

MISINFORMING THE PUBLIC

A CRITIQUE OF THE GREATER VANCOUVER REGIONAL DISTRICT'S (GVRD'S) WATERSHED MANAGEMENT BOOKLET "PROTECTING A PRECIOUS RESOURCE" (A GVRD EXERCISE IN CONTROLLING INFORMATION)

**RESEARCHED AND WRITTEN
BY WILL KOOP.
AUGUST, 1995.**

TABLE OF CONTENTS

Quotations from the GVRD Booklet	2
Executive Summary	4
Foreword	5
1. Cover Page (Judging the Cover by its Booklet)	7
2. Historical Background	8
3. Greater Vancouver Watershed Chronology	11
4. Omissions from the Chronology	12
5. Our Dynamic Weather	13
6. Fire Protection?	14
7. Erosion Control?	17
8. Ecological Inventory?	18
9. Road Maintenance?	20
10. Long-term Planning for the Watersheds	
11. Watershed Tours	23
12. The Lower Seymour	24
13. Summary	26

QUOTATIONS FROM THE GVRD BOOKLET, *PROTECTING A PRECIOUS RESOURCE*

The GVRD's lease agreement on the watershed lands with the Province of B.C. requires the development of watershed management plans. (page 12)

Forest fires occurring in the watersheds can affect water quality. An uncontrolled wildfire could have devastating impacts on our water by increasing nitrogen and phosphorous levels, making the water unfit to drink. (page 8)

Understanding how forests behave and interact with the environment is imperative for the GVRD as stewards of the region's watersheds. (page 8)

It is the GVRD's goal to keep the watershed forests healthy and vibrant as they are a vital link in the system that provides us with quality drinking water. (page 9)

Roads are designed to minimize ground disturbance and more than 3,000 drainage structures (culverts) have been installed to ensure creeks and streams remain in their natural courses. (page 11)

DID YOU KNOW? The GVRD's policy of limiting access to the watersheds to protect the water supply is unique. One of the more 600 watersheds in B.C., only the GVRD and Capital Regional District (Victoria and area) have closed watersheds. Due to the foresight of the District's founders in instituting this policy, we have one of the safest and cleanest drinking water supplies in North America. (page 4)

Access to the watersheds is limited to protect the region's water supply from human contamination. Partly because of this, a degree of mystery has evolved around the vast tracts of forested mountains. Increasingly, people want to know where the watersheds are, how big they are, how they function and how they are being managed. (flip side of title page)

GREATER VANCOUVER REGIONAL DISTRICT
WATERSHED MANAGEMENT



*PROTECTING A
PRECIOUS RESOURCE...*

Front Cover of GVRD booklet, *Protecting a Precious Resource*

EXECUTIVE SUMMARY

The following is a critique of the GVRD Communication and Education Department's recently published twenty page booklet, *Greater Vancouver Regional District Watershed Management - Protecting a Precious Resource*. Overall, the booklet supports the continuance of forestry management in the watersheds at the expense of revealing critical information.

For instance, the brief treatment on the early history of the Greater Vancouver watersheds omits important episodes and details which oppose and challenge logging in the watersheds, an omission consistent with other recent GVRD reports.

The booklet's discussion of the effects from precipitation in the form of rain storms, which might trigger the release of materials from steep mountain slopes, and the associated rise and velocity of water causing stream banks to erode and dispersal of sediments into our reservoirs, are comments carefully confined to blame natural processes only. Discussion of associated erosional contributions from forestry practices in our watersheds is deliberately avoided. The omission of such relevant information, given the overall infrastructure of logging roads and hundreds of clearcuts throughout our three watersheds, is absolutely inexcusable and reprehensible. It is primarily deceptive to the unwitting and targeted public, which has not had the opportunity to become properly informed about the transformative development in our watersheds, into believing that turbidity has merely been the result of natural processes.

The booklet's discussion of naturally caused fires as being a threat to water quality is mired in misinformation. Lightning storms have caused little forest damage in relation to fires caused by forestry operations, especially during the first thirty years of this century. The threat to water quality has come from the forestry operations from 1961 to the present, which have removed and disturbed over 4000 hectares of old-growth forests. The young clearcut plantations have a much higher fire rating hazard than the forest which they have removed. Local field studies have also shown that chemicals released after forest fires do not threaten water quality, as the booklet alleges.

"Protection" of the water supply (re-defined from the original Water District's policy) is now defined as continued road building, logging, and road network maintenance. From this pretext the booklet states that the Amending Indenture "requires" forestry management, a statement which is simply not true.

In conclusion, this critique demonstrates that the GVRD has not been forward in presenting the public with good information. This fact alone should make one question the intentions of this booklet. The related fact that this booklet is to be circulated throughout our educational systems, in order to promote continued management practices from bad information, is quite disturbing.

FOREWORD

The following is a critique of the GVRD's recent twenty page publication, "Greater Vancouver Regional District Watershed Management - Protecting a Precious Resource", on the management of the Greater Vancouver population's drinking supply watersheds, the Coquitlam, Capilano, and Seymour. As I am currently researching the history and nature of these three watersheds, and the relevant field sciences associated with the management of these resources, I felt compelled to respond to this publication.

The booklet is essentially the product of the GVRD's Watersheds Forestry Management Department, in association with the GVRD Communications and Education Department, at Greater Vancouver taxpayers' expense. Its message is to comfort the public with assurances that the thirty-year old Forestry Department has been and will continue to be the good steward of the public's trust.

The Manager of the Communications and Education Department has informed me (August 1, 1995) on where the booklet has and will be circulated:

In addition to individual requests, the booklet was distributed this summer to the GVRD library, municipal halls, main municipal libraries, the Regional Water Advisory Committee and many individuals. It will be distributed this fall to all secondary schools and post-secondary schools in the region. 20,000 copies were printed.

Unfortunately, as you will read below, I have discovered many problems with the booklet's content, which leads me to question its intentions. For instance: the absence of important information from the early history of the Water District; with its comments on the threat of forest fires; the absence of important considerations on the topic of erosion; with the history of forest health; and with the reasons behind present administrative proposals to continue logging of the watersheds. Nothing should disturb and frighten the Greater Vancouver public more than the suppression, confinement, and manipulation of information, especially from its administrators, the guardians of the public's trust.

While I acknowledge the fact that the GVRD has temporarily halted road construction and logging in the watersheds since 1993, their forestry department have however not halted in their deliberations for its continuance (the 1994 helicopter logging in the Capilano, and other rejected proposals), nor in placating the public with half-truths. Since the fickle and fettered 1991 public review process of watershed management, which managed to implement intermediate measures for restraint and consideration, it has merely been a reluctant and frustrating hiatus from the previous sustained yield logging empire. As such, the forestry management department still seems to be steering the recommendation process toward this end for Water Committee decisions on our watersheds, decisions which are in turn funneled to the GVRD Administration Board, the final decision-making body. For instance, the recent decision-making process on the status and protection of spotted owls in our watersheds, where the forestry department proposed the options in order to safeguard their post ecological inventory development proposals.

