

Overview of Newfoundland Public Water Supplies

by

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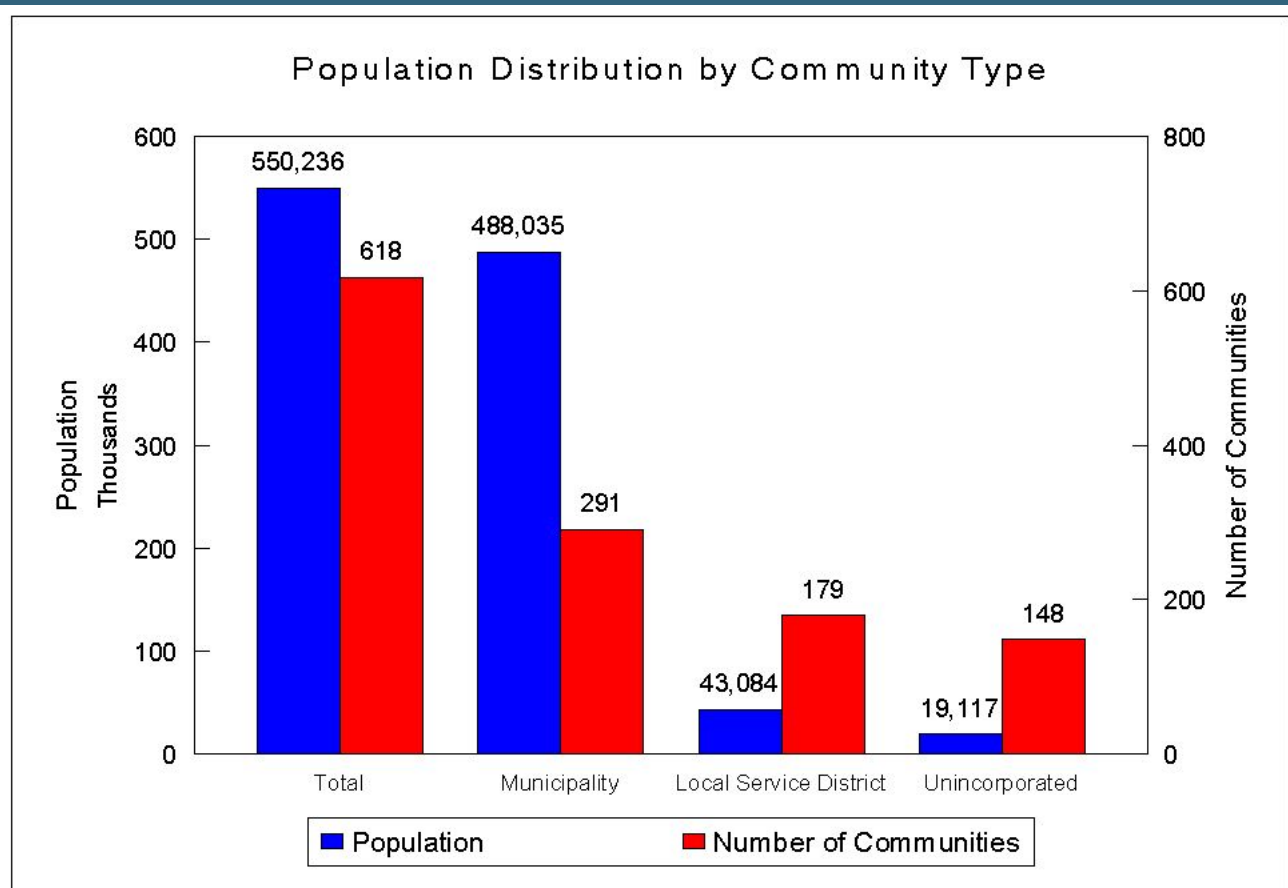


Presentation Topics

- Demography
- Water Supply Sources
- Water Treatment
- Water Quality
- What are the major challenges?
- What is being done now?
- What needs to be done?



