Newsletter of the Alaska-Pacific River Forecast Center and
Alaska's NWS Service Hydrologists

Kuigmek: from the river

(Yup'ik, pronounced "Kwig-mek")

January 2024

Please Note:

We know it's winter, but we're still interested in river conditions. **Please let us know if there are any anomalous river events -- mid winter breakups, uncommon ice thickness, above/below average snowpack, etc**. These observations let us better anticipate breakup issues. We can take observations through a partnership with UAF using the website Fresh Eyes on Ice (http://fresheyesonice.org/) or to us directly: nws.ar.aprfc@noaa.gov or 1-800-847-1739.

In This Issue:

Alaska-Pacific
River Forecast Center

Greetings from the Alaska-Pacific River Forecast Center!

It was a busy year at the Alaska-Pacific River Forecast Center. Last winter, above-average snowpack combined with a cold spring and delayed warm-up led to a mostly dynamic breakup, with numerous ice jams and snowmelt flooding on the Yukon, Kuskokwim, Copper, and Buckland River Drainages in May. The communities of Circle and Crooked experienced record flooding.

In June, the focus shifted to wet-season operations: forecasting river levels for over 100 points across the state, monitoring roughly 20 glacier-dammed lakes in southeast and southcentral Alaska, and many days of fieldwork to repair and resurvey some of the NWS river gages. Notable glacier-dammed lake releases in 2023 included a record event on the Mendenhall River in Juneau and concurrent releases of Skilak and Snow glacier-dammed lakes, impacting communities along the Kenai River.

The season wrapped up with freeze-up monitoring throughout the state and continued river forecasts for southeast Alaska. The winter hydrologic model development and improvements are in full swing, with preparations for next year's breakup and open water season ongoing!

Focus on: 2023 Breakup Summary - Crooked Creek

By Kyle Van Peursem

A deep snowpack and a late spring combined to cause widespread flooding on the Kuskokwim River; the community of Crooked Creek experienced catastrophic flooding, in addition to the significant flooding in McGrath, Red Devil, Napaimute and Kwethluk.

Well below-normal temperatures in western Alaska delayed breakup on the Kuskokwim by approximately 10 days. The delayed breakup and an unusually deep late-season snowpack increased the flood risk for communities along the Kuskokwim River. Similar conditions occurred in 1985, 2009, 2011, and 2013.

We would like to thank the State of Alaska Emergency Operations Center as well as the many Tribes, local leaders, non-profits, and community members that are part of River Watch. Working together for community preparedness and response to breakup each spring.

Focus on: 2023 Breakup Summary (cont.)

The Kuskokwim River Watch team activated and started daily reconnaissance flights on May 8. Even this late into May, the ice was still strong and in place. The communities of Stony River and Sleetmute broke up on May 12 with no significant ice jams or flooding.
The breakup front advanced downriver, and on May 13, a large ice jam formed just downstream of Red Devil, backing water into the community and flooding the runway and

Figure 1: Aerial view of Red Devil showing extensive flooding to the runway on the morning of May 13th.

several structures. Local observers reported that the ice jam formed earlier in the morning with rapidly rising water levels. This ice jam was only in place briefly; the breakup front progressed downriver, and flood waters receded on May 13 at Red Devil.

The River Watch team landed in Crooked Creek to relay the upriver ice jam information and local river conditions, briefing the community on the possibility of ice jamming and rising water. The ice jam formed downstream from Crooked Creek late on May 13 near Rabbit Island.

Figure 2: Aerial view of Crooked Creek flooding on the morning of the 14th, captured just after the river crested.

Focus on: 2023 Breakup Summary (cont.)

Water levels quickly rose tens of feet, flooding up to the second story of numerous buildings and forcing residents to evacuate uphill to the school. Aerial flights in the morning of the 14th confirmed widespread flooding in the community, with overbank ice and portions of the town cut off due to flooded local roads. Fortunately, the runway remained above the floodwaters and allowed for coordination and access for flood response.

Figure 3: A Crooked Creek resident pointing to the high water mark on his garage.

Figure 4: Kyle Van Peursem, standing next to a piece of stranded river ice in Crooked Creek on May 15th.

The ice jam released, and water began to recede on May 14, leaving large ice chunks stranded in the community, and several structures flooded off their foundations. The State Emergency Operations team began supporting the flood response as the floodwaters receded. Helicopters from neighboring Donlin Gold and the Army National Guard assisted with evacuation of stranded residents.

The USGS maintains a river gage on the Kuskokwim River at Crooked Creek. The gage has been operating since 1951. The USGS estimates the crest river stage to be 32.4 feet, the highest on record at this location since the gage began operating. The last major flood at Crooked Creek was in 2011, with a water level of 32.0 feet. In August, a Federal Disaster Declaration for the Spring 2023 flooding was approved, with disaster assistance made available to the State of Alaska to supplement state, tribal, and local recovery efforts in the areas affected by flooding. This declaration included Crooked Creek and other communities along the Kuskokwim River (https://www.fema.gov/disaster/4730).

