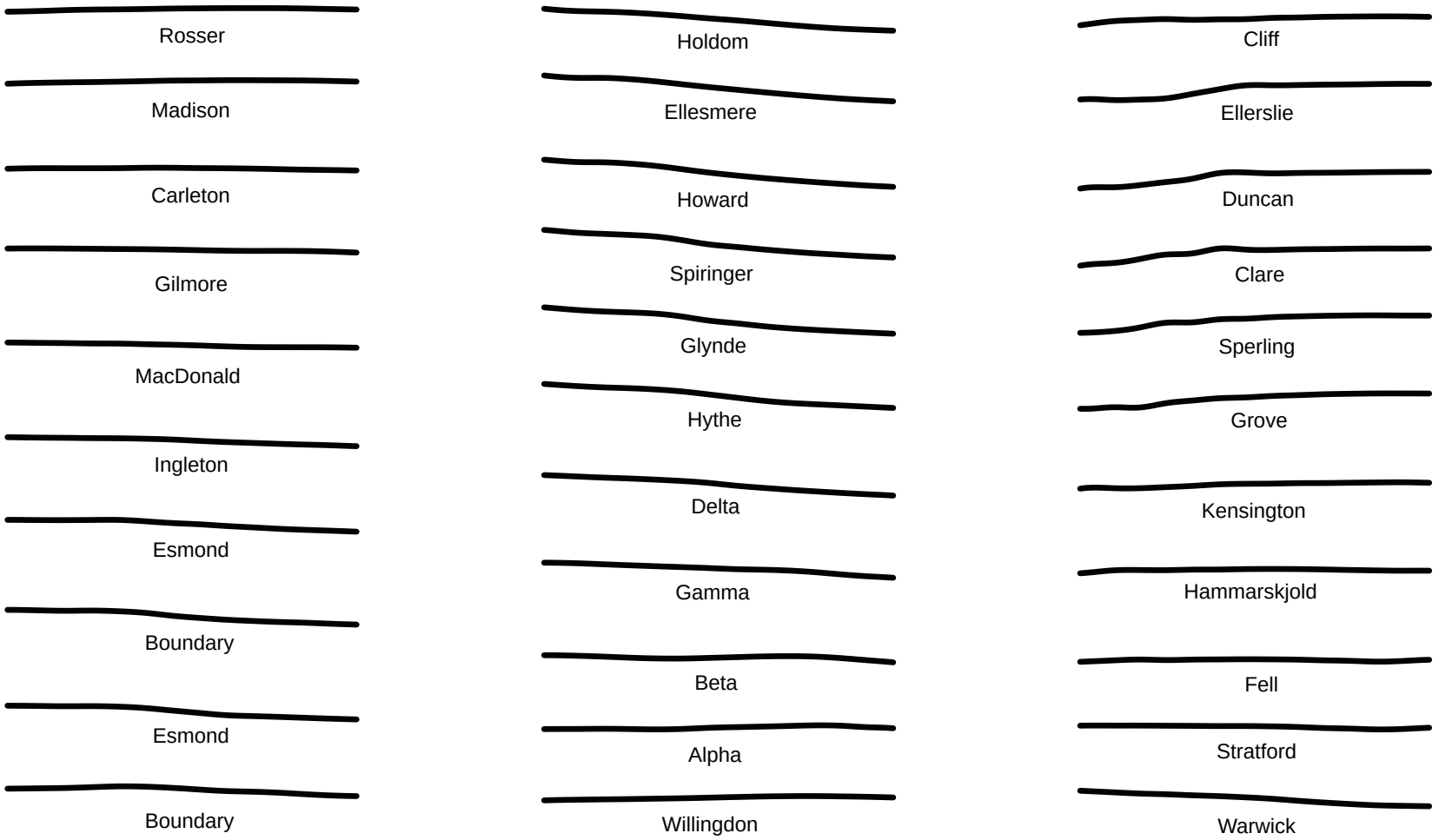
The passages through Burnaby were the impetus of resources and commerce, beginning with skid roads of the logging industry, although it was the railtracks along the shoreline and the lowlands both sides of Burnaby Lake that gave the template for future highways.

