

## Lecture 9 – Water

1. Canada's Water
2. Water Quality in Canada
3. Quantity and Quality: Access to Safe Water
4. Flooding
5. Water Ethics

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## Key Concepts

- How is water used in Canada; comparison to other countries
- Issues with Point Source Pollution and emerging contaminants
- Access to safe and sufficient Water - issues
- Access to water and Fresh Nations
- Exposure to floods and reduction of damage
- Water Ethics and Canada's role

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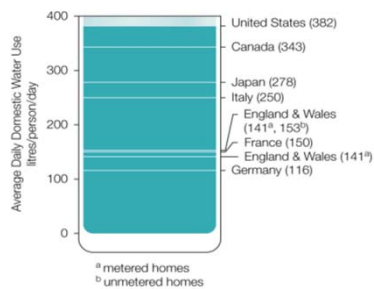
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## 1. Canada's Water

- Of the world's fresh water reserve, Canada has:
- Of the world's population, Canada has:




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## The Most Important Natural Resource?

- According to Canadian Water Attitudes Study, 2011:
- No idea of how much household pays for water use:




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## 2. Water Quality in Canada

- Environment Canada, 2006; water quality indicators at 379 monitoring stations in southern Canada
- Good/excellent:
- Fair:
- Marginal/poor:




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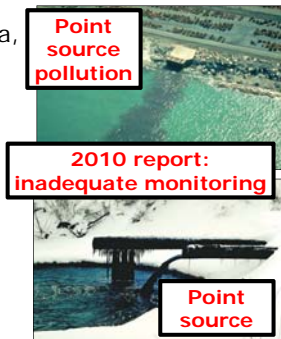
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## 2. Water Quality in Canada

- Environment Canada, 2013-2015; water quality indicators at 59 monitoring stations around the Great Lakes
- Good/excellent: 27%
- Fair: 41%
- Marginal/poor: 27%




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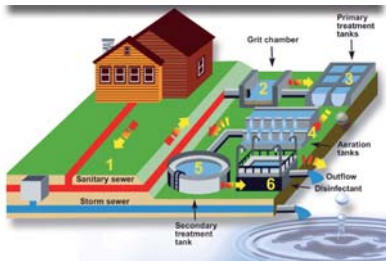
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### Water Quality: Point Source Pollution

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### Water Quality: Point Source Pollution (2)

- 2009:
- In total:



**Wastewater outfall, Moncton**

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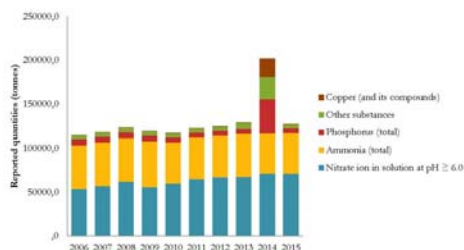
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### Water Quality: Point Source Pollution (3)

- Environment Canada (2015):




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### 3. Quantity and Quality: Access to Safe Water

- No access to sanitation:




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- Number of people who get by on less than 50 L/person/day:




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### Kashechewan, October 2005

- Health Canada discovers high levels of:




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### First Nations: Third World Conditions

- In 2014, 460,000 people living in:
- In 2001, water systems on reserves with significant risk to the quality and safety of drinking water:

#### Box 1: Boil-water advisories in Canada, by province

A CMAJ survey indicates that, as of Mar. 31, 2008, there were 1766 boil-water advisories across Canada in small towns, cities and townships, or in neighbourhoods, trailer parks and business sites. The totals by province and territory:

British Columbia	530
Alberta	13
Saskatchewan	126
Manitoba	59
Ontario	679
Quebec	61
New Brunswick	2
Nova Scotia	67
Prince Edward Island	0
Newfoundland/Labrador	228
Yukon	0
Northwest Territories	1
Nunavut	0

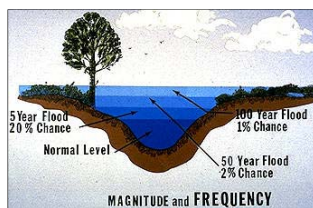
## 4. Flooding

Downtown Calgary, along the Bow River



### Reducing Flood Damage

- Structural approaches:



## Reducing Flood Damage (2)

- Non-structural approaches:




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## Canmore, Alberta, 2013




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## 5. Water Ethics

- Water resources may become:




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## Canada & Water Ethics




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## Conclusion

- A significant percentage of the world's surface freshwater reserves are found in Canada.
- Per capita, Canadians are amongst the greatest consumers of freshwater in the world
- Water quality is a major concern across the country, and particularly on First Nations reserves
- Canada has repeatedly shown poor management of its surface waters, and little concern for water ethics

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## Things to Consider

1. In Canada, we have access to 20 per cent of the world's freshwater stock and yet continue to have issues with water security.
  - Why do you think this is the case? What could we be doing in our everyday lives to ensure secured access to freshwater?
2. Twenty years ago Canadians rarely drank bottled water, but now it is consumed everywhere. Is bottled water safer or healthier than tap water? Do you regularly purchase bottled water? If yes, why?
  - Are there situations that are more or less appropriate to use bottled water? Should bottled water be exported from Canada in larger quantities?

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**TO DO!**

1. Next lecture: Chapter 10 in the textbook
2. Listen to Modules 9 and 10 on Agriculture
3. Tutorials **this week**: Group Discussion; bring the "Group Discussion Answer Sheet"
4. Term Paper **this week**: Draft of the Term Paper (**print it**) + review by a peer (bring a copy of the Review Grid to your tutorial)
5. Tutorials **next week**: Introduction to Debates
6. Quiz 2 ends on Friday, Oct. 20, at 10:00 p.m.

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