Focus on: 2023 Breakup Summary - Circle

By Michelle McAuley and Josh Walston

It was a very active breakup season on the Yukon River, with historic flooding at Circle and significant flooding at Fort Yukon, Russian Mission, and Alakanuk. This year, flooding was at a level not seen since the 2013 Galena flood. Much like the Kuskokwim, the Yukon also experienced a historically cold and snowy winter that persisted into April, causing breakup to occur 7-10 days later than usual. The River Watch team, comprised of a NWS forecaster and a State of Alaska emergency manager, launched to the Upper Yukon on May 8. Their goal was to monitor the breakup process and warn downstream communities of impending flooding.

On May 9, an ice jam formed at the mouth of the Fortymile River, just upstream of the US/Canadian border, causing widespread flooding and damaging several historical buildings before finally releasing on May 12. Once this ice jam broke, it progressed rapidly through the Eagle, Circle, and Fort Yukon communities.

Figure 5: Moderate flooding in Eagle pushed ice overbank covering the access road between Eagle and Eagle *Village*. This took several days to clear.

The Fortymile ice arrived at Eagle late in the day on the 12th, flooded several buildings, and deposited ice on the road between Eagle and Eagle Village that limited access and took several days to remove. After Eagle, the breakup front kept moving - an observer 28 miles upriver of Circle reported the highest water they had ever seen at their cabin. On May 13, the Riverwatch team observed widespread flooding (trees inundated, islands covered in ice, river well out of bank) upriver from Circle. When the ice started running at Circle on May 13, the breakup front had a 90-mile-long ice run behind it.

Flooding in Circle occurred quickly; the water rose extremely fast, and major flooding was first reported around 8 pm. Overnight, there was extensive damage, with flood waters likely higher than the previous flood of record, 1945. Most structures in the town flooded; the store had water up to the first floor's ceiling, and the airport apron and taxiway were flooded. Ice was stranded along the waterfront throughout the community. By the following day, floodwaters had receded and dropped below the airport access road by 3 pm May 14.

Aerial flights the next day did not observe evidence of widespread ice jamming downstream from Circle; we believe that water levels associated with the 90-mile-long run of ice were so high that when the river slowed at the S-curves (where the Yukon flattens and becomes more braided), it was enough to send floodwaters significantly overbank at Circle. After Circle, the flooding continued along the Yukon, causing flooding at the communities of Ft Yukon on May 14, Stevens Village on May 15, Galena on May 19, and Russian Mission on May 22.

Circle and the other communities along the Yukon River affected by breakup flooding were included in the Federal Disaster Declaration and are working with local organizations and state and federal partners to rebuild.

Figure 6: Stranded ice and floodwaters on May 14th in Circle. In addition to the flooding, the water had lifted and shifted some buildings off their foundations.

2023 Breakup Summary Table

Yukon River

Community	*Flood Category**	*Flood Cause*
Eagle	Moderate	Ice Jam
Circle	Major	Ice Jam
Fort Yukon	Moderate	Ice Jam
Fort Yukon	Moderate	Snowmelt
Stevens Village	Minor	Ice Jam
Stevens Village	Moderate	Snowmelt
Holy Cross	Minor	Ice Jam
Russian Mission	Major	Ice Jam
Emmonak	Minor	Ice Jam
Alakanuk	Moderate	Ice Jam
Nunam Iqua	Minor	Ice Jam

Kuskokwim River

Community	*Flood Category*	*Flood Cause*
McGrath	Moderate	Ice Jam
Red Devil	Moderate	Ice Jam
Crooked Creek	Major	Ice Jam
Napaimute	Moderate	Ice Jam
Aniak	Minor	Ice Jam
Kalskag	Minor	Ice Jam
Akiak	Minor	Ice Jam
Kwethluk	Moderate	Ice Jam
Bethel	Minor	Ice Jam

Other Rivers

Community	*Flood Category*	*Flood Cause*
Sag River at Dalton	Major	Ice Jam
Buckland	Moderate	Ice Jam
Kougarok Road	Moderate	Snowmelt
Taylor Highway near	Moderate	Ice Jam
Glennallen	Major	Snowmelt
Central	Minor	Snowmelt
Wiseman	Minor	Snowmelt
Allakaket	Minor	Snowmelt
Koyukuk	Minor	Snowmelt
Gulkana	Minor	Snowmelt

*Flood Categories based on best available information and the NWS flood definitions.

Q & A with Yukon River Observer, Evelyn Burgett

By Mike Ottenweller

APRFC is lucky to have about twenty river observers across the state. While most of the Lower 48 has been able to install automated gages on many of their significant river systems, Alaska provides especially challenging conditions for those automated instruments (daylight, cold temperatures, heavy snow, remoteness, etc.). The River Forecast Center has turned to our River Observers for decades to help us read the rivers and protect life and property in Alaska.

Figure 7: Evelyn Burgett the NWS River Observer in Galena. The Burgett's have monitored the Yukon River at Galena for 48 years.

Allow me to introduce Evelyn Burgett of Galena. She is a born and raised Alaskan and a self-proclaimed "village girl." Her dad served in the Air Force and was stationed in AK, where he met her mom, an Alaskan Athabaskan. Evelyn grew up along the Yukon, always amazed by the power and force of the mighty river. She has served as a river observer for approximately the past 25 years! She worked for the City School District for over 35 years. Over the years, driving to work and taking her kids to school, the river observation spot was right along the way.

