

7th Annual Water and Sanitation Innovations for the Arctic

WATER, CLIMATE AND HEALTH



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2017 ALPHA Post-summit Session Workshop
January 20, 2017



Workshop objectives:

- **Design a plan for an “asset inventory” of at-risk water and sanitation infrastructure.**
- **Assess community-based monitoring and response strategies involving health and water-related resources/infrastructure failure.**
- **Provide an update on the knowledge shared at the Water Innovations for Healthy Arctic Homes (WIHAH) Conference.**

WIHAH

ANCHORAGE, ALASKA  2016 SEPTEMBER 18 - 21

WATER INNOVATIONS FOR HEALTHY

===== ARCTIC HOMES =====

WIHAH16.COM

C O N F E R E N C E

Recommendations:

Addressing Changing Environment:

- Develop a database of water and sanitation infrastructure, source water or treatment systems at risk from environmental change.
- Conduct a comprehensive Arctic-wide hydrologic modeling and water resource assessment.
- Develop and implement a water resource vulnerability assessment.
- Review the findings of the 2008-2009 Alaska Climate Change Sub-Cabinet to consider current relevance or informative value.

Recommendations:

Addressing Health Concerns:

- Quantify the economic consequences of inadequate access to in-home water and wastewater services, including direct healthcare costs (morbidity and mortality, healthcare expenses) and indirect costs, such as lower educational attainment due to illness, decreased subsistence and employment activities. Such analyses should include methods that account for the unique cultural context of the Arctic, including individual and cultural values.
- Conduct an assessment of how much water is needed per-person per-day to provide the best benefit for health in Arctic communities.



US Arctic Research Commission

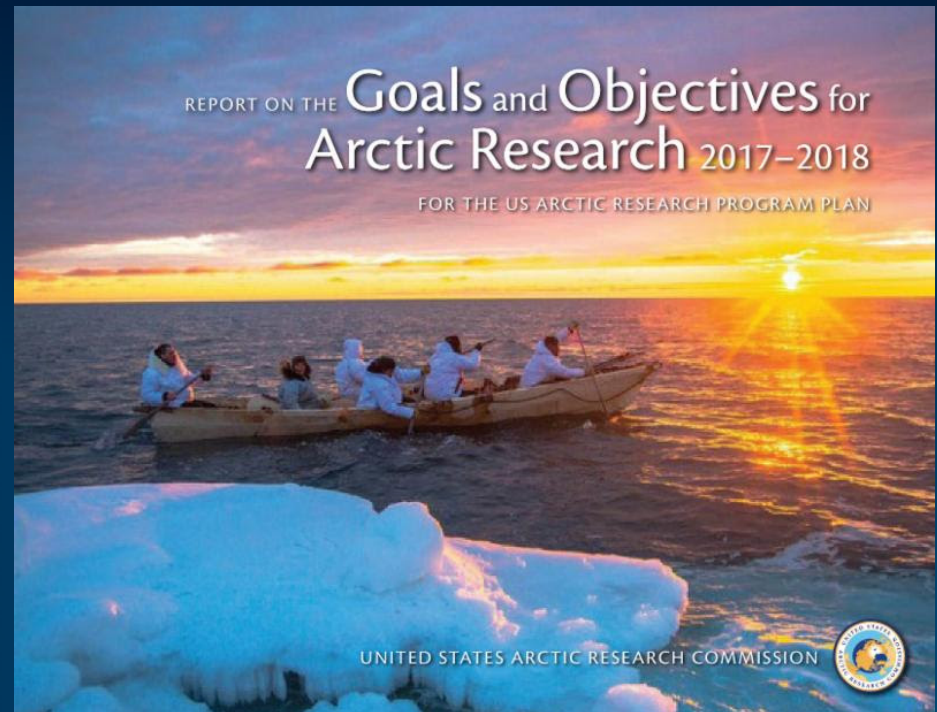
- Recommends policy to the President and Congress reflecting the advice of the scientific community, and the needs of the country
- Promotes Arctic research, federal agency coordination and international collaboration





Research Priorities

- Environmental Change
- Human Health
- Built Environment
- Natural Resources & Renewable Energy
- Cultures & Community Resilience
- International Science and Research Collaboration



ARWSWG

Alaska Rural Water and Sanitation Working Group



The Working Group's mission is to maximize the health benefits of in-home water and sanitation services in rural Alaska.

