

the Water Brothers EPISODE GUIDE QUESTIONS

ON THIN ICE

1. Why is Canada's freshwater particularly vulnerable to climate change?
2. Melting sea ice in the Arctic is changing what major weather regulating system?
3. How much ice is now being lost from the Athabasca glacier each year?
4. Why is the Columbia Icefield so important for Canada's freshwater resources?
5. What kind of natural disaster can occur when large amounts of rain falls in the mountains instead of snow?
6. Besides warming air temperatures, what is one other phenomenon that can speed up the loss of glaciers?
7. Why are hydroelectric dams so crucial for Canada?
8. What group of people is particularly vulnerable to climate change?
9. How many lakes are part of the Experimental Lakes Area (ELA)?
10. What is one of the most evident impacts of climate change observed at ELA?
11. Why are the lake trout at ELA getting smaller?
12. Besides lake trout, what are some other cold-water fish species in Canada that could be affected by warming waters?
13. What percentage of the world's lakes are warming?
14. What are two spin-off affects of warming lakes that could negatively impact Canadians?
15. What is the most effective way to combat climate change?

the Water Brothers EPISODE GUIDE ANSWERS

ON THIN ICE

- 1. Why is Canada's freshwater particularly vulnerable to climate change?** A lot of Canada's water is left over from a cooler glacial period so it's vulnerable to evaporation and warming air temperatures
- 2. Melting sea ice in the Arctic is changing what major weather regulating system?** The polar jet stream
- 3. How much ice is now being lost from the Athabasca glacier each year?** Approximately 5 meters
- 4. Why is the Columbia Icefield so important for Canada's freshwater resources?** Water from the Columbia Icefield feeds some of the biggest river systems in North America that flow across several provinces/states and into three oceans!
- 5. What kind of natural disaster can occur when large amounts of rain falls in the mountains instead of snow?** Flooding is more likely to occur when large amounts of rain falls in the mountains instead of snow.
- 6. Besides warming air temperatures, what is one other phenomenon that can speed up the loss of glaciers?** Forest fires and/or dust storms
- 7. Why are hydroelectric dams so crucial for Canada?** Hydroelectric dams produce about 60% of Canada's electricity
- 8. What group of people is particularly vulnerable to climate change?** Farmers are particularly vulnerable to climate change
- 9. How many lakes are part of the Experimental Lakes Area (ELA)?** 58 lakes
- 10. What is one of the most evident impacts of climate change observed at ELA?** Lake ice is melting earlier, the lengthening of the ice-free season
- 11. Why are the lake trout at ELA getting smaller?** The warmer water at the surface of lakes and lower oxygen levels at the bottom are squeezing lake trout out of large areas, preventing them from feeding and growing as large as they used to. Point form answers that would be acceptable: 1) Less ice cover 2) Warmer water 3) Lower oxygen levels
- 12. Besides lake trout, what are some other cold-water fish species in Canada that could be affected by warming waters?** Salmon and Walleye
- 13. What percentage of the world's lakes are warming?** 90%
- 14. What are two spin-off affects of warming lakes that could negatively impact Canadians?** Increased evaporation/lower water levels and toxic algae blooms
- 15. What is the most effective way to combat climate change?** Reducing greenhouse gas emissions is the most effective way to combat climate change