WATER-RELATED ILLNESSES AND CLIMATE CHANGE

Summary produced by the Blackfeet Environmental Office
in cooperation with the Center for Large Landscape Conservation

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Climate change is increasing precipitation and snowmelt in late winter and early spring, increasing run-off and flood risk. Increased precipitation, heavy rainfall, and flooding are linked to outbreaks of waterborne disease. Exposure to pathogens like norovirus, rotovirus, adenovirus, *Salmonella, E. coli, Cryptosporidium,* and *Giardia* are expected to increase. Increased run-off may expose more people to contaminants like heavy metals, herbicides, and pesticides as they move into freshwater systems used for drinking and recreation. As flood risk increases, so does the risk of storm surges that can contaminate water and food supplies, especially when storms hit aging water and sewage treatment facilities. Droughts can also pose problems with water treatment by increasing concentrations of pathogens in effluent (discharged sewage).

Waste-water treatment lagoons like the ones near Browning could be impacted by an increase in storms caused by climate change. Storms can increase risk of illnesses, caused by contamination, for example by camphylobacter. Image from Google Maps.

Climate change is also predicted to increase harmful algal blooms. Blue-green algae called cyanobacteria produce neurotoxins, which are poison to people and animals. Harmful algal blooms can occur in standing bodies of water that are exposed to the sun, including lakes, reservoirs, stock-ponds, and ditches.

WHO IS MOST AT RISK?

People who already struggle to access clean water and sewer infrastructure will be more at risk. People who are at higher risk of becoming sick from contaminated drinking water also include children, older adults, pregnant women, and people with compromised immune systems. Contaminated recreational water can be particularly risky for children because they swallow more water than adults while swimming, making them particularly vulnerable to impacts from cryptosporidium and giardia exposure.

Contaminated recreational water is also dangerous because parasites such as cryptosporidium and giardia are invisible. Children and dogs can become ill from swallowing water while playing or swimming.

Photo by Kim Paul

HOW CAN WE ADAPT?

- Monitor water quality, especially after high levels of precipitation.
- Uphold high drinking water standards and practices.
- Issue advisories, and possibly close recreation areas, if water contamination is suspected or confirmed.
- Issue advisory messages about water quality and protective practices like boiling water, as appropriate.
- Keep drinking water, wastewater, and storm-water infrastructure in top condition, and prioritize replacing aging infrastructure.
- Restore and protect wetlands to reduce impacts from high precipitation events.

For more information, visit the Blackfeet Country and Climate Change website:

blackfeetclimatechange.com

Content on this page is summarized from the U.S. Global Change Research Program's report, "The Impacts of Climate Change on Human Health in the United States", the National Institute of Environmental Health Sciences' "A Human Health Perspective on Climate Change", and the Centers for Disease Control and Prevention's "When Every Drop Counts" to briefly describe some of the possible health outcomes that are most relevant to Blackfeet Country. This page does not include all possible health impacts and outcomes, nor does it include all possible risks and responses. It is important to keep in mind that our decisions and actions can influence the degree to which our community will experience these impacts to our health. Being proactive and making decisions now to safeguard health will help us be more resilient. (December, 2017)