The booklet's boast of the GVRD's policy of "limiting access to protect the water supply" (page 4) has been carefully redefined from its original policy, where limited access once meant staff monitoring and patrol, to now mean access for the business of logging, etc. The initial Greater

Vancouver Water District policy was once firmly rooted in watershed protection, not the present masquerade of road construction and logging as protection. The previous Water District clearly understood that the old-growth forests and the under-storey vegetation are the functional guardians of our water resource and should remain undisturbed from development, a pronouncement which was rigidly enforced from the late 1920's until the 1960's. The early Water District "closed" the watersheds to the public AND the logging industry, and thereby guarded the public's trust. The GVRD's booklet is structured by thematic headings. I have taken almost all of these headings in roughly the same order and then provided a critique.

For the reader's information, I have produced a draft manuscript (April 26, 1993) for the public entitled "Wake Up Vancouver", on the history and policy of the watersheds, which is available in the Greater Vancouver Public Library network. I have also recently written two small reports, the first being a short history of the Coquitlam watershed, the second a 22 page critique of a GVRD assessment of landslides following a series of heavy rainstorms in the watersheds in early 1995. I would also encourage the reader to investigate Alan Etkin's recent Masters Thesis, *When Common Sense Fails: Public Debate Over Watershed Management in British Columbia - A Case Study*, November 1994, at Simon Fraser University.

W.K.

August 23rd, 1995.

1. COVER PAGE (JUDGING THE COVER BY ITS BOOKLET)

The title “Protecting a Precious Resource”, and the pictorial association with a young female child drinking from a glass of water, communicating an image of innocence, purity, and nurturing, is a statement and an image rooted in deception. This “resource”, which is supposed to be high quality water, and the rainforests which filter and regulate this resource, have been “unprotected” since the 1960’s. They WERE protected, and there is yet no public admission from the GVRD (Greater Vancouver Regional District) of past wrongs and continuing associated problems of its forestry practices in the three watersheds. The present booklet has more to do with the vindication and obfuscation of past wrongs and promoting the continuation of forestry within the watersheds, assertions which will hopefully become clear through the body of this critique.

2. HISTORICAL BACKGROUND

In this brief overview, there is a curious absence of the most important historical event of the Water District - the public’s and early Water District staff’s protests regarding logging activities in the watersheds. This omission is also consistent with recent GVRD reports, such as the 1991 *Final Summary Report*, a public review of the history and management of the three watersheds.

The passionate insistence of disallowing logging in the watersheds was the heartbeat behind the formation of the Water District’s policy in the 1920’s. I briefly summarized this history in my draft manuscript *Wake Up Vancouver*, a title borrowed from a 1924 address by University of B.C. Botany professor, John Davidson, before a crowd of three hundred people, concerning accelerated clearcut logging in the Capilano. A transcript of his address was widely circulated in booklet form to the general public.

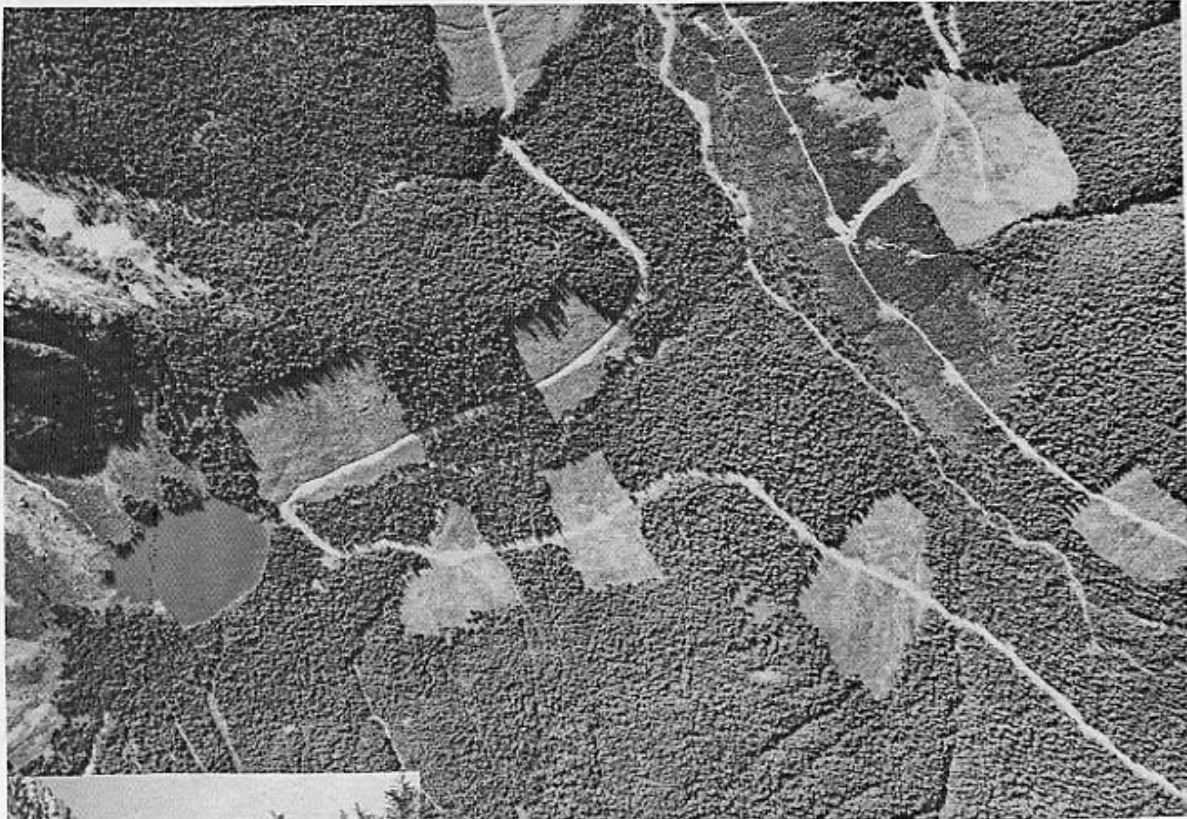
The Capilano Timber Co., which systematically denuded the old growth forests of the Lower Capilano valley, logging at times to about the 750 meter level, had significantly altered the forest and the associated hydrological functions, triggering a host of erosional activities. As well, the Capilano Timber Co. was responsible in causing 37 forest fires between 1918 and 1933, one of which raged over 3,200 acres in 1925. The rate and nature of forest liquidation in the Capilano by the Capilano Timber Co. became utterly disturbing to Health Inspectors, engineers, academics, politicians, and the public, because it was causing serious increases to the rate and timing of water run-off, altering stream channels, and the related disbursement of sediments.

The momentum behind the legislated formation of the Greater Vancouver Water District in 1924 was initiated by recommendations from a provincial report on the Capilano and Seymour watersheds in 1922. This 113 page report, written by E.A. Cleveland, the provincial Water Rights Commissioner, prompted by concerns over logging in the Capilano, specifically recommended against logging in the two watersheds and acknowledged the urgent need of an organized inter-municipal body to oversee the administration of the watersheds. The chief concern of the report was to maintain and deliver the highest quality water to the growing population, which meant excluding all forms of human industry. At the time, representatives from the University of B.C. Forestry Department, the forest industry sector, and provincial forestry department were openly opposed to the protection of the watersheds.



Watershed Intelligence

SEE WHERE YOUR DRINKING WATER COMES FROM



Eastcap Valley July 1992 - Capilano Watershed

INSIDE STORIES

- ① Eastcap Focus
- ② The Fire Fallacy
- ③ Ecological Inventory
- ④ Public Involvement?
- ⑤ Stoltmann's Giants

Friends of the Watersheds' Second Publication of *Watershed Intelligence*, Front Cover.