Within Alaska there are significant health disparities related to the lack of access to in-home water and sewer services. This inequity is particularly felt in remote villages. Alaska ranks last among U.S. states for the proportion of homes with running water and sewer service; approximately 22% of rural Alaskan households lack in-home water and sewer service.¹ There is strong evidence that in-home water and sewer service is linked to better health. Research in Alaska has shown that infection rates are higher among persons living without running water for respiratory, skin, invasive bacterial, intestinal infections, and dental disease. New research shows that installing in-home running water service reduces rates of these infections (Figure 1).^{2,3} **This research demonstrates that having in-home running water is directly linked to the improved health of rural Alaskans, especially young children and the elderly.**

The US Arctic Research Commission coordinates the Alaska Rural Water and Sanitation Working Group (ARWSWG), which is composed of representatives from federal, state, local, and tribal entities. The group focuses on water and sanitation in rural Alaska, its connection to health, and the impacts of climate change on water and sanitation infrastructure.

The ARWSWG promotes research on water security and the nexus of water, food, and energy security and climate change. The United Nations defines water security as the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socioeconomic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability.⁴ A report recently released by the Inuit Circumpolar Council highlights water as an integral part of food security for indigenous populations in the Arctic.⁵ Across the Arctic, lack of reliable and affordable access to water often results in extreme water conservation behavior and low use of water, leading to suboptimal health. Additionally, thawing permafrost and changes in the quality of water from lakes and rivers is affecting the water and sanitation infrastructure in communities.

ARWSWG MEMBERSHIP

- C. Eischans
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AK Department of Environmental Conservation
- B. Loefferts
Yukon-Kuskokwim Health Corporation
- T. Hennassey
Centers for Disease Control and Prevention
- D. Antrobous
Denali Commission/Alaska Native Tribal Health Consortium
- C. Rosa
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Environmental Protection Agency

¹ Healthy Alaskans 2020 Project, <http://has.state.ak.us/ha2020>.

² Centers for Disease Control. 2011. Dental caries in rural Alaska Native children—Alaska 2008. *Morbidity and Mortality Weekly Report* 60(37):1,275–1,278.

³ Thomas, T., T. Rittler, D. Bruden, M. Bruce, K. Byrd, and others. 2015. Impact of providing in-home water service on the rates of infectious diseases: results from four communities in Western Alaska. *Water and Health* 14(1):132–141. <http://dx.doi.org/10.2166/wh.2015.110>.

⁴ UN-Water Task Force on Water Security. 2013. *UN-Water Analytical Brief on Water Security and the Global Water Agenda*. United Nations University, Hamilton, Ontario, Canada, 37 pp.

⁵ Inuit Circumpolar Council-Alaska. 2015. *Alaskan Inuit Food Security Conceptual Framework: How to assess the Arctic from an Inuit perspective: Summary and recommendations report*. Anchorage, AK, 28 pp.

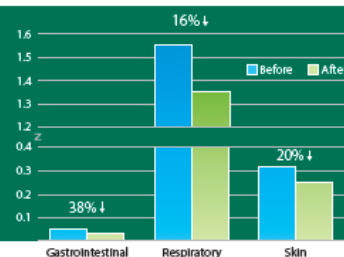


FIGURE 1. Clinic visits for water-related infections before and after installation of in-home running water in four villages in Southwest Alaska, 2007–2013.³

ARCTIC UPDATE



THE US ARCTIC RESEARCH COMMISSION DAILY EMAIL NEWSLETTER

September 2, 2015

Today's Events:

Today's Congressional Action:

The House and Senate are not in session.



Media

Obama to Announce New Climate Effort for Alaska.

President Obama will announce a series of programs to help Alaskan communities impacted by climate change during his trip to the Arctic Circle on Wednesday. Obama will travel to the Alaskan town of Kotzebue on the third day of his trip the state. While there, he will detail a handful of



administrative actions to help rural communities cope with climate change, the White House said. Obama will announce that he's directing a federal and local board called the Denali Commission to oversee climate change mitigation efforts in the state. [The Hill](#)

US, Russia United in Desire to Protect Arctic Ocean From Unregulated Fishing. As geopolitical tensions between the United States and Russia have risen, there is at least one subject about which relations are warm -- the mutual desire to protect the Arctic Ocean from unregulated exploitation by vessels chasing northward-moving fish. The

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