geomorphology

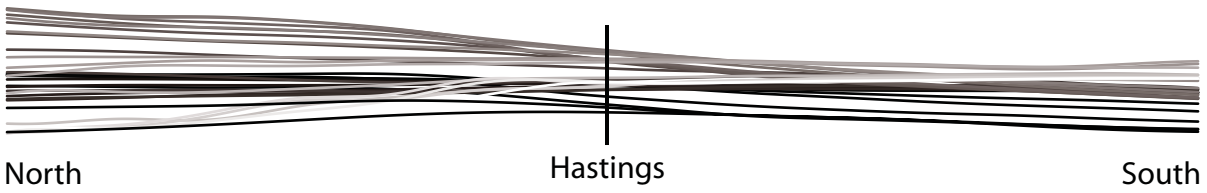


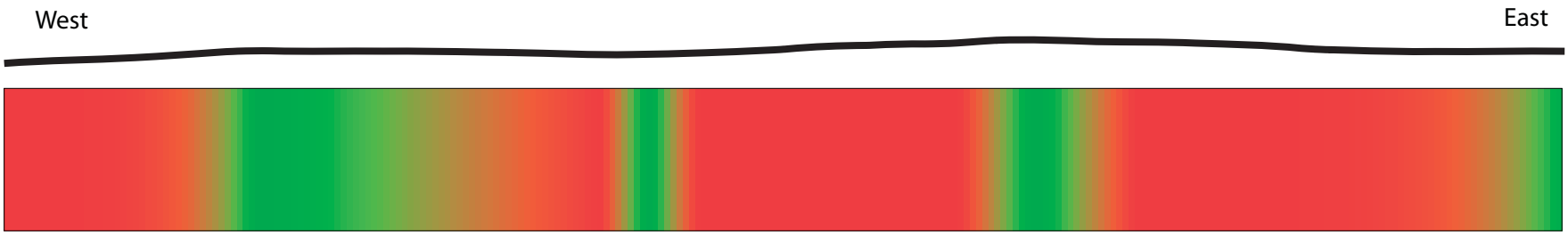


major land features informing movement and commerce



Sections at each road crossing Hastings, extending 1/4 mile north and south of the Hastings corridor.





Hastings has a long gradual slope that changes elevation by roughly 60 meters.

The colors represent an increasing degree of exertion when walking.

Should we consider a demographic that would be less likely to travel a distance because of this incline? How can design be sensitive to this?

Lowlands (modern sediments)

Uplands (ice age sediments)

Mountains (bedrock)

hydrology: The climate of Burnaby consists of relatively dry, temperate summers and cold, rainy winters. It is the coldest in December and January where the temperature is generally below 5° C, while precipitation is the highest from November to January, ranging from 9.58 to 11.27 inches per month (City of Burnaby, 2004).