GREATER VANCOUVER REGIONAL DISTRICT
WATERSHED MANAGEMENT



*PROTECTING A
PRECIOUS RESOURCE...*

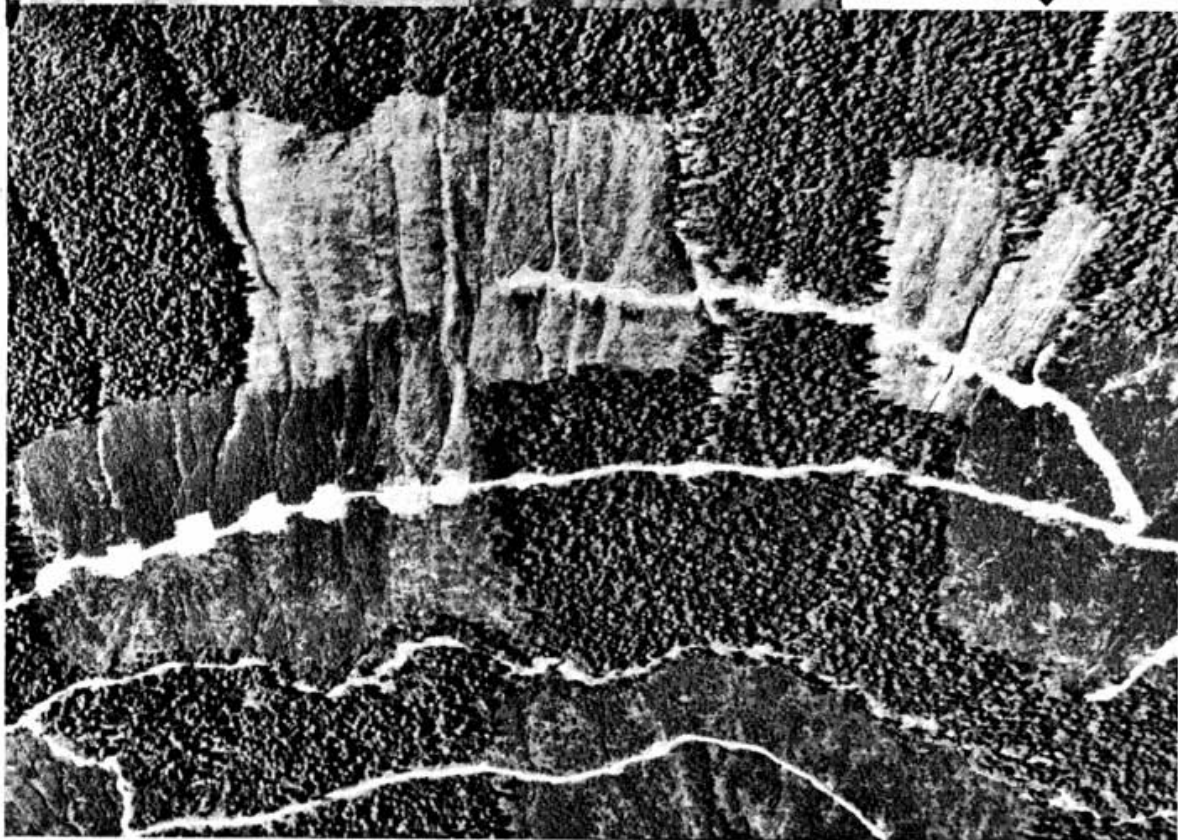
GVRD Watershed booklet Summer 1995

The Coquitlam



IS THIS PROTECTION ? ↓

Cedar Creek in the Coquitlam Watershed
Note: erosion scars in top left clearcut. Logging
done here with no scientific rationale.



Inside the Front Cover of Watershed Intelligence, criticizing the GVRD's booklet.

The Cleveland report also recommended purchasing all of the alienated lands within the physical boundaries of the Seymour and Capilano catchments, so that the future Water District could control and protect the forests from schemes to have them logged off. During the first two or so decades, the Water District was mandated to purchase all of the private lands within the Capilano and Seymour and thereby terminated all logging operations, while fending off repeated petitions from logging companies to do the opposite. The Coquitlam watershed, however, was exempt from this process, primarily because it was fully protected from resource speculation by a 1910 federal Order-In-Council. By 1931 the Water District had incorporated the Coquitlam within its mandate after negotiating with the City of New Westminster. The GVRD began logging in the Coquitlam in 1972. It is important to note that GVRD administrators have not acknowledged the unexploited nature of the Coquitlam watershed and have incorrectly and repeatedly inferred the opposite.

The GVRD has, in this booklet, as in other GVRD reports, chosen to purge and sanitize its historical origins in order to comply with a controversial and contradictory mandate. That mandate, which was carefully engineered in the 1967 Amending Indenture, called to “liquidate” the old growth forests as defined under the shadow of sustained yield logging. The Water District’s decree -

This agreement (The Amending Indenture) established water supply as the primary use of the watershed lands and timber production as a secondary use (page 3)

- is part of a cleverly developed mission statement forged by administrative foresters in the 1960’s to instill public confidence. In effect, small isolated pockets of mixed forest in which some single forest species were affected by insect attack, were identified by select foresters in the early 1960s. They immediately forecast a doomsday scenario of forest fires and resultant effects to water quality, an emotional rationale which became a cunning opportunity to expand a network of systematic logging operations into otherwise unaffected forests. “Timber production”, however, quickly became the primary objective under the Water District’s new Tree Farm Licence #42.

The combined effects of constructing logging roads and many clearcuts in the three watersheds have degraded and manipulated our magnificent forested heritage and disturbed the forest hydrology. Volumes of research in other watersheds have shown that forest management practices cause increases in water volume and water run-off rates, processes which cause many forms of erosion, alter stream channels, move stream bed-load downstream, and distribute sediments into the reservoirs. Forestry operations in our watersheds have, until the mid 1980’s, also required the burning of slash on clearcut areas, a practice which has also caused a number of escaped forest fires. Because of relevant studies in forest hydrology and specialized studies related to analyzing sedimentation rates in reservoirs, I believe that the outcome of the GVRD watershed logging operations has led to significant and accelerated material deposition, especially in the Capilano and Seymour reservoirs. These effects have both affected the holding capacity of the reservoirs and degraded the quality of water for Greater Vancouver end users. Thus the booklet’s statement,

Ensuring an adequate supply of quality water has, and will continue to be, the GVRD’s mandate (page 3),

is a GVRD public relations deception, in light of a host of problems initiated by logging operations since the 1960’s.

3. GREATER VANCOUVER WATERSHED CHRONOLOGY (brown bar from pages 2-5)

Along the bottom portion of four pages is a time-line on what the booklet's editor has considered to be significant events. The tabling of most of this information is included and interpreted to mirror information tailored for the present mandate of the booklet.

For instance, 1990, with the description of 103 lightning strikes, which is further mentioned in the booklet on page 9. According to the GVRD annual report for 1990, out of a total of 131 lightning strikes, 11 started fires. 5 out of the 11 strikes were spot fires, and the other 6 burned a total of 3 hectares. The largest fire burned 1.5 hectares. The so-called damage from these events was insignificant, so why is it mentioned? It is meant to distract and impress the uninformed reader from understanding more relevant information, which I have discussed below in Fire Protection. The historical accounts of significant fires caused from logging operations are not mentioned in the chronology.

