

Forecasting coastal flooding and erosion in Arctic Alaska

Presented by Tom Ravens



Abstract: Climate warming in Arctic Alaska is leading to reduced sea ice concentrations and greater extent of open water, greater open water period, accelerating thaw of coastal permafrost, increasing subsidence and relative sea level rise, increased frequency and intensity of coastal flooding, and accelerating coastal erosion. In this presentation, the current state of knowledge

on Arctic coastal flooding and coastal erosion will be reviewed. In addition, new research on Arctic coastal erosion will be described, and preliminary results will be provided. For example, new findings on the geologic controls on Arctic coastal erosion mechanism will be presented.

Biography: Tom Ravens is Professor of Civil Engineering at UAA, and he currently serves as Associate Dean for Research in the UAA College of Engineering. During the past 10 years, Tom has been developing predictive, process-based models for forecasting coastal flooding and erosion in Alaska. In addition, he has been working to quantify the renewable (hydrokinetic) energy available in river and tidal currents, and to understand the hydraulic and sediment transport impacts of hydrokinetic energy extraction.

Tom earned his PhD in 1997 in Civil and Environmental Engineering at MIT. He did postdoctoral research at the Swiss Federal Institute of Aquatic Science and Technology. Subsequently, he was Assistant/Associate Professor at Texas A&M University. Tom joined the faculty in the UAA College of Engineering in 2007.

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