Demography



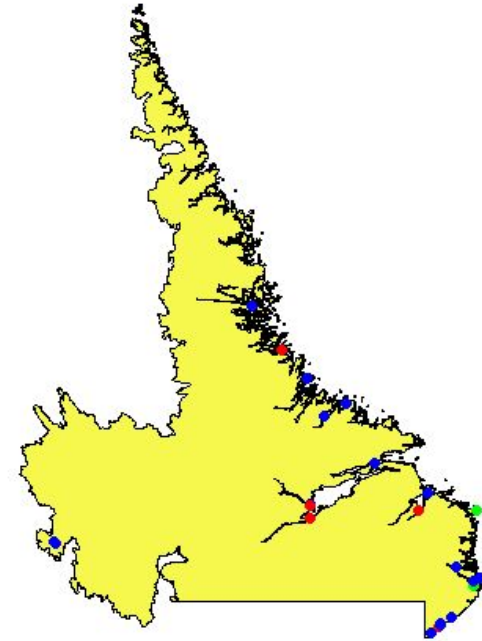
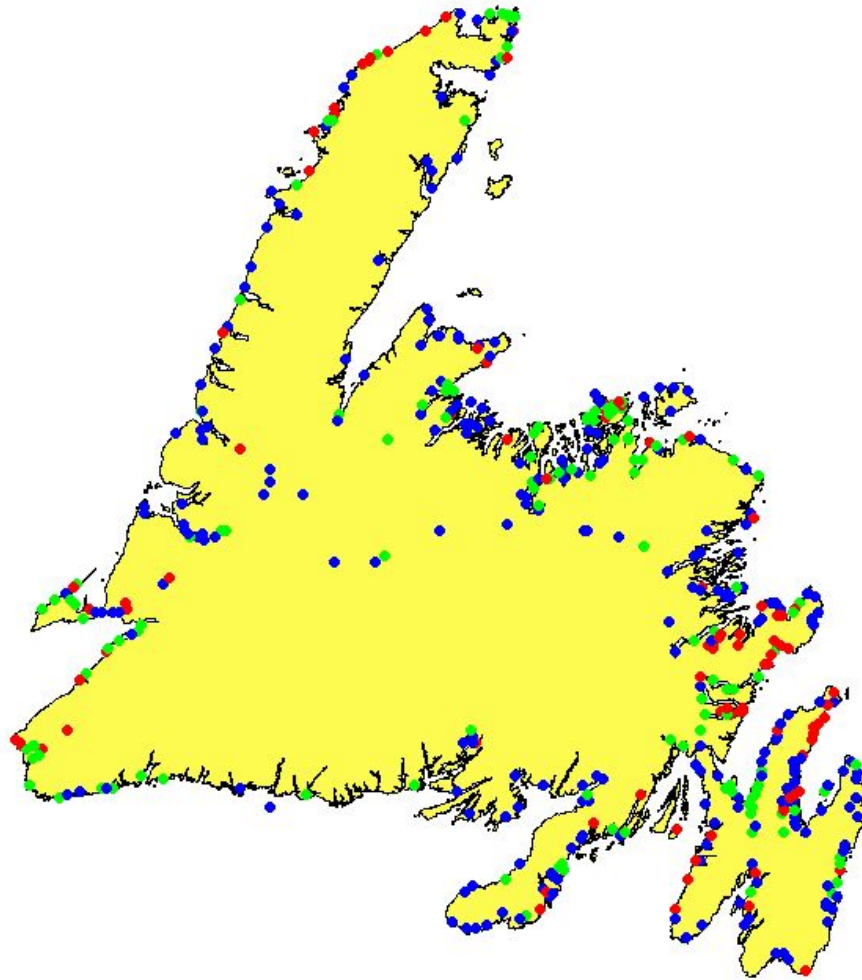
Total Population Based on 1996 Census = 551,792
Average Population of Municipalities = 1677
Average Population of Local Service Districts = 241
Average Population of Unincorporated Areas = 129

