Reducing spring flood impacts for wellbeing of communities of the North through stakeholder engagement

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Comparative Analysis

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Edeytsy, Sakha Republic - May 2013
Socio-Economic Effects

- Injuries
- Displacement
- Loss of means of livelihood
Flood Causes

River Channel Morphology
Flood Causes

Average Temperature Departure
April 1 - May 16, 2013

Significantly BELOW normal

COLDEST spring (Apr 1 – May 16th) on record at all long-term observation stations in Interior AK. Previous records being 1924 and 1964.
In early May, readings in 50’s and 60’s in the Yukon River headwaters resulted in significant melting.

BUT in Alaska below normal temperatures persisted through mid-May.
Temperatures were EXTREMELY warm the last week of May with widespread 80's across the Interior.

This pattern persisted into June and resulted high water and flooding due to snowmelt in some locations after breakup.
Flood Causes

Floodplain Management
Ice Jam and Flood Risk Reduction Strategies

- Community preparedness
- Disaster response and recovery
- Ice jam and flood mitigation
Logistical and Cultural Challenges

- Remoteness
- Limited Infrastructure
- Long winters
- Complicated history
- Limited coordination and communication
Graduate Research

• Comparative analysis
  • Community flood preparedness
  • Ice jam and flood risk mitigation
  • Disaster response and recovery

• Community-based participatory research

• Interdisciplinary research

• Stakeholder engagement
Research Methods

Roundtable discussions
• Federal and state emergency managers
• Local and tribal leaders
• Scientists

Surveys
• Population at risk

Lit review
• Historical analysis
• Documents/reports
• Academic publications
Stakeholder Engagement

**Goal:** to initiate an ongoing and interactive dialogue between those responsible for managing annual breakup flood risk and those who are affected by floods
Stakeholder Engagement

Objectives:
• To identify relative stakeholders
• To provide *all* stakeholders with equal access and capacity to participate in the dialogue
Stakeholder Engagement

Next Steps: dialogue continues in Alaska, March 11-21

Nat Haz and Risk Management in the Arctic
Open to the public

Invited Speakers:

• University scientists
• National Weather Service scientists
• Local and tribal leaders
• Tanana Chiefs Conference
• Alaska Division of Homeland Security and Emergency Management
• American Red Cross of Alaska
• Alaska District, U.S. Army Corps of Engineers
• Alaska Dept. of Environmental Conservation
• Cold Climate Housing Research Center
Stakeholder Engagement

Next Steps: dialogue continues in Alaska, March 11-21

Cross-disciplinary seminar *Northern Perspectives*, hosted by UAF Dept. of Alaska Native Studies and Rural Development

Tanana Chiefs Conference annual convention, *Arctic Athabascan Council and Climate Change Readiness and Emergency Preparedness* session

Trip to Galena, Alaska
- Surveys
- Roundtable discussions
- Visits to historical and recent flood sites
# Stakeholder Engagement

## Developing engagement

### Alaska, USA

**Federal Agencies**
- National Weather Service
- River Watch Program (NWS with Alaska Division of Homeland Security and Emergency Management).
- U.S. Army Corps of Engineers

**State Agencies and Programs**
- Geographic Information Network of Alaska
- Alaska Dept. of Environmental Conservation

**Local and Regional Agencies**
- Galena Village Council
- Fairbanks North-Star Borough

**Tribal Agencies**
- Tanana Chiefs Conference
- Louden Tribal Council

**Academic and Research Institutions**
- ACCAP, AKCSC
- University of Alaska Fairbanks
- International Arctic Research Center
- Cold Climate Housing Research Center

**Humanitarian and Faith-Based Organizations**
- Red Cross

## Existing engagement

### Sakha Republic, Russia

**Federal Agencies**
- Lena Basin Water Management
- Russian Ministry of Emergency Situations
- Russian Federal Service for Hydrometeorology and Environmental Monitoring

**State Agencies and Programs**
- Spring Breakup Flood Response and Recovery Operations
- State Committee to Ensure Health and Safety of the Population of Sakha Republic

**Local Administration**
- Namsky Region
- Edeysky District
- Yakutsk Borough

**Academic and Research Institutions**
- North-Eastern Fed. University (Yakutsk)
- Russian Academy of Sciences - Siberian Branch
- Northern Arctic Fed. University (Arkhangelsk)
Ongoing and interactive dialogue among stakeholders is crucial in reducing the impacts of breakup floods for wellbeing of Northern communities.

Many logistical and cultural challenges arise when initiating and maintaining this dialogue.

- Stakeholder groups have different goals, requirements, and communication strategies.
Recommendations

• Create an environment appropriate for the exchange of information, knowledge, and opinions

• *All* relevant stakeholders should be equally represented in the process

• Take into account cultural and socioeconomic features of *all* stakeholders

• Team up with key social leaders to gain trust among the population at risk
  • *Example: Alaska River Watch Program*
    • Over 40 years of collaboration between NWS hydrologists, AK emergency managers, and local and tribal leaders
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El-Niño and Breakup Floods