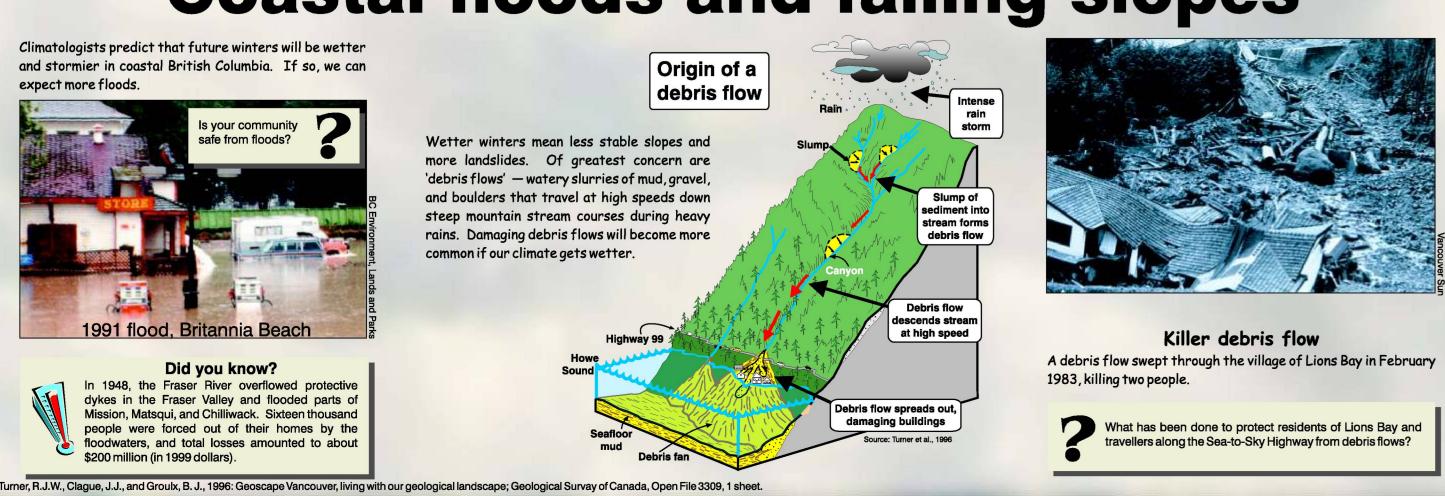


## Coastal floods and failing slopes



# 

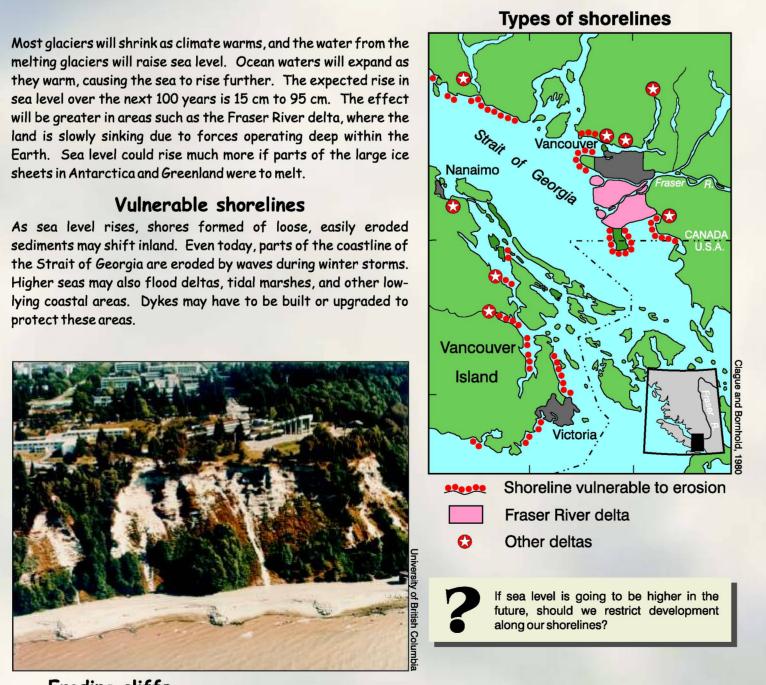
# Climate change in southwestern British Columbia



? water supplies ? food production ? human health ? biodiversity ? ecosystem health ? sea-level rise ? weather extremes ? environmental refugees ?