Note: Unincorporated Communities Include Native Communities



Demography

Community Locations and Status



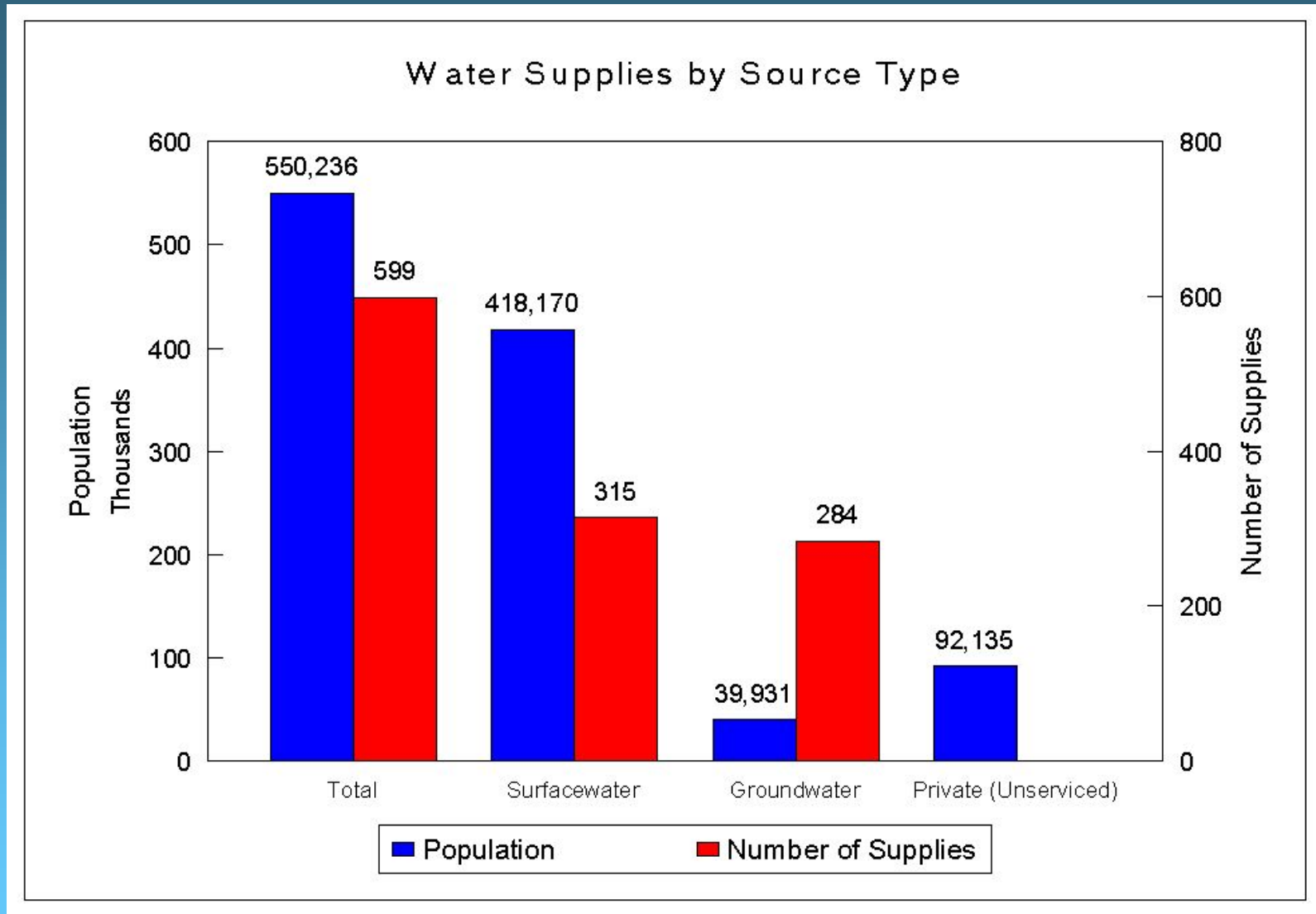
Community Status

- Municipality
- Local Service District
- Unincorporated

Total Area = 405,720 sq. km.
Area of Island = 111,390 sq. km.
Area of Labrador = 294,330 sq. km.

