

GEOG 1000 – Assignment 4

Reading assignment: *Climate Change and Threats to Boreal Freshwater*. From “A Forest of Blue: Canada’s Boreal” Report out of the PEW Environment Group

<http://www.pewenvironment.org/uploadedFiles/PEG/Publications/Report/PEGBorealWaterReport11March2011.pdf>

Date Due: MONDAY March 31, 2014

Total Marks = 30 (8% of total grade for class)

Late penalty = 10% per day late to a maximum of 3 days.

PLEASE PRINT ANSWERS AND BRING TO CLASS BY THE DUE DATE

Make sure to include your: Name; Student ID; and Email

This report includes a number of interesting topics on the current state of Canada’s Boreal Forest as determined by some of Canada’s top environmental scientists (see Foreword). For this assignment, I have included the Introduction section and a section on impacts of climate change to Canada’s Boreal Forest and freshwater reserves. This assignment will give you a broad overview of expected climate impacts on Boreal forest ecosystems.

Questions: Answers should not exceed one page in total (for all three question groups). Please read the “Introduction” and “Climate change and threats to boreal freshwater” sections. Please answer in concise sentences. You don’t need to read the Foreword or lightened sections of text.

1. A) *Within the Introduction, why is Canada’s Boreal forest, specifically waterways and wetlands, important (4 marks)? B) What do they mean by “ecosystem services”? (1 mark) and give 3 short (point form) examples of the benefits that they provide (refer to an additional reference of your choice for this definition and provide website) (3 marks); C) How many wetlands have been lost in the Prairies over the last two decades (1 mark), and how much money is the US spending to restore river systems (1 mark)? (Total = 10 marks).*
2. *In section Climate Change and Threats to Boreal Freshwater: A) Why is the Boreal forest highly sensitive to changes caused by climate change and/or industry? (2 marks) B) How much is the air temperature expected to increase by within the Canadian boreal forest by 2100 (at both latitudes)? (1 mark); C) List two already observed impacts of climate change on the Boreal forest (2 marks); and D) describe what might happen in the future to precipitation and lake/pond/river water (3 marks). E) What might be one result of decreased water movement in rivers (2 marks). (Total = 10 marks).*

3. A) *Why might fish and other aquatic organisms be sensitive to climate change? (2 mark); B) What could happen to these species? (2 marks); C) Using an additional (cited) reference, what are "peatlands" and what might happen to them under increased air temperatures (4 marks)? D) Describe the characteristics of Boreal forest waterways and wetlands which would allow them to be resilient to climate change (2 marks). Total = 10 marks*