We are altering the composition of the atmosphere, causing climate to change Scientists predict that by the middle of the twenty-first century, average temperatures in southwestern British Columbia will be several degrees warmer than today, and that winters will be wetter and summers drier. Such changes would be the largest and most rapid of the last 10 000 years and would have profound effects on our lives and the ecosystems that support us. We are all in this together. Climate change is a global issue, not just a regional or local one the atmosphere has no borders!

## Rising seas Salmon in hot water



affect the habitat, food

supply, and migration

bird species will increase, and

protect these areas.

The sea cliff at Point Grey near

retreated at rates of up to

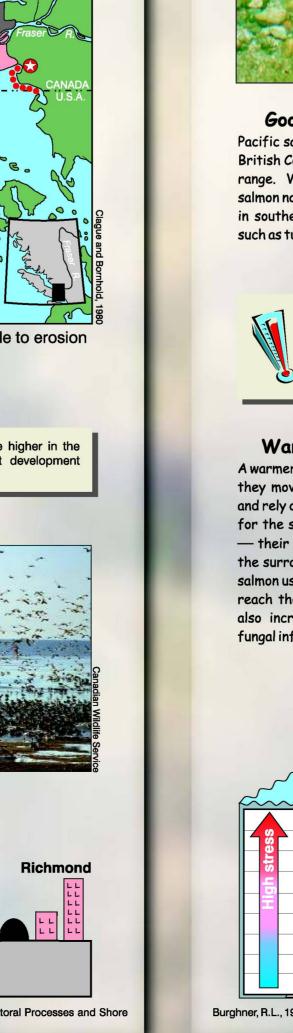
at the shore to protect the

base of the cliff from wave

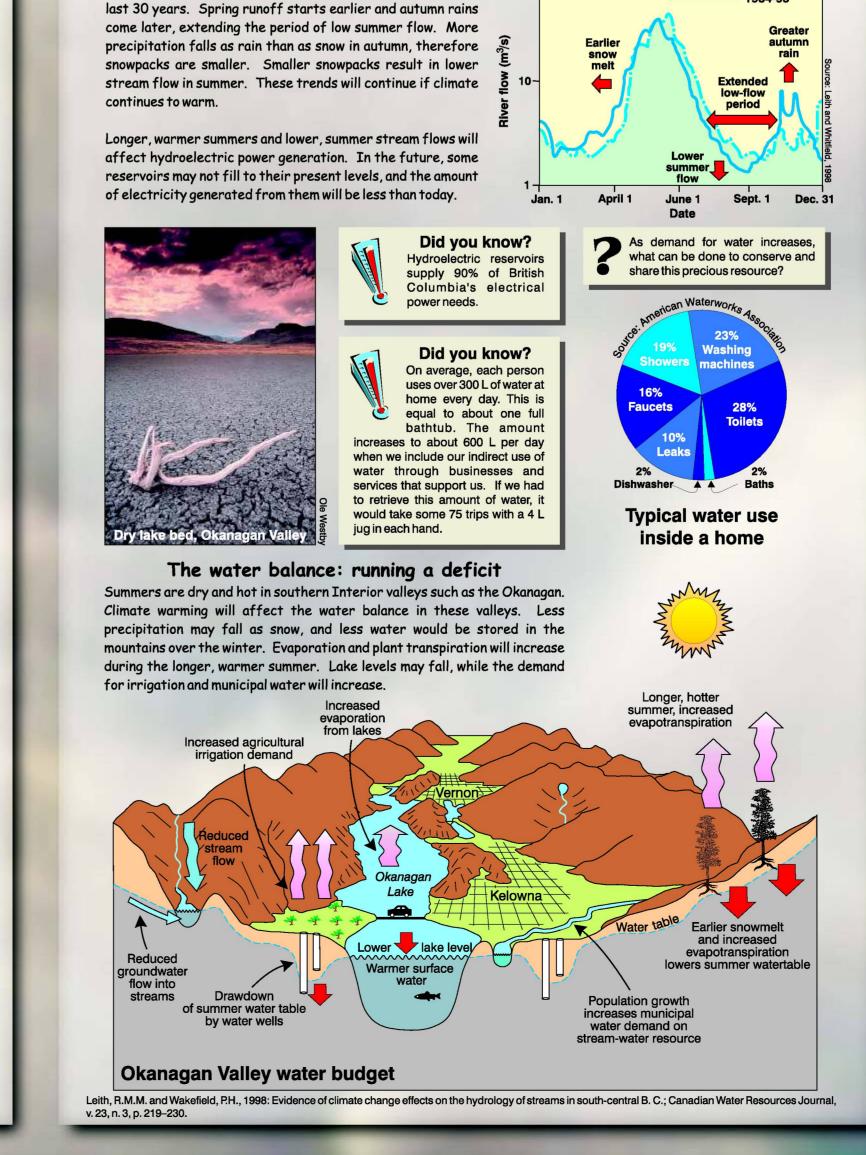
waterfowl, shorebirds, and salmon fry. A rise in sea level