While Evelyn enjoys all aspects of living along the river, she is particularly astonished by the breakup season on the Yukon. "The breakup is amazing!" she says. "There is no force on earth that could stop it." Without a doubt, the breakup that stands out for her was the breakup of 2013 in Galena. She describes it simply as "a mess." She remembers that her mom lived in the Old Town, and she was cut off from her. The road to her brother's house also washed out. They had to be evacuated by boat, and she recalls the very surreal feeling of "driving" down the "road" (under the water) in a boat. She remembers camping at the Old Town on a dike where the river ice had backed up to the same height as the dike. Evelyn was evacuated that afternoon by a twin-engine airplane over to Fairbanks. She spent the rest of the summer of 2013 in Fairbanks as recovery and repair efforts took place in Galena.

"It's my connection to my Dad" - that's why Evelyn is dedicated to measuring the river daily during the open water season. Her father, Norman, started their family legacy of observing the Yukon in Galena in 1975! She would go along with him as a little girl and then took it over for him when her dad was ready to hand it off. Over the years, whenever Evelyn could not take the observation, she said she always had endless support from the community to step in and record the data in her stead. Sadly, Norman passed away in 2011. But each time Evelyn goes to the river for a reading or watches another epic spring breakup, she remembers her father. The River Forecast Center wants to thank Evelyn and all of our River Observers! Without all of you, we would be unable to carry on the mission of protecting life and property in Alaska.

National Water Prediction Service Update

By Crane Johnson

The National Water Prediction Service (NWPS) Website is Live!

The National Weather Service is modernizing our display of hydrologic information on the web with a new online interface. The changes were required to move from older computer hardware and software to newer systems that can be maintained for years to come. An experimental version of this interface launched in November of this year and is currently available for partners and the public to view:

Experimental Website: https://preview.water.noaa.gov/

The current plan is for this new site to become operational at the end of March 2024! Our original website for hydrologic information (AHPS) will continue to work for users through the end of May. At that time NWPS will be the primary source of NWS water resources information, and combines the functionality of two websites: AHPS (water.weather.gov) and the National Water Center website (water.noaa.gov). When operational at the end of March,, NWPS will be located at water.noaa.gov.

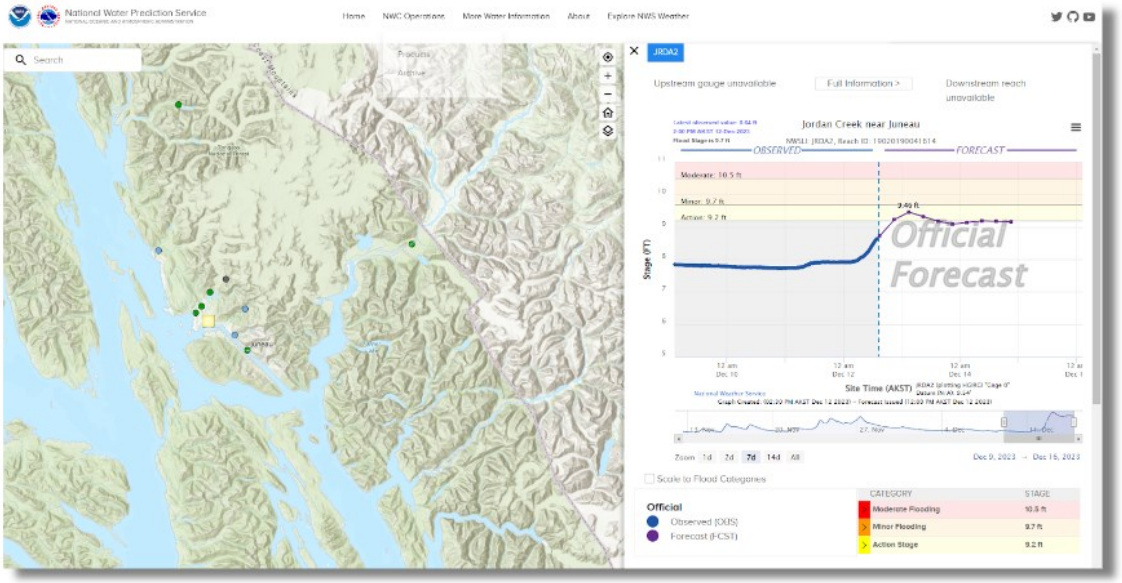


Figure 8: **Example map interface from NWPS with a dynamic slide out hydrograph. Data is dynamically updated with a reduced lag and a user selectable range of dates.**

A few key features of the new site that users will experience:

- [New] Updated map interface that combines river observations and forecasts with current NWS flood hazard information. The areas under flood watches and warnings are displayed on the same map as the river gage information.

- [New] Search functions, allows users to search for rivers by name.

- [New] Application Programming Interface (API), this will allow other agencies and developers easy access to the NWS river forecast information.

Take a look at the our story map highlighting the new website: https://www.weather.gov/aprfc/NWPS

Mendenhall's Jökulhlaup! (glacier dammed lake)

By Justin Fisher and Aaron Jacobs

On August 5th, 2023, the Mendenhall River in Juneau flooded, cresting three feet above any previous record. This flood caused significant flooding and erosion along Mendenhall Lake and River. From the flooding alone, several homes had six feet of water in them. The erosion took 20-150 feet of land in some locations, compromising multiple homes and an apartment complex.