Or, 1961, "salvage of insect destroyed trees begins". The insect they are referring to is the balsam woolly aphid. Reports of this infestation were communicated by foresters whose intentions were to initiate logging in the watersheds. The Water District began clearcutting other "unaffected" trees, western red cedar, douglas fir, western hemlock, yew, etc., in order to "salvage" the amabilis fir. Because of the road networks and clearcuts now in the watersheds, they themselves may affect the health of the forest and may become catalysts for disease and attract insects: "... common activities such as road building, logging and silvicultural practices may create conditions of stress that encourage pest problems..." (*GVWD Watershed Ecological Inventory Pilot Study*, March 1993, page 2-35).

Or, 1936-1961, "Serious insect problem that threatened water quality". What insect problem was this, how wide-spread was it, and how did it threaten water quality? The Water District at the time, in protecting the watersheds, was extremely proud about the quality of water it was delivering to the public, and the nature of their abilities to control natural forest fires.

Or, 1962, Typhoon Frieda "causes major blowdown across the three watersheds". The problematic blowdown areas in 1962 which they are referring to were mostly confined to susceptible forested pockets adjacent to areas which had been clearcut. For example: the former Port Moody Conservation Reserve, on the ridge leading up to Eagle Mountain, just north of Port Moody; or around the edge of the Seymour Reservoir, which had recently been clearcut for its use; or along the southwestern edge of an old Capilano clearcut at the top end of Hurricane Creek. Now, what if another typhoon should blast the Coast Mountains here? What about all the clearcut edges in the watersheds which the Water District has created? (Typhoon GVRD, 1961-1993, caused a major cut-down.) Blowdowns have already occurred in the watersheds because of wind gusts adjacent to forest management areas (roads and clearcuts), areas which are then conveniently considered for salvage logging operations.

Or, 1990, "record rainfall, 35 slides in winter". One of the storm events in the winter period of 1990-1991 triggered a very large slide through a clearcut in the upper Seymour watershed, in the Jamieson sub-drainage. The clearcut is on a very steep slope which was logged in 1984. The most probable cause of this slide, which distributed a large concentration of sediments in the Seymour reservoir, was because of the disintegration of tree stump roots, roots which once fortified this

slope. The irony of this slide was that this was the site of a 20 year old forest hydrology project, in conjunction with the University of B.C. Forestry Department, to monitor and predict the long-term effects from logging in the watersheds. It was this slide which threw a wrench in the Water District's public relations machine. Also, there was no additional information about how these intense rainstorms affected the road networks in the watersheds.

Or, 1943, "chlorine first added to water supply..." Chlorine was first added to the Capilano in the 1930's during B.C. Hydro's construction of a hydro right-of-way and an access road, and Hydro had to pay for all of the associated chlorine costs. Health risk concerns from the presence of workers, and sediments introduced from road construction and right-of-way logging, were the reasons for its temporary implementation. In 1943 the Water District was mandated to chlorinate the water supply by the federal government. Commissioner Cleveland tried to oppose this measure. Chlorine levels introduced to the water supply were very low and indiscernible at that time, unlike today.

4. OMISSIONS FROM THE CHRONOLOGY

In addition, from this critic's point of view, there are a number of important omissions from this time-line:

1903-1905 - Tunnel constructed from Coquitlam Lake to Buntzen Reservoir, to divert water for B.C. Hydro's power station on Indian Arm. First dam completed on Coquitlam Lake.

1910 - The federal government passes an Order-In-Council to protect the Coquitlam watershed from logging and any other human industry. This was created at the request of B.C. Hydro's predecessor, the B.C. Electric Railway Co., to protect the forests which gave them their water rights for the hydro power station.

1918-1933 - The Capilano Timber Co. logs the Lower Capilano on private lands.

1922 - E.A. Cleveland completes a report on the Capilano and Seymour, recommending the formation of an inter-municipal Water District, and the cessation of all logging in the watersheds.

1925 - The Capilano Timber Co. causes a large forest fire in the Capilano. This fire was the catalyst for the establishment of the Water District and their policy to end logging in the watersheds.

1926 - E.A. Cleveland becomes the first Water District Commissioner. He remains in office until

1952 - during which time he plays sheriff against speculators lobbying to log the watersheds.

1931 - The Water District negotiates with New Westminster to incorporate the Coquitlam watershed.

1950-1954 - The Water District opposes the Squamish Highway lobby through the Capilano from the Squamish Highway Committee and the provincial government.

1958-1960 - Clearing and construction of the Seymour dam. The Water District hires its first forester for this operation, who is later responsible for initiating logging in the watersheds.

1963 - The Water District asks the provincial government to consider logging on Crown Land in the watersheds.

5. OUR DYNAMIC WEATHER (page 6)

The booklet's discussion of the effects from precipitation in the form of rain storms, which might trigger the release of materials from steep mountain slopes, and the associated rise and velocity of water causing stream banks to erode and dispersal of sediments into our reservoirs, are comments carefully confined to blame natural processes only. Discussion of associated erosional contributions from forestry practices in our watersheds is deliberately avoided here. The omission of such relevant information, given the overall infrastructure of logging roads and hundreds of clearcuts throughout our three watersheds, is absolutely inexcusable and reprehensible. It is primarily deceptive to the unwitting and targeted public, who have not had the opportunity to become properly informed about the transformative development in our watersheds, into believing that turbidity has merely been the result of natural processes.

To simply state that

“massive amounts of it (rain) arriving at one time disturbs the exposed reservoir banks and stream beds and often causes much of our early winter time cloudy water problems”

is to deny the existence and dominating problems associated with roads and clearcuts in the watersheds. Denial of these problems have been promoted by GVRD administrators and some of their consultants, yet debunked by professionals:

The vast majority of scientific literature indicates that the building of roads and the logging of a watershed results in altered flow patterns and is almost accompanied by more debris and sediment put into the stream. To conclude that old growth forests generate more dirty water than are subject to road building and logging is a case of wishful thinking so as to support some hidden agenda. (Submission #93, by Otto Langer, Registered Professional Biologist, to the GVRD public review, May 1991)

In the relatively young but vital science of forest hydrology there have been numerous studies which evaluated the negative effects associated with forest management activities, like those in our watersheds. Conventional forestry practices in mountainous terrain cause the transport of sediments and materials, alter stream characteristics, and thereby directly increase depositional rates downstream.

The unfortunate repercussions to our reservoirs have, therefore, been the release and problematic presence of very fine clay/silt particles which tend to remain in a state of suspension for prolonged periods of time. The recent Capilano water supply intake closures for some fifty days for two periods (December 21, 1994 to January 10, 1995; February 21 to March 13, 1995), is possibly a strong indication of the accumulated management effects to the Capilano reservoir. The Water District, with its foreknowledge of the presence of these fine clay/silts in the watersheds was, I

believe, negligent in disturbing these soil horizons, and interfering with the forest hydrology by constructing roads and clearcutting on steeply inclined slopes.