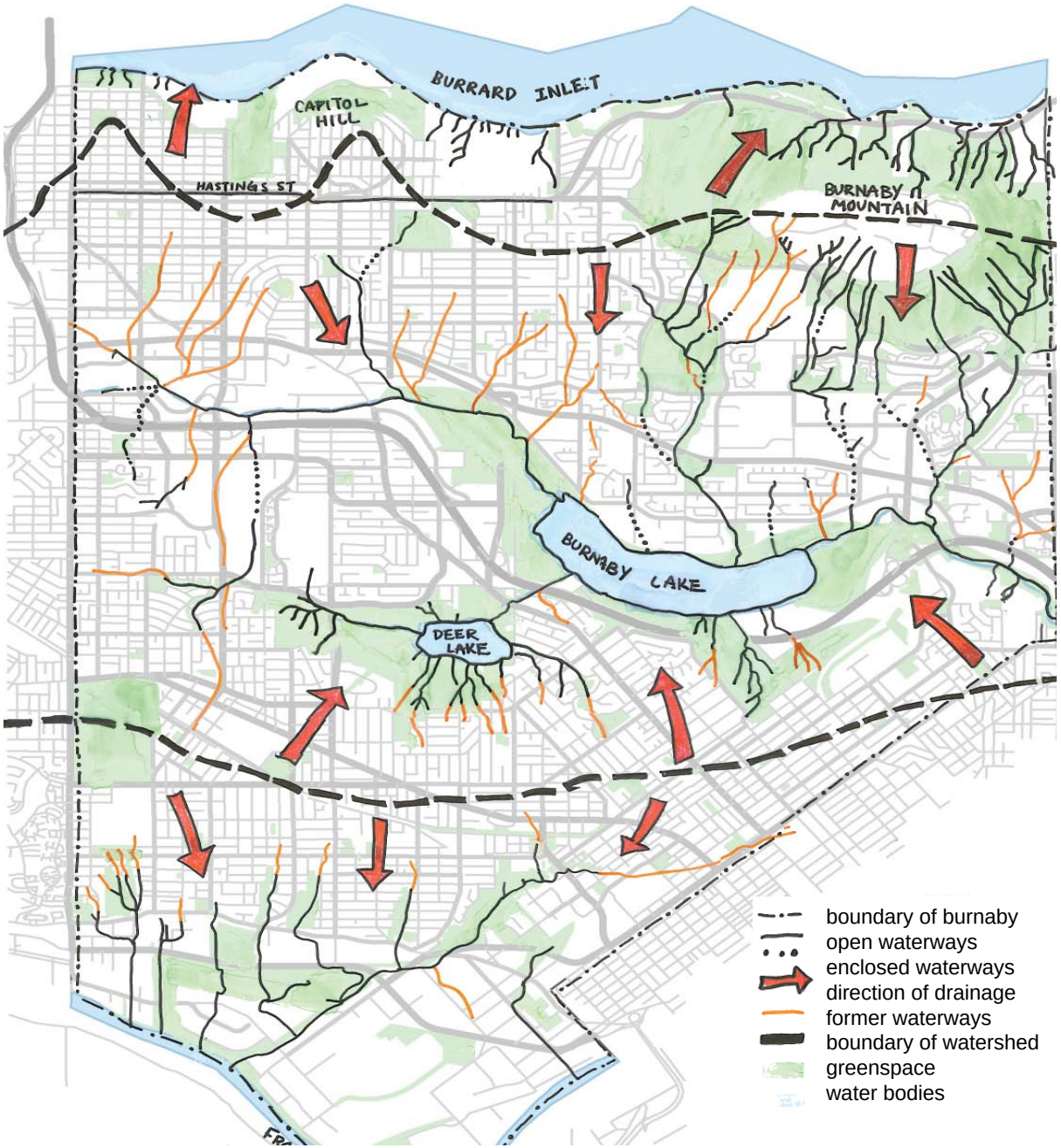
The Burnaby landscape was drained by a system of marshes, lakes and streams before settlement (City of Burnaby, 1993). Due to urban development, parts of this system no longer exist. There are shorter waterways which drain into the Burrard inlet towards the north, while most stormwater drains through pipes and smaller creeks into Deer Lake and Burnaby Lake.

Due to glacial movement approximately 25,000 years ago, the soils of Burnaby consist of Ice Age sediments that consist of a mixture of clay, sand and rock fragments know as till. (Wares, 2007)

Precipitation that used to infiltrate through soil and travel underground towards larger waterbodies now becomes urban runoff that is carried through the storm sewer system and into the natural waterways.

Urban runoff contains grease, fertilizers, pesticides and litter, which are detrimental to fish and wildlife living in the Burnaby water system and its surrounding green corridors (City of Burnaby, 1993). There have been accounts of abundant salmon and trout in Burnaby's streams, and much effort has been made to restore the health of the creeks and release fish back onto the site. Artificial marshes planted with native wetland plants have been installed in different creeks and waterbodies to remove nutrients and contaminants. Green corridors along the creeks are also valuable habitat for wildlife.