may drown the marshes or squeeze them against sea

dykes that protect Richmond, Ladner, and Delta.

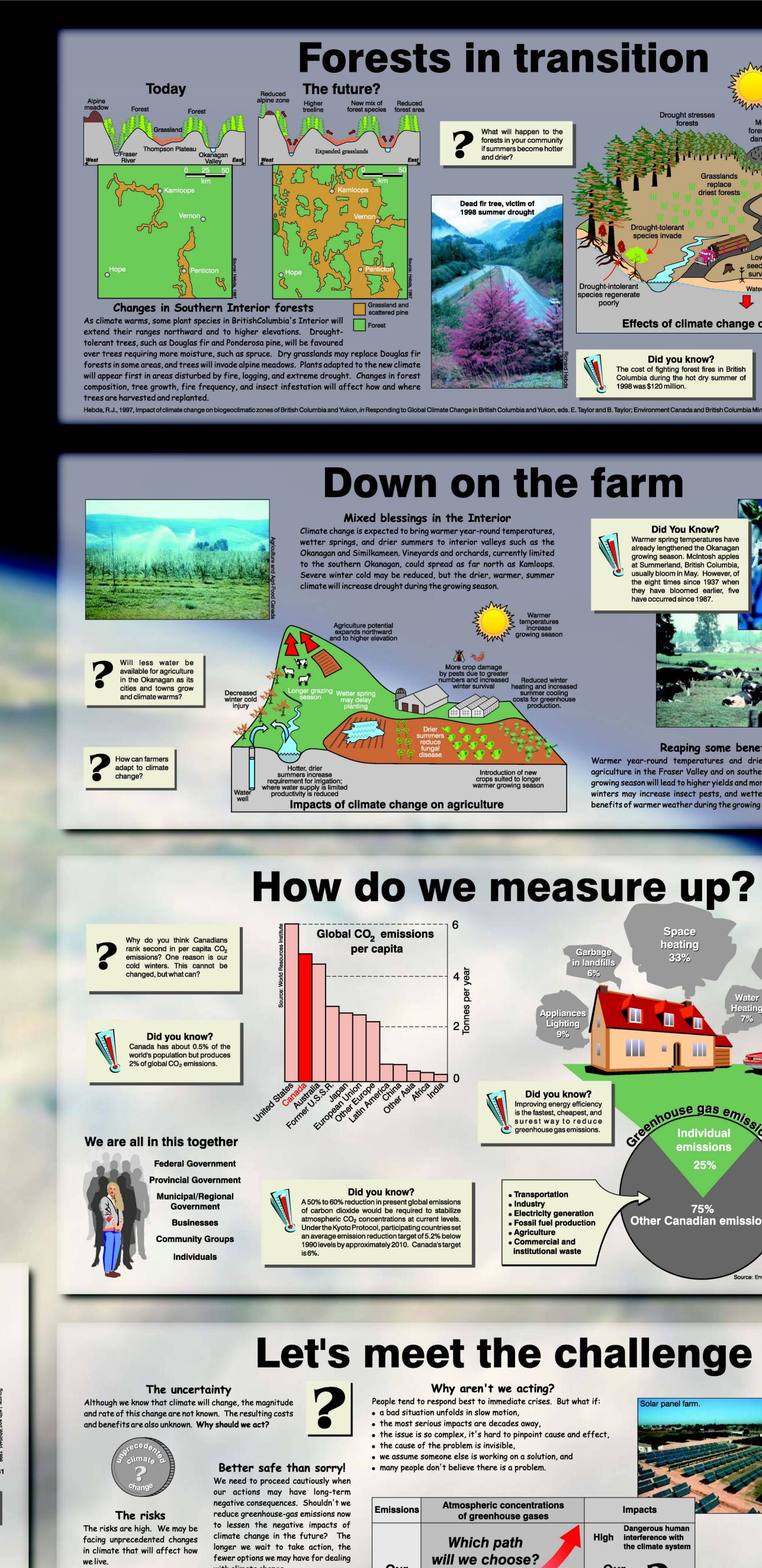


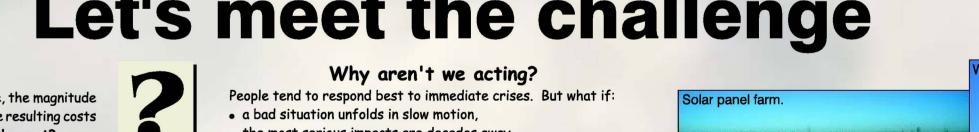
### Goodbye salmon, hello tuna? Pacific salmon live in cool ocean waters. Southern for salmon British Columbia is near the southern limit of their range. Warming of the North Pacific could force salmon northward, reducing their numbers in rivers range of sockeye salmon in southern British Columbia. Warm-water fish, such as tuna and mackerel, may take their place. What can be done to ensure that salmon continue to survive in our rivers? Mackerel, a warm-water fish species, has been found in recent years in the waters off Vancouver Island. There is concern that mackerel may eat young salmon, further depleting stocks. What impact would fewer salmon returning to spawn in the Fraser River and its Warmer rivers stress salmon tributaries have on the economy of British A warmer climate also poses problems for salmon as they move upriver to spawn. Salmon stop eating and rely on stored fat when they enter fresh water for the swim upstream. Salmon are cold-blooded — their metabolism is tied to the temperature of the surrounding water. If the water is too warm, salmon use up their energy stores and are unable to reduced snowpack, reach their spawning grounds. Warmer waters also increase the risk of bacterial and fungal infections in salmon.