6. FIRE PROTECTION? (pages 8-9)

NATURAL (emphasis mine) processes in the forest, including erosion, tree diseases, insect infestations, and forest fires pose a threat to water quality. (page 8)

Perhaps it is more than a passing coincidence that the topics of fire and erosion occupy the centrefold of the booklet, as these two subjects are at the centre of the Greater Vancouver watershed disinformation. What has really posed a threat to our water quality were rationalized forms of opportunism, the forestry operations in our watersheds.

The primary snubs by forestry consultants over forty years ago to entertain notions of logging otherwise legislatively protected water supply regions, which were NOT troubled by natural forest fires, were on the topic of fire. For instance, consulting forester F.G. Johnson's letter to the Water District in February 1952:

“The fact that we have not suffered extensive fire loss in the watersheds during the last 30 years, should not lull us into complacency.”

Or, for instance, University of B.C. Dean of Forestry, Dr. George Allen, in an interview with a reporter in 1953:

Dean Allen points out that a lightning fire tomorrow under certain conditions could send the watershed up in smoke. “We think we're playing it safe. Actually we're playing it unsafe. The great danger is that there is no transportation in there to control fires. One of these days we'll get a bad lightning strike, and no way of getting men in there to fight it”.

The forestry consulting firm of C.D. Schultz and Co. recommended the following (Chapter 11: *Fire Protection*) in a report they completed for the Water District in 1956:

The major drainages of the Watershed should be opened up with access roads and trails to permit the rapid succession of fire in any part of the watershed. The anticipated long period of use warrants well-constructed roads and trails.

Aside from these forged and emotional arguments, the Water District had been extremely diligent in guarding against the possibility of fire in the three watersheds since the late 1920's. In an interview with a reporter in 1953, Water District Commissioner Theodore Berry proudly stated, and in defiance of foresters who were suggesting the opposite:

“We have been operating 27 years, and our losses have been negligible. No recent fire has been over three acres. Our protection is so good that when other people get in trouble they call on us.”

Commissioner Berry also went on to state the repercussions of the foresters' thoughts on constructing a road network through the watersheds:

Access roads, he maintains, concentrate the run-off - upset the balance of nature - stir up sediment in colloidal suspension so the water is so dirty it can't even be filtered clean.

The early Water District's earnest motives to carefully monitor the watersheds for fire were in direct contrast to the lack of such from the early logging operations in the Capilano and Seymour, and those adjoining the protected Coquitlam. During the Capilano Timber Co.'s operations from 1918 to 1933, they caused 37 forest fires, the largest of which raged some 3,200 acres over logging slash and through old growth forests in 1925, facts which the Water District's forestry department is careful to avoid discussing in public and in their literature. Early aerial photographs show many zones in the Capilano impacted by these escaped fires. In fact, the helicopter logging operations of 1994 in the lower Capilano removed standing dead trees (snags) which were burned by the Capilano Timber Co., a factor which they had for some time insisted was triggered from natural causes. The Water District's ironic rationale for logging this mid-elevation stand was to protect it from lightning strikes, a concern based on the absence of historical data.

Commissioner Cleveland was also very critical over arguments based on the importance of roads to combat fires, when he reflected upon the fires caused and then fought by the Capilano Timber Co.:

Easy access by logging railway during some of these fires did not serve to prevent them or to curtail their ravages to insignificant areas. Easy access along the bottom of the valley and organized fire-fighters, as has been demonstrated so many times, are slow and feeble agencies against the merciless flames of a raging fire" (*Proposed Public Highway Through the Capilano*, 1951, page 6)

Data on fire history for this century in the three watersheds clearly demonstrates that people were responsible for almost all the total areas burned. However, the GVRD have purposely emphasized the opposite. In the GVRD's August 1991 *Final Summary Report*, staff portrayed in graph form (in Exhibit S-3) that the number of natural fires, since 1953, predominate in contrast to the number started unnaturally. This information supplied no data as to forested areas burned from lightning in contrast to those caused by forestry operations. In actuality, the occurrence of about 33 lightning strikes caused fires which burned a total of 5.6 hectares at high elevations, whereas the 11 escaped fires from forestry operations burned 85.9 hectares since the 1960s at lower elevations (the area from a 1982 escaped slashburn fire in the Capilano Valley Healmond tributary basin was not included in the 85.9 hectare total figure). And in Appendix A (page A-4) of the *Final Summary Report*, no mention was made to areas burned from forestry operations from 1900 to the 1930's, figures which would have completely upset the GVRD's conclusions, despite the fact that this information was available from their own records.

Despite the overriding concerns for fire which foresters continually solicited, the Water District practiced slash burning procedures until the 1980's over areas which they clearcut. The artificial burning of clearcut slash and the exposed soil layers, a procedure which also caused a number of escaped forest fires, was a blatant contradiction to the rationale repeatedly invoked by Water District foresters, and by the following concern:

Fires contribute to erosion and cloudy water by burning the protective layer of groundcover that holds soil in place. (page 9)

At the time, Greater Vancouver residents relatedly complained of taste and odour problems in the water supply (aesthetic problems associated with the distribution of ash and decay of organisms), and protested over smoke and haze in the area.

Another related contradiction regarding the GVRD's defense for the elimination of the old growth, by decreasing fire hazard areas in the watersheds, are their tree plantations themselves. According to information from University of B.C. forest sciences professor and fire expert Michael Feller, and from the GVRD's ecological inventory staff forest fire consultant Bruce Blackwell, it takes up to sixty or more years before young tree plantations reach a tolerable fire safety level.

That management philosophy (that old growth forests represented a fairly unstable situation, to be converted to more stable younger plantations), which is still the prevailing philosophy, dates as I said some 38 years ago, is fallacious. There are many aspects of that philosophy which have been disproved by more recent research. It's unfortunate, I think, that the research results haven't fully been disseminated, and haven't fully been absorbed by the people who are actually managing the forests.

The research suggests that the younger forests are in fact much more susceptible to wild fires, to forest fires, than is the old growth forest. (From the May 1993 videotape *Greater Vancouver's Water: Our Future*)

That means that, at the outside, the GVRD has to wait over 30 years on their oldest plantations before they are in limited compliance with fire hazard ratings. In other words, the GVRD has created about FOUR THOUSAND hectares of plantations which have a higher fire rating than the old-growth forests which they eliminated.

In addition, I have walked through plantation areas in the Lower Seymour which have been thinned, and the de-limbed debris scattered over the ground are sometimes waste high, prime fuel conditions for a forest fire.

According to scientific studies which have measured the release of nitrogen and phosphorus levels from slash burn sites and from wild fires, chemicals which are thought to be critical for water quality concerns, their results indicate no associated threat to water quality. These findings run contrary to the statement which the GVRD booklet is advertising:

Forest fires occurring in the watersheds can affect water quality. An uncontrolled wildfire could have devastating impacts on our water by increasing nitrogen and phosphorus levels, making the water unfit to drink. (page 8)

This statement is part of an illusionary state of emergency, emanating from a long history of fabricated rationale intended to beguile the unenlightened public and their administrators. Foresters and those who have engineered these arguments have attempted to make fire more serious than it really is in these forests. If fire is such a serious problem, then why were all of the watersheds fully forested prior to logging?