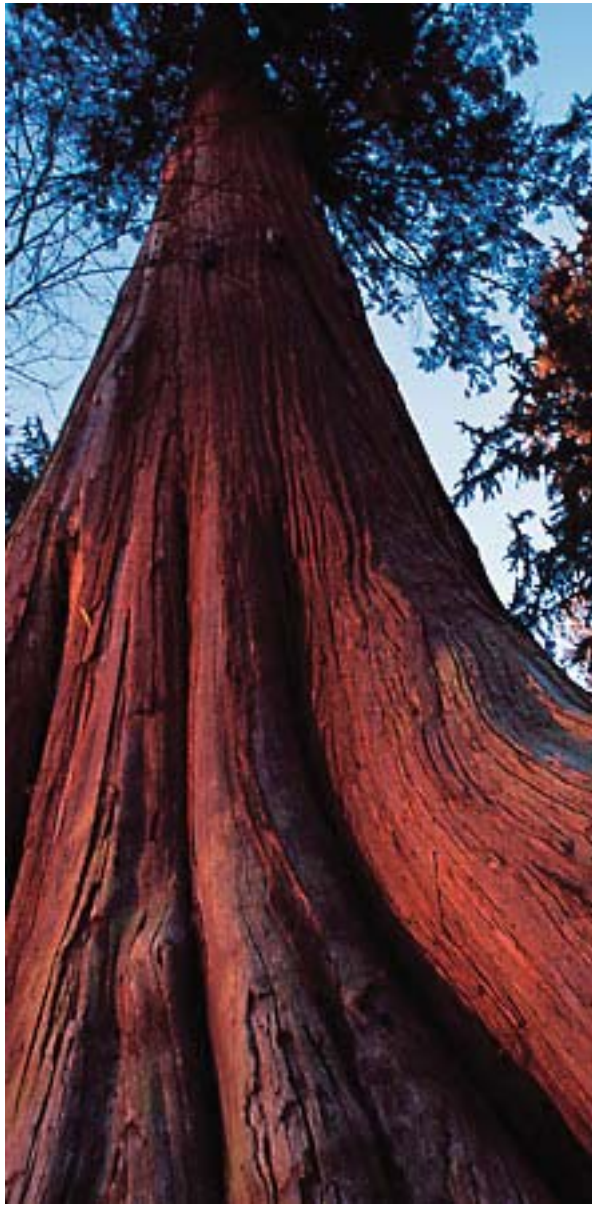
Little remains of the inherent habitat capability of the Hastings Corridor due to urbanization. However, since it is part of the Burnaby Lake catchment, the runoff from Hastings also affects the water system in Burnaby. The Burnaby Lake water catchment in particular is very sensitive to polluted runoff since it drains slowly and suffers from sedimentation. In *Landscape Planning: Environmental Applications (2005),* Marsh argues that in residential and commercial areas such as Hastings, 40 – 50% of precipitation becomes runoff. Increasing infiltration and having cleaner runoff would contribute to the overall ecological restoration of Burnaby.



species: Before settlement, Burnaby was a part of the Coastal Douglas Fir Forest (CDF), home to some of the province's most interesting and diverse ecosystems. A mild climate has given this area some of the province's rarest vegetation. Geographically, Burnaby consists of hills, ridges, valleys, and alluvial plain; and each of these regions were characterized by different plants. Along the hills and ridges grew douglas fir, arbutus, garry oak, occasional lodgepole pine, and wild rose, snowberry and ocean spray covered the ground. Where there was abundant moisture, such as the floodplain around Burnaby Lake, sprang douglas fir, grand fir, western red cedar, big leaf maple, red alder, and western flowering dogwood. At the shrub layer, sword fern, salmonberry, skunk cabbage, Indian plum, salmonberry, and red elderberry were the most common. Finally, at the ground level were blue camas, shooting star, easter lily, chocolate lily, satin flower, golden Indian Paintbrush, and deltoid balsamroot. Similar to the floral diversity, the CDF was full of wildlife. Black-tailed deer, roosevelt elk, black bears, cougar, and many other species freely roamed its forests and coasts. Bears, cougars, elk, black-tailed deer, and barn swallows were among the habitat.