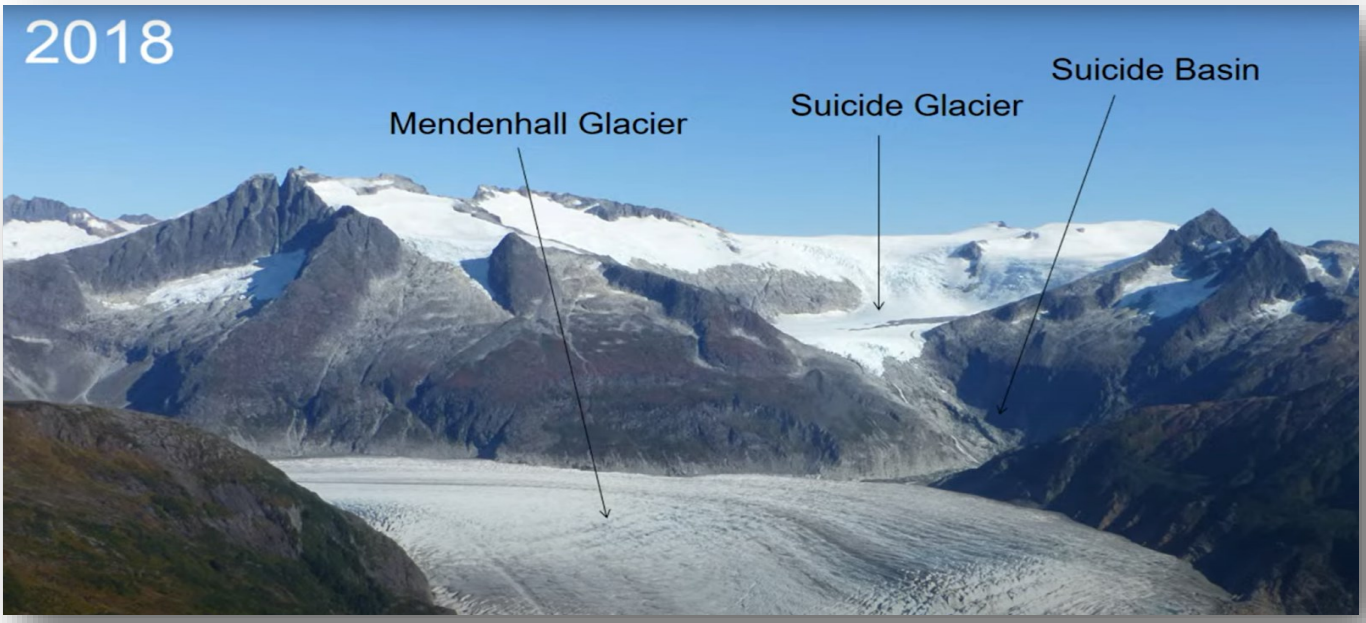


Figure 9: *Hydrograph comparing previous releases to 2023.*

Was it rainfall? Was it snowmelt? Well, yes and no. The Mendenhall Glacier dams a small alpine glacier dammed lake (GDL) named K'óox Ḵaadí, pronounced: "Kooks - Kahdi" (formerly named Suicide GDL). The water level in K'óox Ḵaadí increases with rainfall, snowmelt, and ice melt, and when it reaches a critical height, water drains - over, under, or through the Mendenhall Glacier. The K'óox Ḵaadí GDL is nothing new; it has released several times a year since 2011, releasing generally between 20,000 and 30,000 ac-ft. However, in 2023, it released a volume of approximately 44,500 ac-ft, roughly double previous events. The key difference this year is that K'óox Ḵaadí drained nearly empty, whereas it had only drained partially in years past.

On Friday, August 4th, before this rise started, Mendenhall Lake was near normal, at 5.5 feet. By Saturday morning, water levels were over the moderate flood stage of 10 feet. By midday on Saturday, the water levels exceeded the previous record from 2016 of 11.99 feet, and flooding was increasing along the Mendenhall River. The river continued to rise quickly throughout the day and into the evening hours, and the river crested near 14.82 feet (preliminary crest from the USGS) by 12 AM AKDT on August 6th. After the crest, water levels dropped quickly, and the Mendenhall Lake and River were back below minor flood stage of 9.0 feet by 9:45 AM AKDT on Sunday, August 6th.

As we advance, APRFC is working with the Weather Forecast Office (WFO) in Juneau, the City of Borough of Juneau (CBJ), the USGS, and the University of Alaska Southeast (UAS) to improve forecasting for K'óox Ḵaadí and the Mendenhall. UAS flew elevation imagery just after the release and created a digital elevation model of the empty basin. CBJ has funded the USGS to monitor the K'óox Ḵaadí lake levels in real-time. Combining these two data sources will allow APRFC forecasters to estimate the current lake volume and use that information to provide a more robust maximum flood forecast for the Mendenhall River.

Mendenhall's Jökulhlaup! (cont.)

Figure 10: Mendenhall River looking at Riverside Condos, a house that fell into the river, and a major damaged house.

Figure 11: 9 PM August 5th on Meander Way in Juneau.

National Water Model in Alaska is Operational

By Dave Streubel

The Alaska domain of the National Water Model is operational. It provides augmented streamflow guidance to APRFC's current streamflow modeling across Alaska. The operational National Water Model domain is limited to South Central Alaska.