But it is not forest fires that have been the threat to the forests, but from people who have caused forest removal from road construction, clearcutting, and related-caused forest fires. In a taped

interview of Dr. Elaine Golds, a microbiologist and member of the Burke Mountain Naturalists, she summarized the situation as follows:

What of course is important in a forest is not the number of fires you get but the amount of forest that is actually lost to the fire. We said this data (from the forestry department) was not handled in the right way, that it was important to show the number of hectares that were lost, not the numbers of fires. When this data is analyzed with a histogram ... the number of hectares lost by lightning-caused fires is incredibly small. In contrast the amount of forests lost to fires caused by logging and escaped slash burns is extremely high. We are looking at the total number of hectares lost over a thirty year period: 5.5 hectares lost to lightning, 85.9 hectares lost to fires caused by logging. But compare that to the number of hectares harvested over that period, and it's almost 4000. So, it is quite clear that what is causing loss of our forests in the watersheds is not lightning, it is logging. (From the May 1993 videotape *Greater Vancouver's Water: Our Future*)

7. EROSION CONTROL? (page 9)

Erosion control, stream bank stabilization and sediment control are three very important components of the GVRD's watershed management program. Watershed Management staff patrol the watersheds and identify risk areas and potential water quality problems such as disrupted creeks, landslides, unstable slopes, blocked water courses, and exposed areas of reservoir banks. These problems are then prioritized and erosion control work is done.... The GVRD responds quickly to erosion problems that can affect water quality. (page 9)

Behind this bold and comforting pronouncement is the suspicious assumption that the Water District, entrusted with protecting our watersheds, have controlled the elemental forces with their ingenuity and technology. Nothing could be further from the truth. There are numerous examples in our watersheds of uncontrolled erosion of materials from roads. These problems exist because of exposed layers of soil on slopes just above and below logging roads, problems which have and may become acute. The interaction between road slopes and stream banks, where exposed soil slopes are weakened, and the interaction with clearcuts above and below roads, are also sources of many erosive problems.

It is this juncture, the point where there are exposed banks above roads, and where upslope gravity is pushing downwards, that cause the soil profile to slide and crumble downwards, events which cause exposed banks to further increase by retreating upslope, bringing sediments into the road ditch, materials which are then transported to the nearest culvert or stream course during a heavy rain event.

A particularly good, or should I say, bad, example of this is an area which lies directly above the Capilano reservoir, along the Hollyburn branch logging road, where it intercepts Hurricane Creek (see map above). This writer went to great lengths to expose this problem as part of a twenty-two page paper he presented last March (*A Critique of the Landslide Report from John Morse to the Water Committee*), a problem which has been openly denied and deflected in public by the Water District's chief engineer. WHY? Because fine clay/silt sediments have been coming directly into the Capilano reservoir because of roadbuilding, contradicting the Water District's policy to protect the quality of the public's drinking supply.

After the Water District built the Hollyburn branch road, the upper and lower banks of the road adjacent to Hurricane Creek began to seriously destabilize. These banks are composed of very thick deposits of fine clay/silts, the very elements which are responsible for sustained levels and periods of turbidity. Chronological aerial photographs clearly show the subsequent degradation of this area, with large sections being eroded into the Capilano reservoir. The physical nature of Hurricane creek itself began to change since the 1970's as a result of large masses of debris coming down its course from heavy rain events. To this very day the Water District has failed to properly address this very serious problem which they initiated, contradicting the booklet's statement:

The GVRD responds very quickly to erosion problems that can affect water quality (page 9).

In fact, it has become increasingly impossible to respond to problematic erosion problems, as in this example. Temporary solutions, such as hydroseeding of steeply exposed road slopes, are inadequate, as annual rainstorms can easily wash away these green bandaid solutions. It would take the comic hero Superman, with a contract clause to include overtime hours, to recondition the watersheds to model this bold assertion.

This example, and many others, are also contrary to generalized hyperbole about the watershed roads, conforming to supposed "state-of-the-art sediment management practices" (GVWD Watershed *Ecological Inventory Pilot Study*, page 6-3).

8. THE ECOLOGICAL INVENTORY? (page 10)

After reviewing the GVRD's thirty-year logging operations in the Greater Vancouver watersheds, the 1991 review panel concluded that the GVRD contravened the Amending Indenture's mandate - water quality as the primary objective. The panel identified that the logging operations seemed to be determined more by profit and annual Ministry of Forests' timber volume requirements. In light of the forestry management department's public failure, the panel then recommended that the GVRD conduct an ecological inventory to satisfy the obvious deficit of reasoned and scientific objectives for logging in the watersheds.

However, the panel, a majority of which were in favour of continued logging in the watersheds, interpreted that the watershed ecological inventory should be assessed with one directive, that being the continuance of road construction and logging, albeit at a slower rate.

The recommended watershed program, which includes road building and a harvesting component, should be based on risk management principles, where overall risk to water quality is minimized. (Final Summary Report, page ES7)

The Panel has found no compelling water quality reason to suspend the present timber harvesting program, however all future watershed activities should reflect the risk management philosophy. (Ibid., page ES12)

From its' careless and comforting logic, the panel concluded that the GVRD forestry department should later re-continue its logging program under "risk management principles", and then rename it "resource protection", a cleverly twisted slogan which now conforms with the title on the GVRD's new booklet cover.

On November 27th, 1991, the GVRD Administration Board passed the following resolution to satisfy the panel's recommendation for an ecological inventory:

That forest and vegetation management plans be developed based on the ecological inventory that will ensure a suitable landscape for maintaining long-term water quality.

Fortunately, the Board's resolution also stipulated that the Greater Vancouver public would be involved in the ecological inventory process:

A public review process will form part of the recommendation process.

I say fortunately, because two and a half years later the GVRD's chief engineer had attempted to bypass this critical component of public involvement in a letter to the Water Committee, a matter which was glossed over at the Committee meeting:

The public consultation portion of the Watershed Management Plan development has been reduced as a result of the budget reduction. Public input by the Regional Water Advisory Committee only is possible with the current available funding. (March 11, 1994)

The present writer had noticed this discrepancy at the meeting and later provided a short descriptive letter to notify Water Committee members, the GVRD Board, and the press, about the erosion of the public's guarantee.

The GVRD booklet has reconfirmed the 1991 resolution, with one catch, that the public are confined to assess development plans rather than being involved in a process which directs the forestry department's development plans:

The watershed public consultation that began with a policy review in 1989 will continue AFTER draft forest, erosion control and road network plans for the Seymour watershed are developed from information gathered through the ecological inventory. (page 13)

In other words, the forestry department will be tinkering with and readjusting development proposals which they have engineered and interpreted without the public's critical involvement. Two necessary considerations for a proper format for public involvement in the ecological inventory are:

- (a) For the public to evaluate the reports and data from the ecological inventory consultants by technical experts of their choosing BEFORE any management decisions are considered and proposed by the forestry department. Public involvement of such a critical issue should in hindsight not be relegated solely to the forestry department's interpretation of the data.

- (b) that the GVRD engage in public panel discussions, similar to those conducted on water treatment in 1994, rather than a process which might simply become an open house format. Adequate funding for both these processes should be required by the GVRD.

9. ROAD MAINTENANCE? (page 11)

A well-maintained network of gravel roads within the watersheds is essential for all aspects of watershed management. (page 11)

This statement would have shocked the early Water District officials, who understood the fallacies behind this argument (see above, *Fire Protection*). The early Water District understood that roads disturb the natural hydrology and they “managed” all of the watersheds without the necessity of roads.

