

## New tool assesses Arctic water resources

A new assessment tool created by University of Alaska researchers may help communities monitor and protect their water resources. The Alaska Water Resource Vulnerability Index, or AWRVI (pronounced R-VEE), is the culmination of a five-year project to collect and house existing data in one database. It's the first comprehensive water assessment tool focused on the Arctic.

One of the primary developers, Lilian Alessa, hopes communities will use ARWVI to make sound decisions about water resources.

"AWRVI is a contribution to empowering communities to manage resources on their own terms," said the UAA researcher and affiliate faculty with the UAF Water and Environmental Research Center. "This has never been done at this [watershed] scale and never for the Arctic, one of the most rapidly changing environments on Earth."

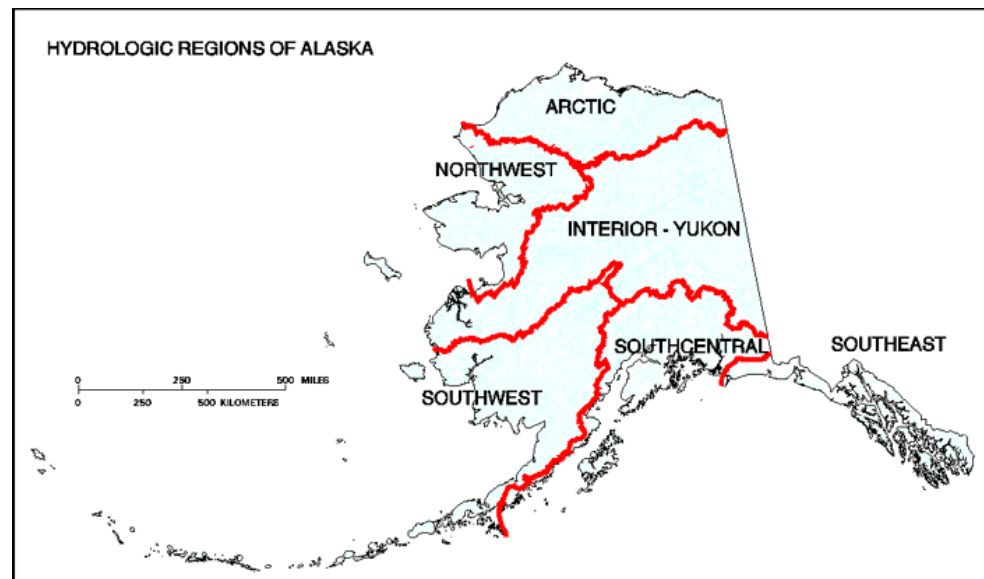
AWRVI is an offshoot of another project on the Seward Peninsula. Dan White, lead scientist and director of UAF's Institute of Northern Engineering, said Alaska's water resources are vulnerable to change and some communities are more so than

others. But ARWVI, while a good start at a centralized index of water data, won't solve community water issues by itself.

"Tools only provide information to solve problems. Ultimately it's people who solve problems," White said. "What [ARWVI] gives you is some idea of what things one might prepare for."

Alaska's hydrology is a complex process and includes extremes from rain forests to polar deserts. Most scientists believe climate change and associated changes in precipitation, permafrost and weather patterns could adversely affect freshwater resources, especially in rural communities.

"Managing Alaska's water resources requires a very flexible and local approach," White said. "You can't apply a single water management strategy in Alaska."



To assess the potential risks, the index uses data relating to the fresh water supply, precipitation and climate, river discharge, stream networks, water quality and permafrost levels. The index also accounts for traditional and Western knowledge, community wealth and the importance of subsistence.

The AWRVI then generates a resilience score, which allows a community to assess the effects of environmental change on its social health and well-being, Alessa said.

"It doesn't require new data collection. It's systematically structured so we can assess the hydrological watershed with all the information in one place."

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