Operational NWM Alaska Details

- Alaska NWM operational cycle 8X per day. Forecast horizon 48 hours -> 10 days
- Input Weather Models: HRRR, MRMS, GFS and NBM
- Output 1 hr timestep at 390K stream reaches - streamflow, velocity, lateral runoff to reach, groundwater flux
- Output grid guidance: SWE, Snowpack temp, fractional snow cover, soil moisture content, total evapotranspiration
- NWM output forecast streamflow guidance will be available this spring on water.noaa.gov

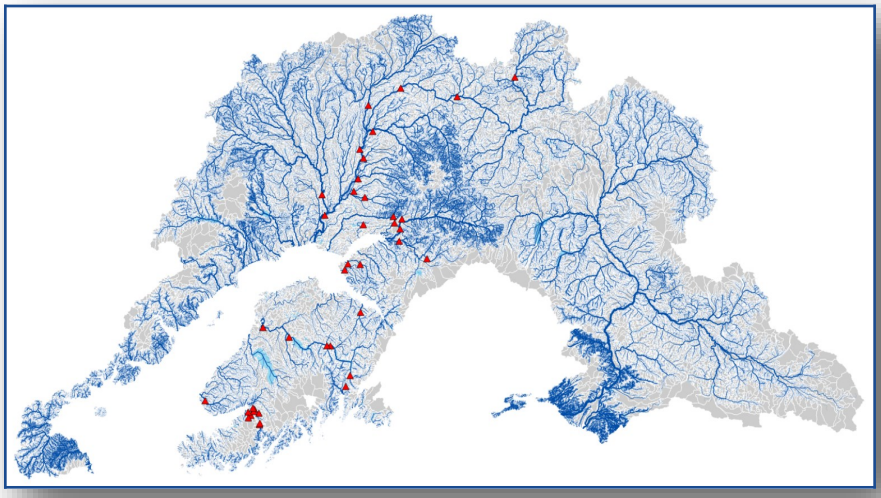


Figure 12 : Alaska Domain of National Water Model.

Fresh Eyes on Ice: *A Lake and River Ice Observation Network Integrated with Science Education for Alaska Communities*

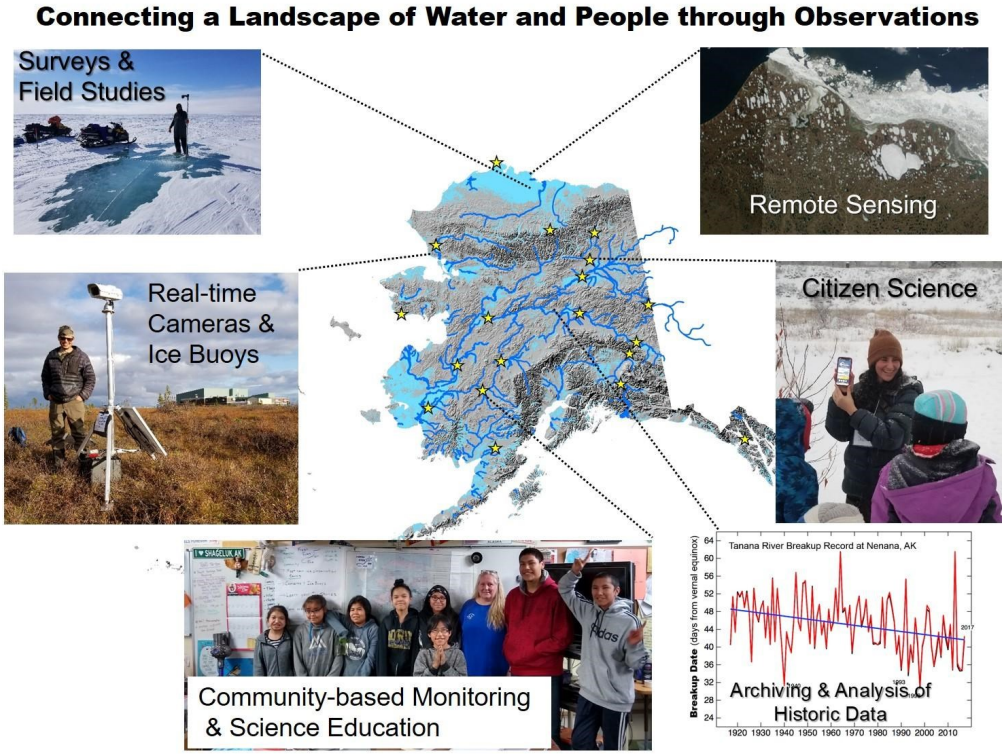
By Chris Arp and Katie Spellman

The APRFC has teamed up with University of Alaska Fairbanks and other partners to increase the number and diversity of people engaged in observing changing river and lake ice across the state. The Fresh Eyes on Ice Project engages students, teachers, and other citizen scientists around Alaska in collecting photos and ice thickness measurements to supplement the long-standing NWS River Watch program, inform public safety, document responses to climate change, and provide science education opportunities. Since 2019, Fresh Eyes on Ice has gradually expanded their observation network using real-time cameras and snow-ice buoys, satellite and UAS (drone) remote sensing, field studies, and partnerships with schools and home-school families that make regular observations in their communities. Fresh Eyes on Ice is a collaboration among UAF, NWS-APRFC, NPS, USFWS, Tanana Chiefs Conference, ADF&G, NASA's GLOBE Program, and over a dozen schools across the state. Fresh Eyes on Ice has increased the number of river and lake ice observations by more than 3900 photos and the number of people engaged in ice observing to over 2000 adults and 300 youth since 2020. The relationship between Fresh Eyes on Ice and the APRFC is hugely important and allows for the most up to date information being shared with the people of Alaska.