The booklet further states that “roads are designed to minimize ground disturbance”. If we could get a time machine or a crystal ball and document the erosive problems associated with most every road and clearcut in the watersheds over time, the reader would then understand that there is far more to this guarded statement than meets the eye. Especially as the booklet goes on to state that “more than 3,000 structures (culverts) have been installed to ensure creeks and streams remain in their natural courses”. The variety of road ditches have caused dynamic rerouting of water networks in our watersheds. This matter is at the heart of erosive problems. Water, which would otherwise be distributed evenly down a slope, is concentrated when it meets in a road ditch, after which any number of related problems occur. Under these circumstances, there is little that anyone can do to prevent the consequences of interrupting complex forces associated with water run-off.

The present road network, of some 330 kilometres, is the evolved outcome of a long-term logging program now put on hold. Maintenance of an extensive road network is and can become quite expensive, a cost which was rationalized under perpetual logging profits. Now that the profits have been put on hold, taxpayers will be footing the bills, an expenditure which the GVRD are responsible for. Measures for the deactivation of logging roads should be implemented to counteract long-range costs.

10. LONG-TERM PLANNING FOR THE WATERSHEDS (page 12-13)

This is perhaps one of the most disturbing sections of the GVRD’s booklet, as it concerns development proposals for the future of our watersheds.

First of all, the statement

The GVRD’s lease agreement on the watershed lands with the Province of B.C. requires the development of watershed management plans (page 12)

is simply not the case. For instance, readers should consider the following quote from the GVRD’s agreement with the provincial government, the *Amending Indenture’s* Clause #6:

- (a) the Lessor may notify the Lessee that the lands described in the notice are no longer subject to the terms and conditions of this amending indenture;
- (b) the Lessee may notify the Lessor that the lands described in the notice are required for the development and utilization of the water supply and are no longer subject to the terms and conditions of this amending indenture.

From the outset of the GVRD's controversial agreement with the government on Crown lands in 1967, it was NEVER obliged to log or "develop" the watersheds. Consider that very, very carefully. Why has this important escape clause never been invoked by our entrusted administrative officials and denied in the GVRD booklet? Doesn't that make you wonder about who is actually in control of the public's trust? The GVRD is saying that it MUST continue to build roads and log in the watersheds, a statement which is directly linked to motives behind the GVRD's Seymour watershed ecological inventory.

The GVRD is developing long-term plans based on ecological inventories. (page 12)

The public review report of the watersheds in 1991 recommended renegotiating the *Amending Indenture* with the provincial government, a process which has been impeded by the Ministry of Forests. The former Chief Forester of the province has stated that he is opposed to the discontinuation of logging in the Greater Vancouver watersheds, citing the 1991 review panel's ridiculous conclusion.

I am concerned about the Board's suggestion of terminating existing logging contracts and restricting future harvesting operations to those stands that are categorized as "diseased or insect affected, fire hazard or erosion control". This would appear to be a technically unwarranted action, in view of the independent Panel's conclusion that road building and timber harvesting do not appear to have created a water quality problem. I'm concerned that this would set a precedent for other community watersheds, and restrict future development in the Vancouver watersheds. (J.R. Cuthbert to Commissioner Ben Marr, December 19, 1991)

Requests by the GVRD to the Ministry of Forests to change the Amending Indenture were submitted three years ago. But this process appears to be nothing more than an orchestrated quagmire. Because of the escape clause in the Amending Indenture, the GVRD is not required to "negotiate" anything, it simply has to "notify" the province of its intentions.

Secondly, the GVRD's Water District has not been a good steward in protecting water quality ("the guiding principle") as I have attempted to demonstrate. If it was, then it would initiate the following processes:

- By beginning a long-range process of deactivating logging access roads. This means reshaping original landscape contours through which roads were constructed. This also means taking away the primary risk of introduced erosive activities, a process of rehabilitation. Every aspiring athlete, who has suffered some significant injury, understands that without proper and immediate rehabilitation they will not be able to return to the arena and perform to their highest standards. In the same way, the Water District has inflicted injury to the performance of each of the watersheds, and they must now enter into a period of rehabilitation, and discontinue manipulating the watersheds.
- Something must be done about the state of our reservoirs. The material deposition at the deltas or heads of our reservoirs, especially the Capilano and Seymour, and areas progressively downwards from these deltas to both dam sites, should be carefully addressed. Both reservoirs should be scientifically assessed for their present capacity in contrast to their original capacity, and careful studies made to assess the rates of deposition over the years

since their construction. The problems associated with depositional accumulation are the reasons why a very expensive filtration plant is being constructed (at the taxpayer's expense), something which is linked to the logging of our watersheds, a critical topic which is avoided in this booklet. Recent reservoir studies completed for Portland's water supply, the Bull Run watershed, over similar logging related concerns, should be carefully studied and understood for applications to our own watersheds.

- It appears that the GVRD is entertaining possible amendments to its already tainted policy of forestry management. It mentions housing, transportation, and "other purposes" (not specified) as "values", which all "should be considered". Housing proposals by developers in the watersheds? A highway through the Capilano? Other purposes? These are inappropriate and controversial topics which have not been considered at any of the Water Committee meetings. So why is this being introduced in print, and does this correspond with the GVRD "as steward of the region's watersheds"?

Has the GVRD watershed policy been so weakened that it is bending to the winds of developers? There were proposals for housing in the Lower Seymour valley area just eight years ago, proposals which were ridiculed and quickly extinguished by the public. The recent resurgence from certain Squamish area lobbyists to have a highway constructed through the Capilano, a topic which the Water District battled against for four years in the early 1950's, is something I devoted a chapter to in *Wake Up Vancouver*. MLA David Mitchell, the West Vancouver area Liberal independent, who has been approached by these lobbying forces, has recently stated that "there won't be an alternative until the government deals with environmental concerns about Vancouver's drinking water" (*Westworld magazine*, Fall 1994, page 70).

The other concern is about public recreation in the watersheds. This is certainly not a new topic, one which has been extensively debated for decades by Water Districts in the United States, for instance. When the Water District was first incorporated, it agreed to chaperon mountaineering groups about two or three times a year along watershed trails to isolated areas of the watersheds, places like the Lions, which now have established trail routes outside of the watersheds. Those activities were later discontinued by the Water District. Because these expansive forests and attractive mountainous areas are so close to a burgeoning metropolis, it will become increasingly difficult and important to carefully address and educate the public on this topic. Especially since recent critical attention on watershed management practices has left the public suspicious and cynical about the GRVD's watershed policies, measures which have kept the public out but allowed logging operations in.

11. WATERSHED TOURS (page 14)

As a result of growing public attention, the GVRD began operating sponsored watershed tours in 1994. The 1994 tour had five stops in the Capilano. This year tours have been expanded into the Coquitlam watershed with about six stops. With the 1995 tours, participants are each given a copy of the booklet.

Much like the Capilano Timber Co., who also arranged many tours into the watershed seventy years ago to promote their operations and counter public opposition, the watershed tours are conducted to foster the continuance of logging in the watersheds, a propaganda program. There is a lack of balanced information on these tours. There is no informative discussion on the effects that roadbuilding and clearcut logging operations have had on our watersheds since they began in 1961. In conjunction, there is no appropriate narrative on the early history of the watersheds, information which does not support the continuation of logging the public's water supply. Nor are there informed discussions about the forests in the watersheds.

