

Digging into the Delta

As the saying goes, seeing is believing. But how does what we see compare to what's really there?

EPSCoR's Coordination, Integration and Synthesis (CIS) Group is working on a quantitative answer to that question by producing "P-delta-I (PΔI) assessments," which compare the difference between people's perceptions of environmental change and change as measured by instruments.

"The hypothesis is that if there's a big gap between what's actually happening and what people perceive is happening, that makes them less able to adapt successfully," said Paula Williams, a UAA research professional putting together the assessments. "It's a proof-of-concept, because this hasn't been done before."

The assessments are based on EPSCoR surveys of resource managers in Southeast and Southcentral Alaska and a survey of Southcentral fishing guides. Instrumented data includes long-term agency measurements of factors like air and water temperatures, timing of fish runs, and abundance and size of fish. Results take the form of statistical analyses, graphs and charts. Williams said findings thus far have revealed some interesting discrepancies, such as the fact that resource managers don't appear to discriminate between temperature change in glacial and non-glacial streams.

"That's really important for fish spawning, and it's kind of striking that they are not articulating that difference," Williams noted.

CIS researchers are also studying impacts of these findings by examining administrative decisions to see how they correlate to PΔI data. "We're going to compare Board of Fish decisions to recommenda-



Paula Williams

tions from the Alaska Department of Fish and Game," said Williams. "We can then look at how these decisions affect fish returns to see whether they're adaptive or maladaptive."

In addition, CIS researcher Jim Powell is gathering PΔI information from communities in Sweden and Greenland that will also contribute to the study. CIS researchers plan to disseminate their results through academic publishing, and will provide results to interviewees and other stakeholders and incorporate them into Southcentral Test Case scenario workshops.

The CIS team is also creating a web interface for the Arctic Water Resource Vulnerability Index (AWRVI), an index published in "Environmental Management" in 2008 by Alessa et al. An AWRVI is designed to provide community members information about their adaptive capacity, particularly as it relates to water resources. A community representative inputs a variety of data points into a web portal, including physical parameters such as precipitation, percent of surface water, and wastewater treatment,



CIS Group researcher Jim Powell interviews Asii Chemnitz Narup, the mayor of Nuuk, Greenland, about PΔI and adaptive capacity.

and social information such as education and income levels, subsistence use, and transportation to and from the community. The index then generates scores indicating local resilience and vulnerability. "Water is one of the most important resources for humans, we don't live long without it," Williams noted. "That was the reasoning for having water as the focus of this adaptive capacity index."

Williams and CIS Group technicians are working to make AWRVI data inputs web-accessible, and to provide completed versions to the largest communities in the EPSCoR test case areas: Nuiqsut, Cooper Landing, Sterling, Kenai, Soldotna, and Juneau. These will be available online through a dedicated AWRVI website that will also enable individuals to enter community data to create indices of their own.



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