- Join our Facebook Group (https://www.facebook.com/groups/freshеyesonice) to exchange observations, insights, and learning opportunities
- Access STEM-related ice education resources for yourself, family, friends, and students: https://freshеyesonice.org/all-about-ice/

What's the Fresh Eyes on Ice Team focused on this Winter?

- Community-based monitoring teams (schools and families) around Alaska are documenting ice conditions of this extra interesting *El Niño Winter (https://freshеyesonice.org/view-data/cbmt-data/) and will be presenting results at our Ice Science Symposium in Fairbanks this April*
- Graduate students Sarah Clement (PhD on *Youth Participation in Ice Science), Cristina Ornelas (MS on Remote Sensing of Overflow), and Matthew Scragg (MS on Late Freezing Zones of the Tanana River) are making excellent progress on their research projects.*
- Spring snowmachine traverse between Galena and Fairbanks to visit communities including Tanana, Rampart, and Nenana and study river ice conditions. See our new outreach video highlighting a visit to Shageluk during last year's journey here: https://youtu.be/1UUhVqds8zI
- Planning for the future! We are almost in our last winter of generous funding from NSF and NASA and actively looking for new ideas and opportunities to continue this impactful program in Alaska and beyond.



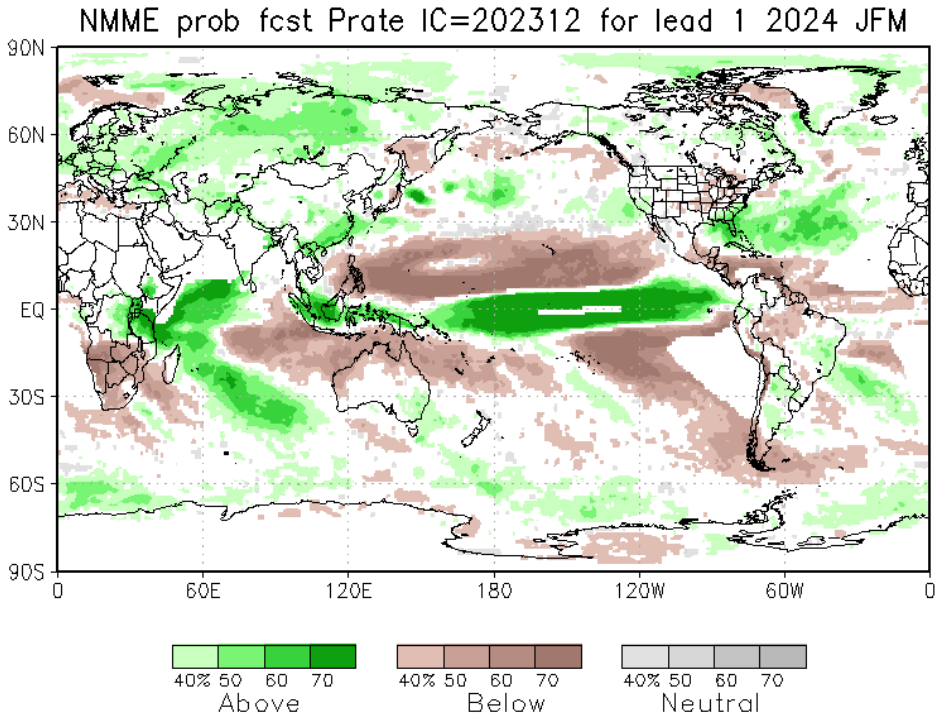
El Nino: Impacts on the Pacific Wet Season

By Kevin Kodama, Honolulu, HI Senior Service Hydrologist

The climate in the Hawaiian Islands is characterized by two general seasons: a cool/wet season from October through April and a warm/dry season from May through September. The west-facing leeward slopes need the wet season rainfall to rejuvenate vegetation that had to endure several months of generally dry conditions during the dry season.

The El Niño Southern Oscillation (ENSO) cycle heavily influences the wet season rainfall in Hawai'i. El Niño events, especially if they are moderate to strong in intensity, frequently result in statewide drought conditions, with peak dryness occurring from around mid-December through the end of February. Drought conditions are not limited to the Hawaiian Islands. Large portions of the central and west Pacific experience rainfall deficits during El Niño, which results in severe potable water shortages in Micronesia. La Niña events usually produce the opposite effect on rainfall impacts compared to El Niño, with many areas having above-average rainfall during the wet season. However, the likelihood of above-average rainfall is less certain with La Niña than the likelihood of below-average rainfall with El Niño.

Not surprisingly, given the ongoing El Niño event, the consensus of climate model precipitation projections shows a high probability of drier-than-normal conditions. The adjacent figure from the National Multi-Model Ensemble (NMME) shows the January through March 2024 precipitation rate probabilities. Brown shading indicates areas where below-normal precipitation is expected to occur. Note that a large portion of the subtropical and tropical Pacific is forecasted to have below-normal rainfall for the three-month period. In previous strong El Niño events, October through April rainfall can be less than 50 percent of the long-term average across large portions of the Hawaiian Islands, with some areas having rainfall at less than 20 percent of average.