For instance, where on the stops do the public remember any GVRD personnel discussing the introduction of sediments from roadbuilding or present problems along road banks? And do the public remember getting out of the bus and having a tour guide walk over to a road bank and discuss these problems? Do any of the public remember tour guides telling them that it is not natural fires that have been the problem, but people themselves? Do any of the public remember being told that these young clearcut plantations have a very high fire rating? Do any of the public remember hearing accounts of how the reservoirs have filled up with debris and sediments because of logging practices, and that it has necessitated plans for an extremely expensive filtration plant?

Events at a recent tour stop at Meech Creek in the Coquitlam watershed may demonstrate my point. The public are shown fine clay/silt particles introduced into a small glass aquarium which cloud the water. They are then told that to prevent these particles from being distributed into our taps the Water District had to fortify a small ephemeral creek with rip-rap (rock) to prevent further erosion. But the public are not told nor shown that in order to fortify the creek, the Water District built a long and very wide road which further exposed these clay/silts, especially on the lower road. This road also happened to be built through a magnificent old-growth forest (a profit-making opportunity), which is home to the tallest recorded standing Douglas-fir in Canada. This Douglas-fir monument received much public attention in the press about one year ago, a matter which the GVRD have been extremely reluctant to advertise. When certain public members learned of this on the tour, and wanted to see this monument and the Douglas-fir grove, they were not allowed. Two years ago the Water District had planned to log this area, so no wonder they are cool to discuss this in public. But one thing which our tour guide did not discuss, was the massive October 1982 slide directly above us which initiated the erosion of the Meech Creek area, a slide which evidence shows was most likely related to forestry practices.

12. THE LOWER SEYMOUR VALLEY (page 15)

The Lower Seymour, otherwise inappropriately christened since 1987 as the Seymour Demonstration Forest, is the area directly downstream and south of the Seymour dam. Unlike Stanley Park, to which the booklet makes familiar size comparisons, most of this zone is owned in fee simple by Greater Vancouver taxpayers. Private lands were purchased by the early Water District to prevent proposals to have the northern half of this zone logged. In the early 1980's there were strong proposals to have the area opened to the public, since it was no longer within the critical protected boundaries of the Seymour water supply.

This zone was where the Greater Vancouver Water District first departed from its critical policy of protection and started roading and large scale clearcutting operations in 1961. Under the rationale of addressing a sudden insect invasion, the untouched old growth forests, north of the present five kilometre area near Hydraulic Creek and up to the Seymour dam, comprising hundreds of acres, were systematically logged.

Since the mid-1980's the Lower Seymour has become the front lines of a public relations campaign by the forest industry and the GRVD. This began as a response to an initiative in late 1983 to have the Lower Seymour become a municipal park, the same process which saw the upper Lynn valley become Lynn Headwaters Park. The Seymour Advisory Committee was created in late 1985, dominated by forest industry representatives, who elected Bill Young, a former chief forester for the province, as its first chairman. Afterwards, Bob Cavill, who was with the B.C. Forestry Association, and who is now the manager of forestry operations for the GVRD, was chairman for about four years. Don Lanskail, former mayor of West Vancouver, and former administrator with the Council of Forest Industries for a lengthy period, is currently chairman.

A strategy was quickly devised by the Seymour Advisory Committee to "integrate" forestry operations with "recreation", in order to exclude initiatives for making it a municipal park. The unnegotiable position of the Water District's forestry department over the GVRD Parks' Department quickly developed into a turf war to which the latter reluctantly submitted.

The Seymour Advisory Committee had developed various sub-committees, one of which was a committee on education. This sub-committee devised a variety of strategic educational materials to mirror objectives for the continuation of logging in the Lower Seymour.

The SDF currently promotes GREATER AWARENESS of forests and cooperative forest use through interpretative trails and programs, education displays, tours and forestry demonstrations. (page 15)

Visitors to the Lower Seymour are met with informational displays that interpret the rainforest in a rather narrowly defined context. Public guided tours of the Seymour, and field trips for public schools, are also rigidly entertained. The Seymour Demonstration Forest itself has become a public advertisement, a prized propaganda campaign for the forest industry sector. Designations such as "Premier Demonstration Forest of the World" are proudly bandied about, in conjunction with boasting over the total annual visitors to their Demonstration Forest, most of who are there to get some exercise.

After the public review of the management of the three watersheds in 1991, restrictions to log the Lower Seymour have troubled the forest industry which has financially supported the educational operations within the Lower Seymour. However, substantial profits from the film industry (\$200,000 in 1994) are providing the operational funds of the Lower Seymour. Pressure from the industry to discontinue its financial contributions (perhaps as a ploy), unless the Water District starts logging operations as soon as possible, has recently aided to force the Water District to consider a plan for sustained yield logging of the entire Lower Seymour. This plan was introduced and discussed before the Water Committee, who later convened a special meeting at the Seymour Dam conference room on November 2nd, 1994, to decide on this matter. There were some Water Committee members who were opposed to the logging plan, such as the following observations from New Westminster Mayor Betty Toporowski:

I think we've had a philosophical departure from the way we've formerly operated in the watersheds. I think that's significant. And I think it is contradictory to demonstrate logging, if that's not what we're doing. I think it would be very difficult and expensive for the Communications and Education (Department) to deliver that message clearly, that we're actually showing one thing and doing something else inside the watersheds.... It still takes out a message that is inconsistent with the policy that we've developed.

As much as I agree that forestry is a big employer in the province of B.C., I think there are lots of opportunities for the forest industry to get out that message ... and I don't think the Water District needs to serve that purpose.

Four options for the Lower Seymour were presented before the Water Committee in the spring of 1994, one of which included making the area into a park. As expected, this option was not encouraged to be taken seriously.

But before any logging plans of the Lower Seymour are approved, the Water District is obliged to conduct an ecological inventory to assess proper physical and wildlife characteristics, studies which will not be as rigorous as those being implemented in the watersheds. Environmental groups such as SPEC (Society Promoting Environmental Conservation) have recently criticized the focus of the ecological inventory and the associated plan to log the Lower Seymour.

Much like other contentious areas in the province where the forest industry sector has long-term intentions, there has been little motivation to implement a good system of public trails in the Seymour Demonstration Forest, because trails open proposed logging zones for people to scrutinize and enjoy. There are excellent opportunities for trail building through some of the few remaining old growth stands and connections to existing and future trails into Lynn Headwaters Park, the Seymour Park area, and the recent Provincial Park at Indian Arm.

13. SUMMARY

There are good reasons to suggest that the logging operations in the old growth forests over the past 30 or more years in the Greater Vancouver watersheds occurred because of erroneous arguments by foresters to our administrators. Public concerns about the long-term effects of erosion from forest management practices were placated by foresters who argued that it was a greater risk to our water quality to not manage the forests than to continue with the Water District's policy of "single-use" protection. However, critical studies in the field of forest sciences indicate the opposite, studies which are entirely neglected in this booklet.

In conclusion, this critique demonstrates that the GVRD has not been forward in presenting the public with good information. This fact alone should make one question the intentions of this booklet. The related fact that this booklet is to be circulated throughout our educational systems, in order to promote continued management practices, is quite disturbing.