

Smart About Water

Public Drinking Water Protection in Western North Carolina

Source Water Quality Impacts in Western North Carolina

Tom Boyd

Environmental Senior Specialist

(Water Treatment Plant Consultant)

NCDENR Public Water Supply Section

Winston-Salem Regional Office

(336) 771-5080

tom.boyd@ncmail.net

51 Surface Water Intakes Winston-Salem Region

- 23 Reservoir Intakes (Lake)
- 15 Off-Stream Storage Reservoirs
(1 Day to 10 Days Supply by Design)
- 12 Run of River Intakes
- 1 Surface Spring

Two Types of Water Quality Impacts

- Human Induced



- Natural



Natural Water Quality Impacts



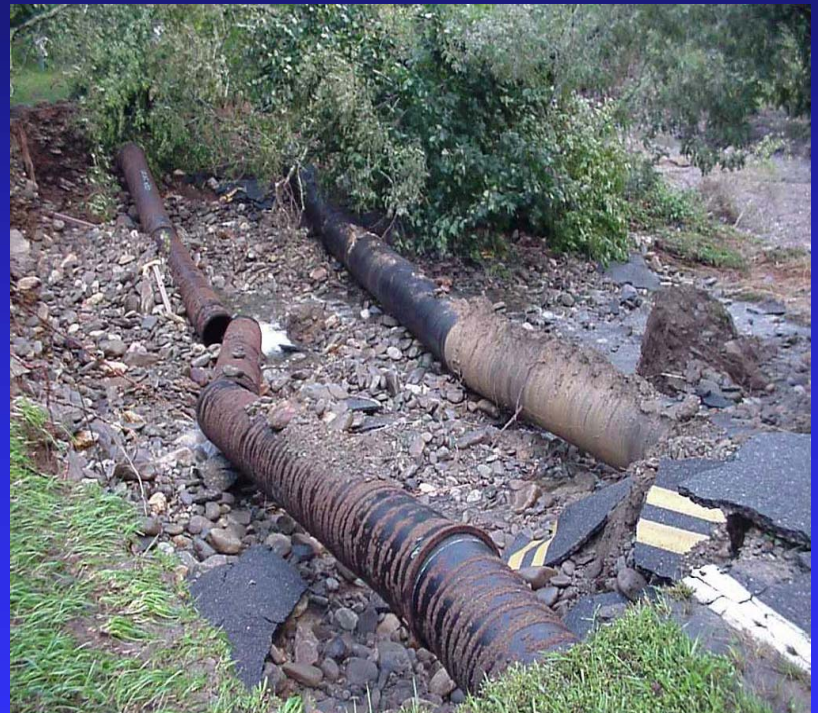
Drought

- Unavailability of Source water
- Concentration of Contaminants



Flooding

- Turbidity
- Introduction of Contaminants
- Siltation of Raw Water Facilities
- “Washing Out” Critical Infrastructure



Water Fowl Contamination

- Associated with High Bacteria Counts
- Canadian Geese Becoming A Concern
- Federally Protected
- Dogs Being “Employed” with Limited Success



Wild Animal Contamination



Human Induced Water Quality Impacts



Watershed Development

- Turbidity from Soil Disturbance
- Impervious Surfaces
- Over Nutrifcation due to Landscaping Chemicals
- Misuse of Pesticides

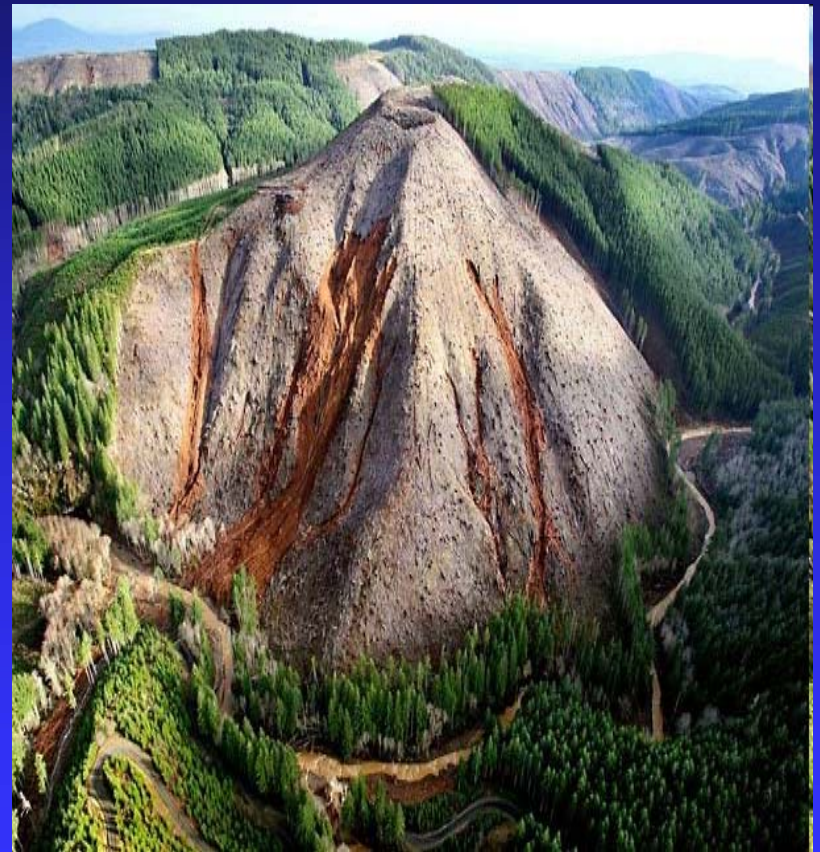
Watershed Development

- Aging Infrastructure
- Private Septic Tank Failures
- UST- Leaking



Commercial Forestry Operations

- Improper BMP
- Turbidity
- Silt



Agriculture

- Live Stock
- Pesticides
- Improper Soil Preparation
- Over Application of Fertilizer
- Over Application of Pesticides



How Do We Protect Our Source Water?

- Stream Buffers
- Best Management Plans (BMP)
- Land Stewardship
- Public Education and Participation
- Government Oversight
- Funding
- Water System Awareness

Questions?