El Niño droughts hit the hardest for non-irrigated agriculture and surface and catchment water supply systems. In Hawai'i, this mainly includes livestock producers, ornamental plant growers, fruit growers, and vegetable producers. The drought can even impact irrigated agriculture if prolonged or intense enough, as reservoir water supplies run low. Public potable water systems dependent on surface water sources can experience shortages as stream flow dwindles. Similarly, residents in homes on rain catchment systems can experience shortages as rainfall diminishes over weeks and months. In Micronesia, portable desalination units may be deployed to remote islands and atolls to provide potable water for basic needs.

2023 Field Work and River Gage Summary

By Johnse Ostman

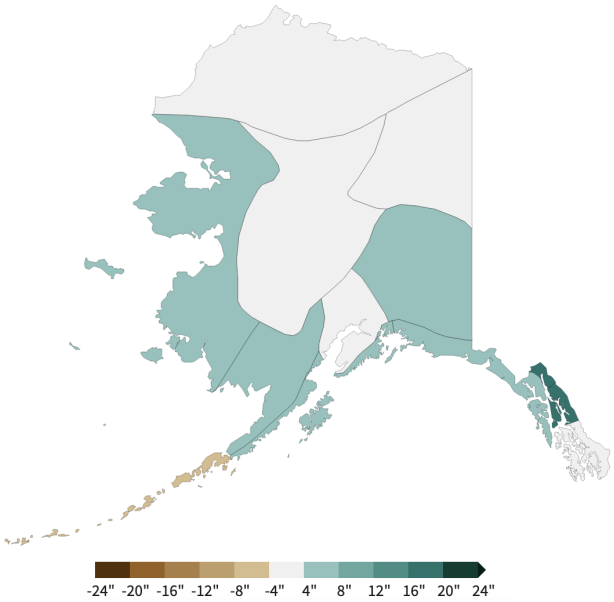
- Eagle River (ERBA2) and Gulkana River (GULA2) get long-range radar based gages for better data resolution and reliability, and ERBA2 primary stage reference (wire-weight gage) is relocated to the VFW Rd pedestrian bridge, improving accessibility.
- Datum and flood level/impact surveys and discharge measurements on several rivers in the northern Lynn Canal communities of Skagway and Haines. While in Haines, a tour with the Chilkat Indian Village of Klukwan showed Chilkat River erosion and highlighted community concerns. Senior Service Hydrologist Aaron Jacobs created flood stages for the Klehini River near Klukwan, a newer USGS gage (15056560).
- Surveys at most NWS river gages along the Parks Hwy south of Denali State Park and on Oilwell Road verify gage datum stability, determine NAVD88 elevation, and evaluate flood levels and associated impacts.
- Southcentral Alaska's very wet summer had one benefit: visiting with community residents to reevaluate flood levels and associated direct impacts! In 2024, look for updated flood stages at a few MatSu Valley rivers.
- The Middle Yukon River had a dynamic breakup. Water levels at Ruby were the second highest in recent memory and caused significant bank erosion at the slope profile location used over the past 3-4 decades. Not only had the slope profile changed (so the computed stage would be incorrect), but it was no longer safe to access the river. An APRFC visit re-connected us with our long-term River Observer, re-surveyed for historical gage datum verification and slope profile, relocated the slope gage ~1500 ft downriver where access was safer, determined gage elevation referenced to NAVD88, and found a locally unknown wild strawberry patch (shh!).
- Coordination with USFS and contracted engineers on Cordova's Eyak Lake/Eyak River weir replacement project prioritized a visit to verify gage datum and NAVD88 elevations.
- Repeat visits to the Yentna River at Yentna Station (YSTA2) for datum and flood impact surveys, a discharge measurement (which still verifies the USGS rating from 2014!), and R&D for a bank-mounted laser gage. A late fall storm raised Southcentral Alaska rivers above flood stage again- the YSTA2 slope profile changed (filled) significantly. It required a final visit before freeze-up to re-survey recent flood peaks and present water surface.

Figure 14: Celine preparing to survey new slope profile at Ruby.

Figure 15 NWS River Observer Linda Captain.

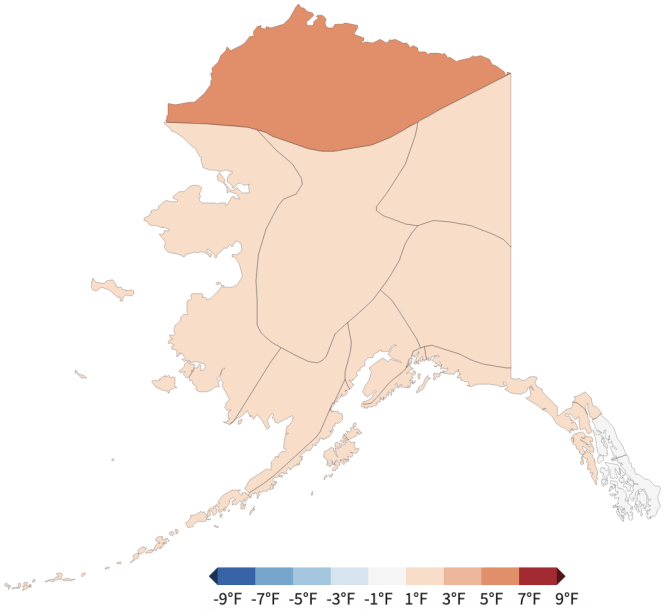
2023 Water Year Summary (Oct 1, 2023-Sept 30, 2023)