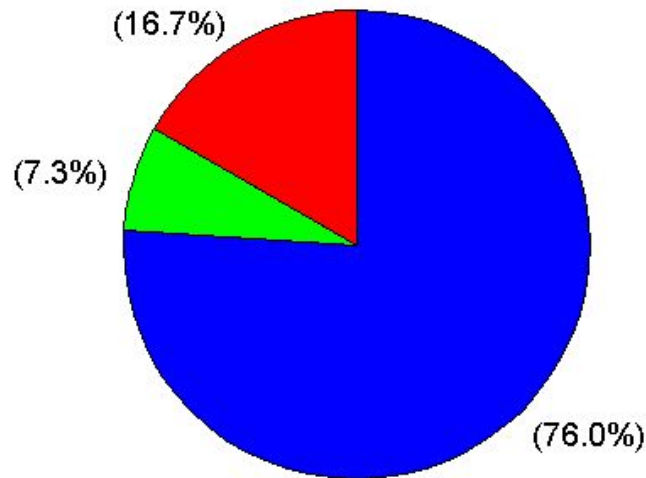


Water Supply Sources



Water Supply Sources

Serviced and Unserviced Population

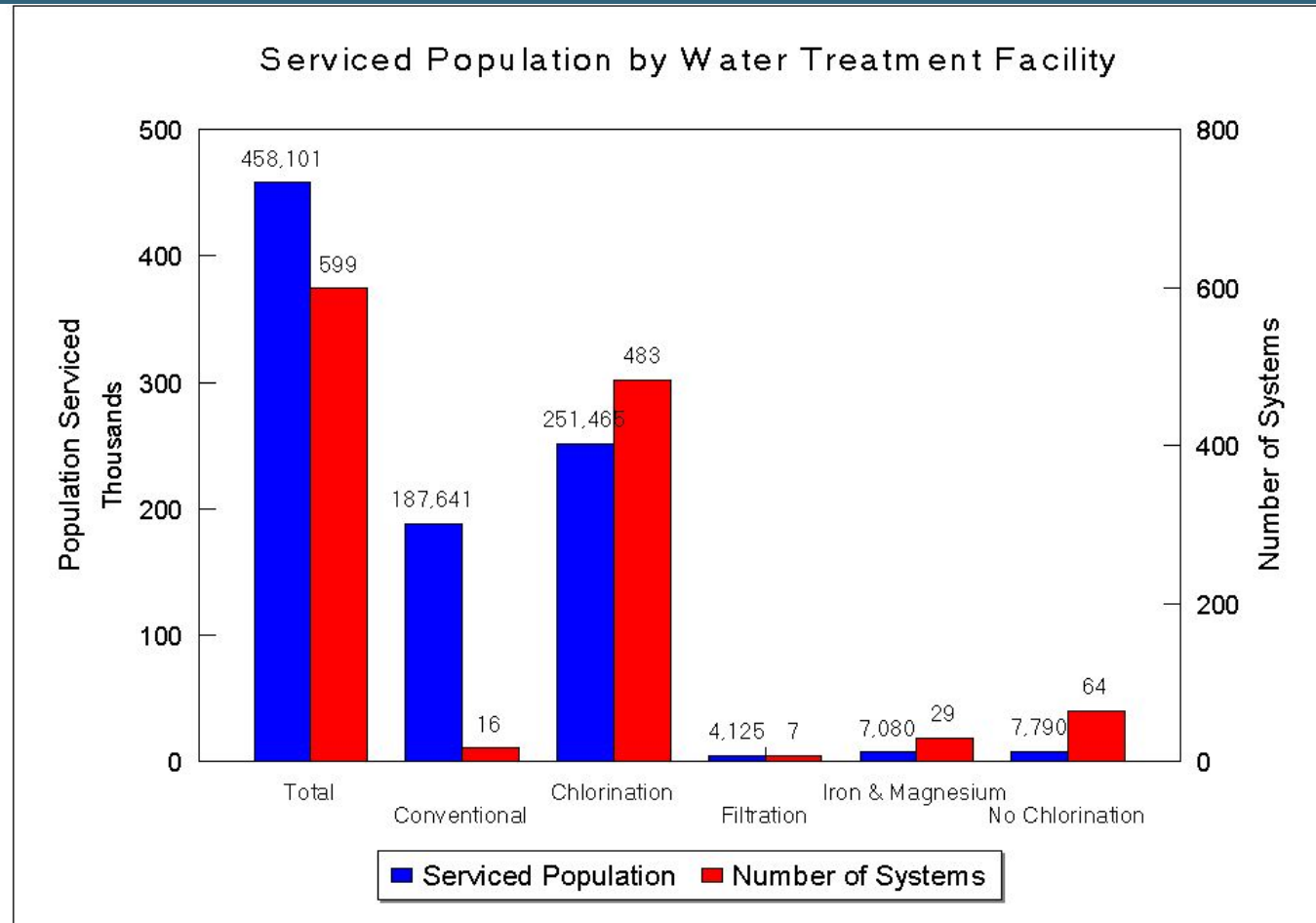


- Serviced Pop. - Surfacewater = 418,170 (76.0%)
- Serviced Pop. - Groundwater = 39,931 (7.3%)
- Unserviced Population = 92,135 (16.7%)

Total Population = 550,236
Total Serviced Population = 458,101 (83.3%)



Water Treatment



- Total Number of Water Supply Systems = 599
- Conventional Water Treatment Plants = 16
 - Chlorination Facilities = 483
 - Liquid = 370
 - Gas = 108
 - Powder = 5