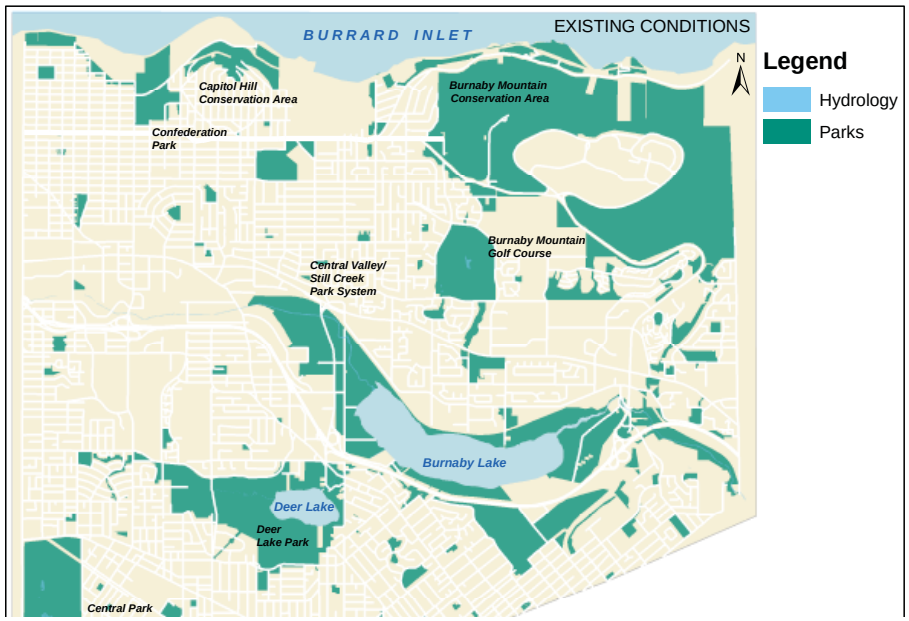
Native Flora

Latin Name	Common Name
Camassia quamash	Blue camas
Dodecatheon meadia	Shooting stars
Lilium longiflorum	Easter lily
Dichopogon fimbriatus	Chocolate lily
Clarkia amoena 'Satin'	Satin flower
Castilleja levisecta	Golden Indian paintbrush
Oemleria cerasiformis	Indian-plum
Balsamorhiza deltoidea	Deltoid balsamroot
Symplocarpus foetidus	Skunk cabbage
Polystichum munitum	Sword fern
Rubus spectabilis	Salmonberry
Sambucus racemosa	Red elderberry
Pseudotsuga menziesii	Douglas fir
Abies grandis	Grand fir
Thuja plicata	Wester red cedar
Acer macrophyllum	Big leaf maple
Alnus rubra	Red alder
Cornus nuttallii	Western flowering dogwood
Arbutus menziesii	Arbutus
Quercus garryana	Garry oak
Pinus contorta	Lodgepole pine
Rosa woodsii	Wild rose
Symphoricarpos rotundifolius	Snowberry
Holodiscus discolor Maxim	Ocean spray



Currently, the physical conditions of Burnaby are far removed from that of the former Coastal Douglas Fir Forest, especially around the Hastings corridor. Deforestation and urbanization has erased the forest rich ecosystem. The map to the right illustrates some of the existing parks, the scene of the Hastings Corridor, and its adjacent streets. Invasive plants such as english ivy, oakleaf hydrangea, tilia cordata, freeman maple, and english holly, line both sides of Hastings. These street plants, both small and diseased, help little in mitigating the loss of the forest for drainage and facilitating wild life such as birds and insects. Areas such as the Burnaby Mountain Conservation Area, Capitol Hill Conservation Area, and Central Park are hints of the original forest. Although Burnaby's ratio of park land to residents is one of the highest in North America, many of these are not CDF.

Let's bring some of this natural forest back and create connections between the existing scattered forests and the urban landscape, as well introduce wildlife habitats back into our cities.



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<http://www.burnaby.ca>