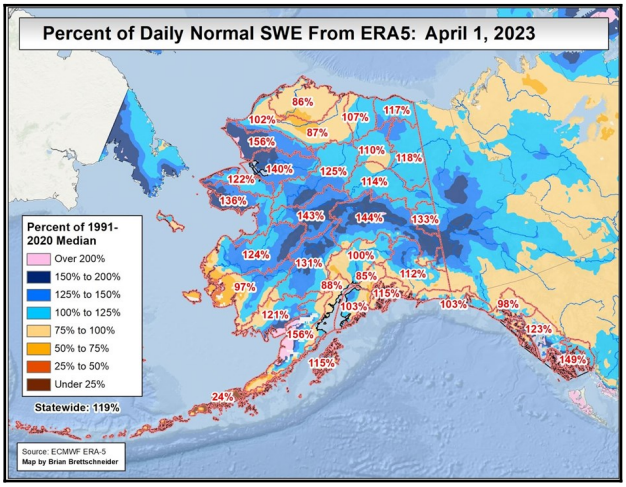
By Bob Busey and Mike Ottenweller



As it was in 2022, all of the action in the past year centered on precipitation events. The figure on the left shows the annual precipitation departure from normal measured in inches of water. While parts of the interior and north slope appear within the annual average, this obscures a slightly snowier-than-usual winter for the north slope. Western Alaska was a bit wetter than average for all but the fall months of 2023. In contrast, the southern coastline of southeast and southwestern Alaska was the most variable. Both coastlines were drier for most of the summer months. Source: [NCEI Climate at a Glance: Divisional Mapping.]

Air temperature for 2023 was 2.3 degrees Fahrenheit over the 98-year average (compared to +1.7 Degrees in 2022). The figure on the right shows the annual temperate departure from normal. The main outlier this past year was the North Slope, which had a mean annual temperature 5 degrees above the long term or, looking at it another way, the fifth warmest year for that region. The state as a whole experienced the 14th warmest year on record. Source: [NCEI Climate at a Glance: Divisional Mapping.]





In 2023, after several years of considerably more snow than the long-term average, the state experienced a winter that, while still above the long-term average, was closer to normal. The European Center for Medium-Range Weather Forecasts ERA-5 reanalysis incorporates quite a bit of computer modeling to estimate snow water equivalent. One of the more notable snow events of 2023 occurred in the Kobuk watershed, where the Dahl Creek SNOTEL station received about 2.5 inches of snow water equivalent in late March.

Farewell: Ed Plumb, Senior Service Hydrologist NWS Fairbanks

By Celine van Breukelen

Congratulations Ed Plumb - Alaska Region's new Coastal Flood Program Manager

After 20+ years with WFO Fairbanks, Ed Plumb is moving to a new position within the NWS - he is now Alaska Region's first Coastal Flood Program Manager. In this new role, he will bring the three Alaska Weather Forecast Offices (WFOs) together to have a consistent approach to forecasting and communicating coastal flooding hazards. He will also work closely with partner agencies outside the NWS, primarily the State of Alaska Department of Geologic and Geodetic Surveys (DGGS) and the US Geological Survey (USGS), to understand the tools they are building and working with them to ensure these new tools are operationally relevant in forecasting coastal flooding.

Ed's self-described callings are for weather, hydrology, and being outside. As a WFO Fairbanks' Senior Service Hydrologist (SSH) from 2002 to 2016, he performed fieldwork all over the northern portion of the state - taking river measurements and ice observations and meeting community members to understand their flood concerns. Once moving to the Warning Coordination Meteorologist (WCM) role in 2016, he expanded his community relationship building to encompass all hazards, relaying this information to the WFO and empowering forecasters to effectively communicate relevant hazard information for protecting life and property.

Ed's most memorable field experience was on Riverwatch during the catastrophic 2013 Galena flood. During the flood, he flew river reconnaissance missions and helped with response and mitigation. They flew multiple times daily, examining the ice conditions and reporting back to the community. While on the ground, Ed helped people unload boats as they were evacuating Old Town, spoke to people trapped in their houses over the radio and generally did anything he could to help the community. "Seeing people lose their belongings, homes, and livelihood was tough. But it was comforting that we could provide flood information, which was helpful to the city."

Throughout his time at the WFO, he has worked with other meteorologists, university students and DGGS to build WFO Fairbanks' coastal flooding awareness. According to Ed, Tropical Storm Merbok in the fall of 2022 was rewarding because it brought all the hard work - the tool development, outreach, and relationship building to fruition in an extreme event. In comparing Merbok to the last large coastal event in 2011, Ed mentions that many more agencies had awareness and were working together in 2023 than in 2011. He credits this with a greater national awareness about climate resiliency, DGGS' focus on coastal communities, and a greater enthusiasm from many agencies for supporting underserved and vulnerable communities. In his new position, Ed is most excited to dive into a project and focus on it, to see it from inception to fruition. Ed, we will miss you as Senior Service Hydrologist for WFO Fairbanks. Still, we look forward to seeing you build the coastal program!