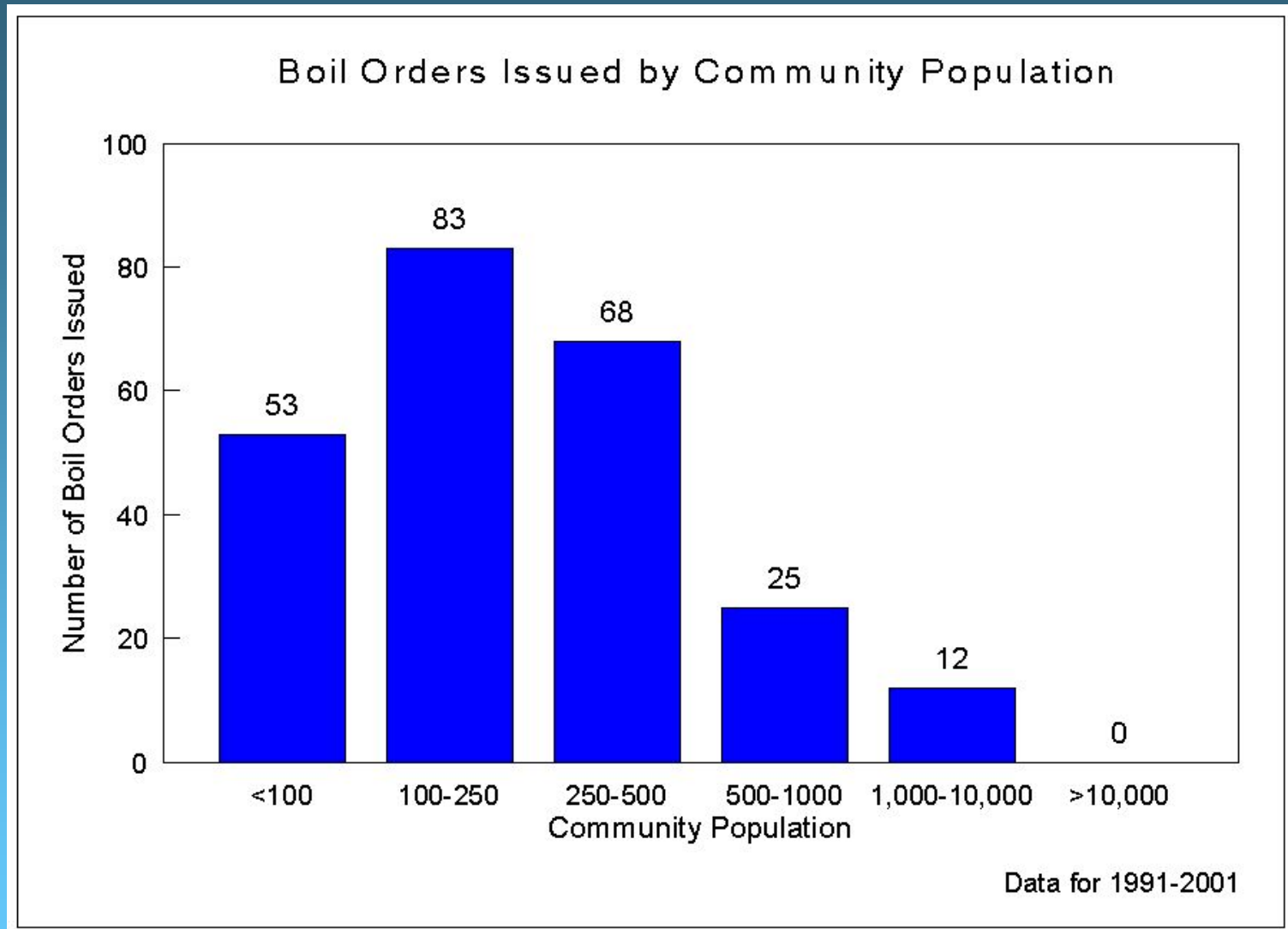


Water Quality

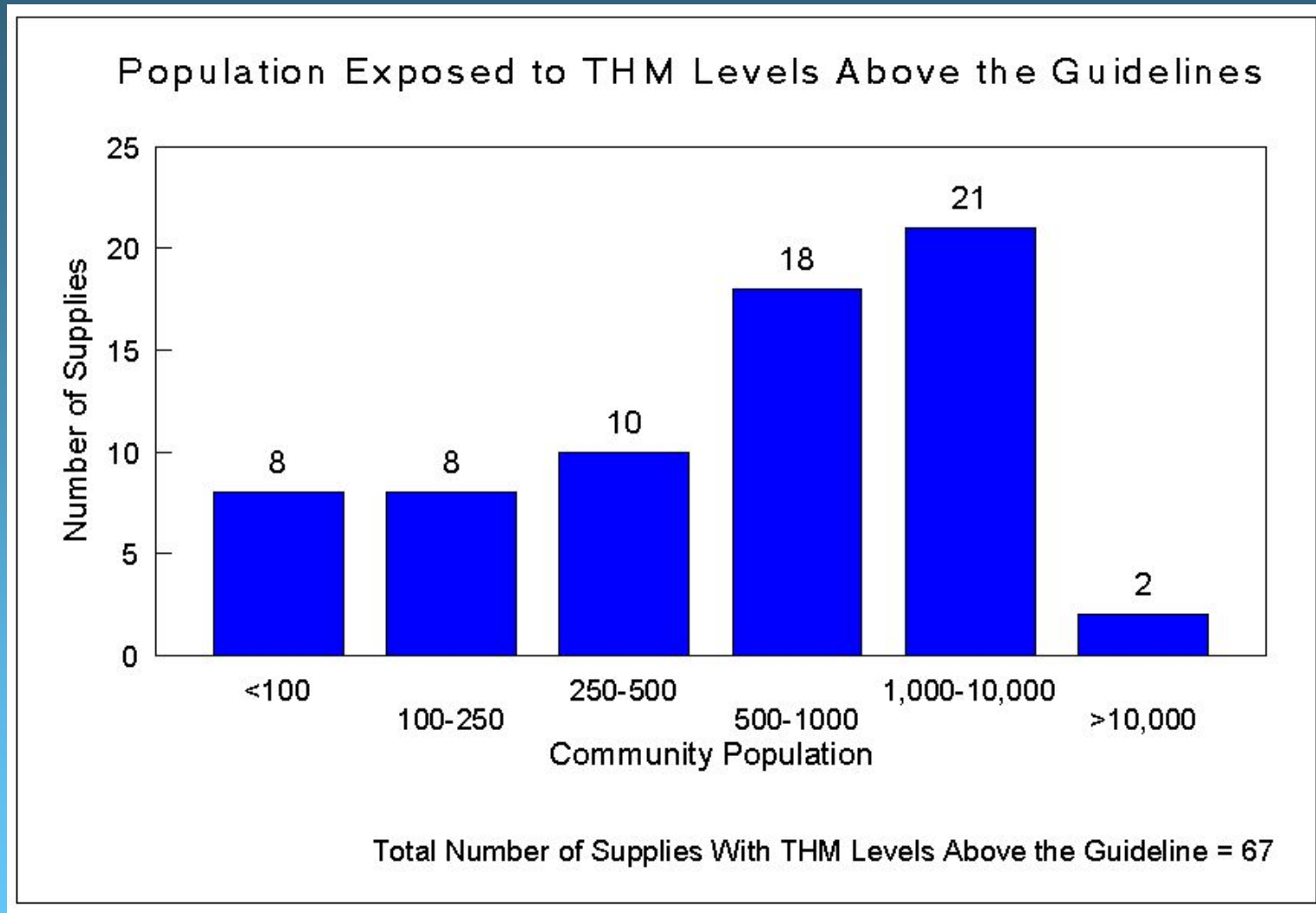
	Min	Max	Avg	Guidelines*
Colour (TCU)	1.5	266	50	15
pH (pH Units)	4.7	8.4	6.5	6.5-8.5
Turbidity (NTU)	0.10	11.80	0.60	1.0
Iron (mg/L)	0.00	0.90	0.14	0.30
Manganese (mg/L)	0.002	0.633	0.023	0.05
* Guidelines for Canadian Drinking Water Quality				



