



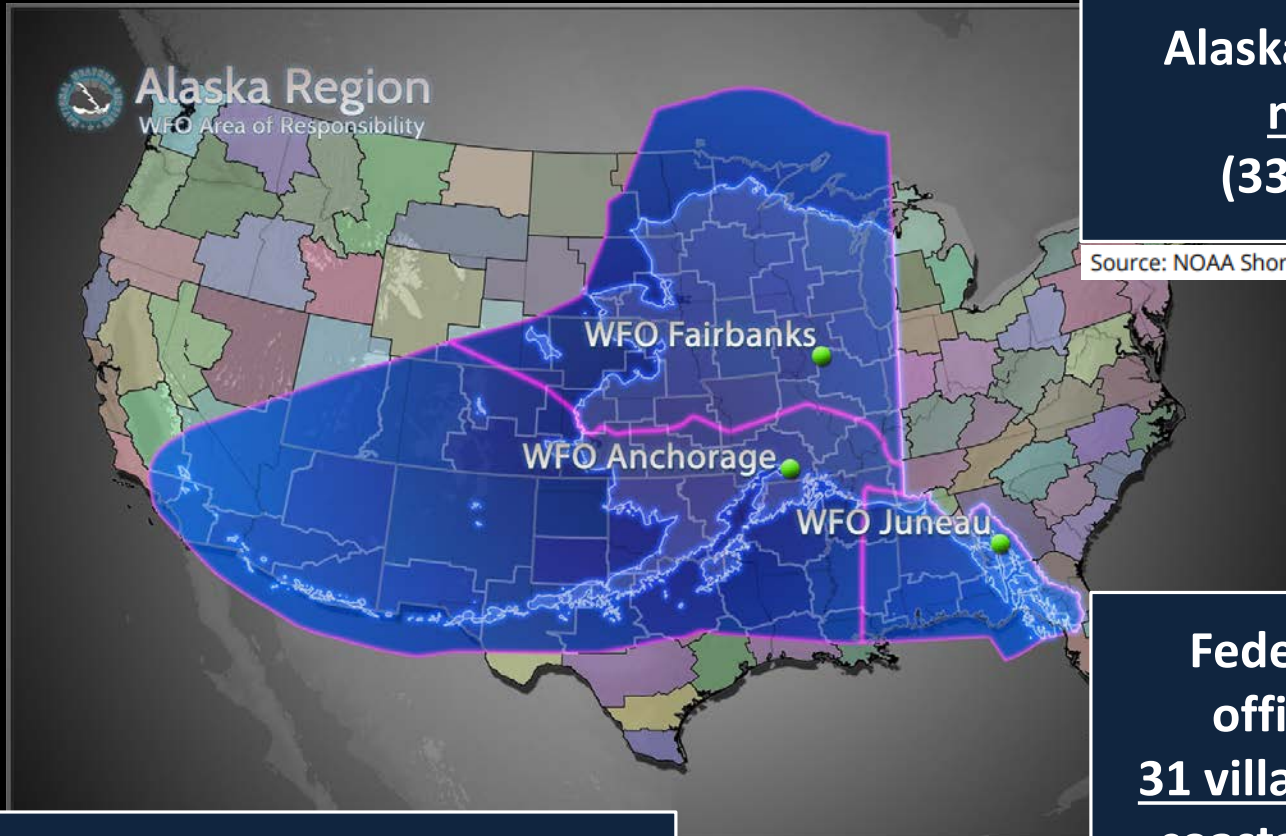
# Rivers to Oceans: NWS Reliance on Alaska Water Level Observations



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**Regional Director**  
**National Weather Service (NWS) Alaska Region**



# NWS Alaska Water Level Challenges



Alaska has over 35% of the nation's coastline (33,904 statute miles)

Source: NOAA Shoreline Website at [shoreline.noaa.gov/faqs.html?faq=2](http://shoreline.noaa.gov/faqs.html?faq=2).