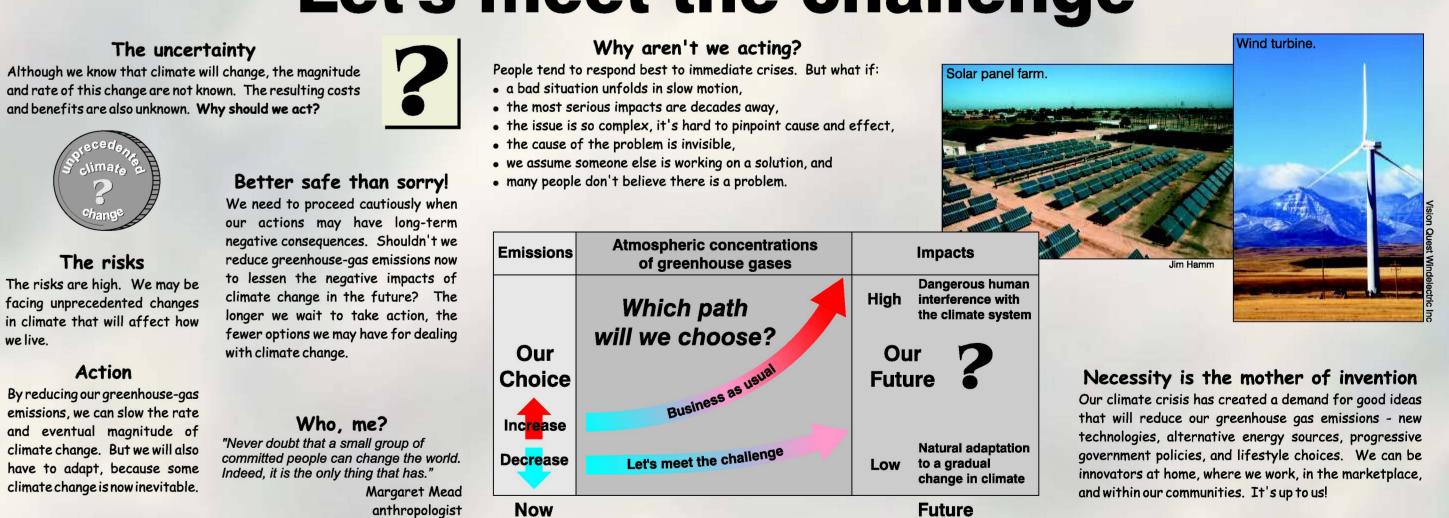


Low-water blues

Stream flow in the southern Interior has changed over the









global climate change in British Columbia and Yukon.

Volume I of the Canada country study: climate

impacts and adaptation; Environment Canada and

Cartography: Christine Davis-Verrico and Richard Franklin E. Taylor and B. Taylor (editors), 1997: Responding to

Temperature Rising - Climate Change in Southwestern British Columbia Addendum to Volume 1, Canada Country Study, Environment Canada Geological Survey of Canada, Miscellaneous Report 67, 1999 Authors: Robert J.W. Turner and John J. Clague Natural Resources Canada, Geological Survey of Canad Graphic design: Bertrand J. Groulx

Central image by Robert Kung and Bertrand Groulx Project management: Bill Taylor (Chair), John Clague, Nancy Grenier, Eric Taylor, Robert Turner Contributors: Bill Taylor, Eric Taylor, Nancy Grenier, Marnie Olson, Tim Turner, Claire Despins, Bob Elner, Jackie King, Scott Smith Education committee: Nancy Grenier (Chair), Barbara Campbell, Claire Despins, Bruce Ford, Linda Gagno, Kathy Goddard, Marnie Olson, Paul Whitfield

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British Columbia Ministry of Forests Canadian Institute for Climate Studies David Suzuki Foundation Catherine Fitzpatrick, Richard Hebda, Keith Heidorn, Henry Hengeveld, Stan Liu, Linda McMahon, Environment Canada, Environmental Adaptation Research Group Trevor Murdock, David Spittlehouse, Bruce Thomson, Rick Thomson, Tim Turner, Paul Whitfield Fisheries and Oceans Canada, Pacific Biological Station Fisheries and Oceans Canada, Institute of Ocean Sciences Greater Vancouver Regional District Natural Resources Canada, Canadian Forest Service Pembina Institute for Appropriate Development Royal British Columbia Museum

> Sea to Sky Outdoor School of Environmental Education **unding** provided in part by the Government of Canada Climate Change Action

Environment Canada, Pacific and Yukon Region

Simon Fraser University, Earth Sciences

Other participating agencies

How will the British Columbia forest industry adapt to climate change?

The average car produces its own weight in CO2

How can you help reduce

consumer, as a voter, through community involvement?

these emissions—as a

emissions each year.

of salmon cause salmon to British Columbia Ministry of Environment, Lands and burn energy faster Parks, 350 p. Library catalogue number QC981.8C5F87 1997 Fund and the Georgia Basin Ecosystem Initiative of Environment Canada Clague, J.J. and Bornhold, B.D., 1980: Morphology and littoral processes of the Pacific coast of Canada; in The Coastline of Canada, Littoral Processes and Shore Burghner, R.L., 1991: Life history of sockeye salmon; in Pacific Salmon Life Histories, University of British Columbia, p. 3-117

Salmon die

en route due

to exhaustion

increase bacterial/

fungal infections

Warmer waters

grounds, but

fail to spawn