Water Quality

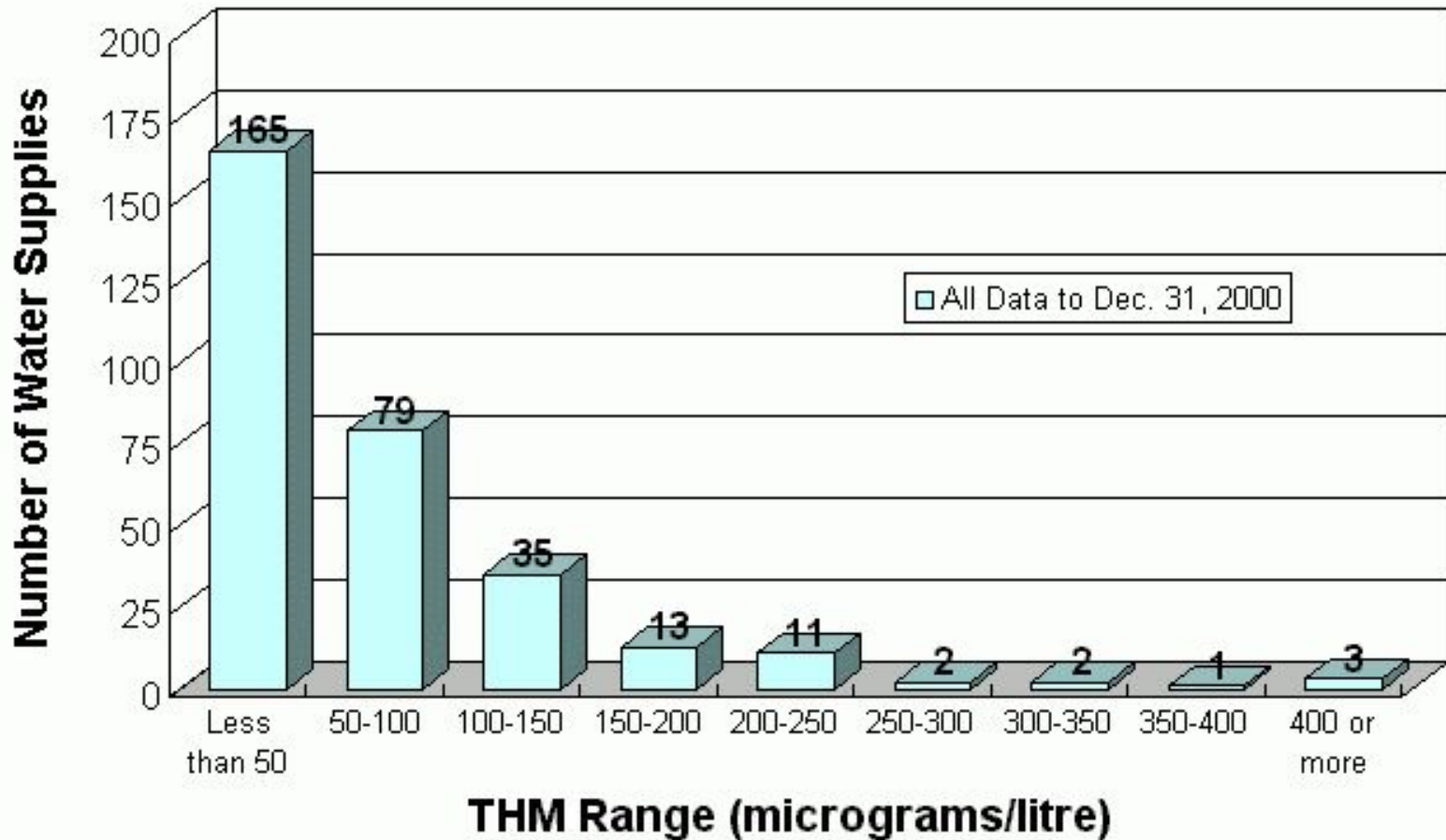


Water Quality



Water Quality

Distribution of THM Levels in Newfoundland & Labrador



What are the major challenges?

"Turning on the tap and feeling confident that the water that comes out is safe to drink is something Newfoundlanders and Labradorians should be able to take for granted"



What are the major challenges?

- Management of the water source
- Appropriate and affordable water treatment
- Sound, well-maintained and safe water distribution system
- Qualified and trained water system operator
- Effective water quality monitoring and reporting
- Leadership and communication



What are the major challenges?

"Out of 599 public water supply systems about 475 systems provide water to communities whose population range from 50 to 500. These systems are vulnerable to contamination if not properly maintained and operated."



What is being done now?

"Every possible effort is being made to ensure the integrity of public water systems and drinking water quality"



What is being done now?

- Source Protection
 - About 250 public water supply areas are designated as protected areas
- Water Treatment
 - 98.3% serviced population is provided with treated water



What is being done now?

- Water Quality Monitoring and Reporting
 - Physical and chemical water quality monitoring by the Department of Environment
 - Bacteriological monitoring by the Government Service Centre (GSC)
- Leadership and Communication
 - Interdepartmental Water Safety Committee



What needs to be done?

"Drinking water safety must be ensured using multi-barrier approach that will use a combination of measures to ensure water sources are protected and managed, waterworks systems are properly operated and maintained, water quality is regularly monitored and reported"



What needs to be done?

- Source Protection
 - Program need to be expanded to the remaining unprotected areas
 - Comprehensive inventory and assessment of water source is to be undertaken
 - Watershed management plan must be developed for high risk areas
- Water Treatment
 - Chlorination should be the minimum level of treatment in all public water supply systems
 - Additional treatment requirements must be identified on a case-by case basis



What needs to be done?

- **Water Distribution System**
 - Water distribution system must be regularly inspected for its adequacy and safety
 - Aging systems must be replaced on a priority basis
- **Training and Education**
 - Each public water supply system must be operated and maintained by a knowledgeable person
 - Regular training and education opportunities be provided to all water system operators



What needs to be done?

- Water Quality Monitoring and Reporting
 - Water quality monitoring be expanded to fill-in data gaps
 - Monitoring and reporting protocols must be followed



What needs to be done?

"Due to financial and technical limitations, small systems are at the bottom of the safety pole and highly vulnerable to contamination. Every effort must be made to address the issues experienced by small systems"



"Each and every community irrespective of its size and location must have access to clean and safe drinking water. The Walkerton tragedy has made us all painfully aware that we have to be constantly vigilant in our efforts to protect our drinking water. A tragedy like Walkerton should never happen."