Federal, state, and village officials have identified 31 villages that face imminent coastal flooding and erosion threats

GAO-09-551 Relocation of Alaska Native Villages

Water level observations are extremely limited



# NWS Alaska Water Level Needs

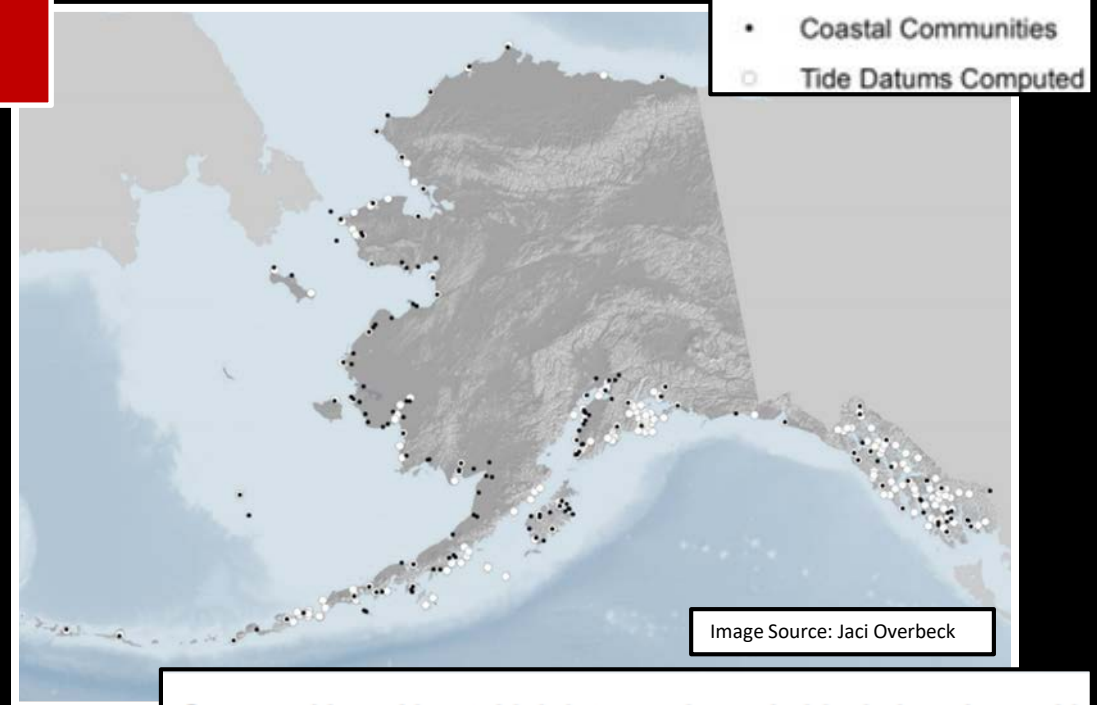
**NWS Alaska's #1 Water Level Need:**  
Good Tidal Datum along Alaska's  
West Coast



Tidal Datum feed into NOAA  
coastal storm models



Enhance NWS ability to  
provide coastal hazard  
warnings to vulnerable AK  
communities



Communities without tidal datums shown in black, locations with established tidal datums shown in white.



# NWS Alaska Water Level Needs

## Additional Needs:

- Any additional tidal stations near vulnerable communities
  - Accuracy of tidal stations within a few inches
- Community observations and impacts to be documented for future storms



