

SCC-CIVIC-PG Track A: Dynamic Modeling of Alaskan Riverine Ecosystem Stability to Improve Yup'ik Cultural Resiliency

Project Challenge

The Yukon-Kuskokwim Delta, among the world's largest deltaic ecosystems and the homeland of the Yup'ik, Alaska's largest Native community, is experiencing unprecedented levels of warming air and water temperatures. These may accentuate erosion and avulsion, sudden changes in river course, which would impact rural communities like the Yup'ik village of Quinhagak, representative of the 75% of AK communities under 1000 people. Determining where, when, and whether to move the village are Quinhagak's top priorities.

Research Questions

- What are the hazards posed to Quinhagak by (i) river erosion and migration and (ii) avulsion?
- Are river ecological shifts impacting the health of the local salmon population, important for both economic and cultural livelihood?



Pilot Vision

- Develop low-cost, technology-driven approaches to improve environmental modeling and decision-making by rural Alaskans
- Establish a database that includes satellite and drone imagery, maps, and community-based workflows to that identify areas of risk
- Deliver geospatial training that transfers skillsets necessary for managing the model and translates into workforce development



Pilot Locations:
Quinhagak, Alaska;
Fayetteville, Arkansas

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