September 2005

Coastal Flooding

## Hazards



Erosion

## Impacts



Fresh H2O supply  
compromised



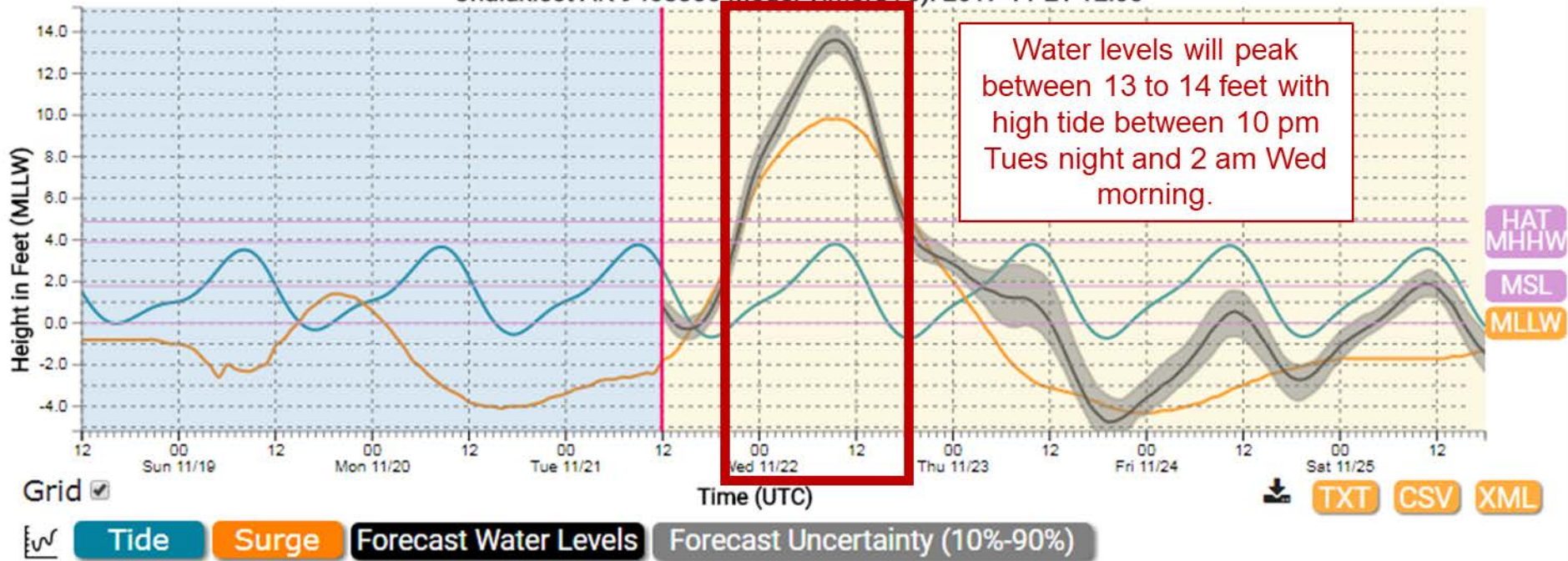
September 2005

Fuel tanks flooded  
or at risk from  
erosion



# Example from Unalakleet, AK – Nov 2017

Unalakleet AK 9468333 Model Time(UTC): 2017-11-21 12:00





# Example from Unalakleet, AK – Nov 2017

Orange is the possible area of inundation with water levels 13-14 feet.



**AOOS**  
Alaska Ocean Observing System



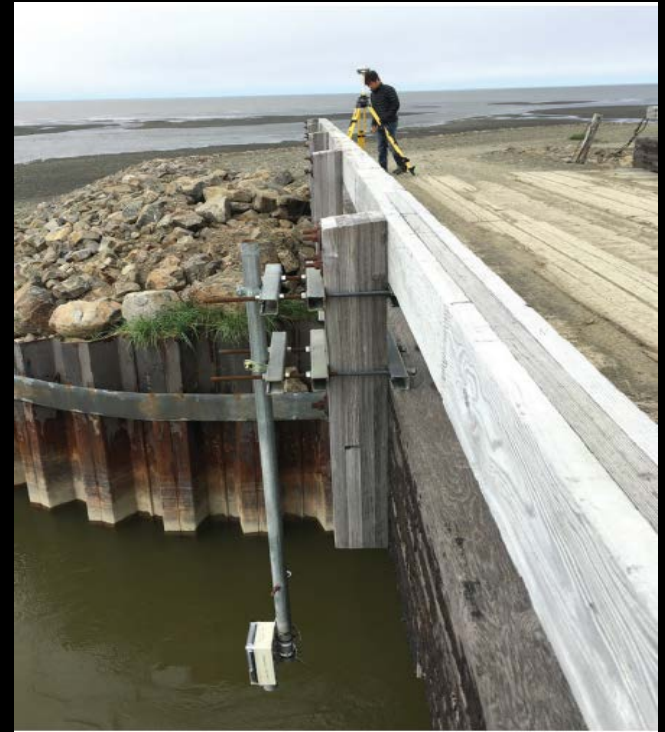
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# NWS Alaska Investment in Water Level Observations



Ed Plumb (Fairbanks WCM) showing the new NWLON gage to children in Unalakleet



iGage re-installation at Tununak by NWS forecaster Jason Ahsenmacher



NWS Regional Director at the Unalakleet tide gauge ribbon cutting ceremony