

## Spring Breakup Summary for Alaska

Valid May 10, 2024

[Alaska-Pacific River Forecast Center](https://www.weather.gov/aprfc)

Next Product Issuance: May 17, 2024

[www.weather.gov/aprfc](https://www.weather.gov/aprfc)

### EXPERIMENTAL PRODUCT

#### Spring Breakup and Flood Potential Summary

##### *Current Conditions*

- On the Kuskokwim River several ice jams downriver from Kweethluk caused extensive flooding over the past few days. Currently an ice jam has formed just downriver from Napakiak and flooding is occurring at Napakiak. Expect the lower Kuskokwim River ice to flush out to the mouth over the next couple of days.
- On the Yukon River cooler temperatures this breakup season have kept snowmelt breakup gradual. Cooler temperatures are expected to continue, with this year ***leaning to a more thermal breakup on the Yukon River.***
- Upper Yukon River- the main breakup front is a jam 12 miles upstream of Circle. ***Overall water levels are low and the ice front has been moving slowly.***
- Middle and Lower Yukon - No changes yet, anticipate timing to be close to normal.
- The Tanana River has been ice free for about a week. .

##### *Forecast Conditions*

- Yukon - Expect continued decay and likely thermal breakup for communities on the middle Yukon over next few days.
- Buckland - expect the river ice to go out during next few days
- Kobuk - expect the river ice to go out during the next few days

The 2024 spring breakup is trending more towards a **thermal\*** breakup across much of Alaska. In the Eastern Interior late April temperatures were warm, helping to deplete low elevation snowpack and degrade river ice across the middle and upper Tanana River as well as portions of the Upper Yukon River. Across the western part of the state, including the middle/lower Yukon River, breakup has been slow because temperatures are still gradually easing out of winter.

\*The two generalized types of river ice breakup are dynamic (or mechanical) and thermal. A dynamic breakup is characterized by cold early spring air temperatures followed by rapid warming, and can be compounded by above average headwater snowpack and river ice thicknesses, and generally moves the breakup ice front downstream in a somewhat linear fashion. Ice jam flooding occurs more often during a dynamic breakup. A thermal breakup

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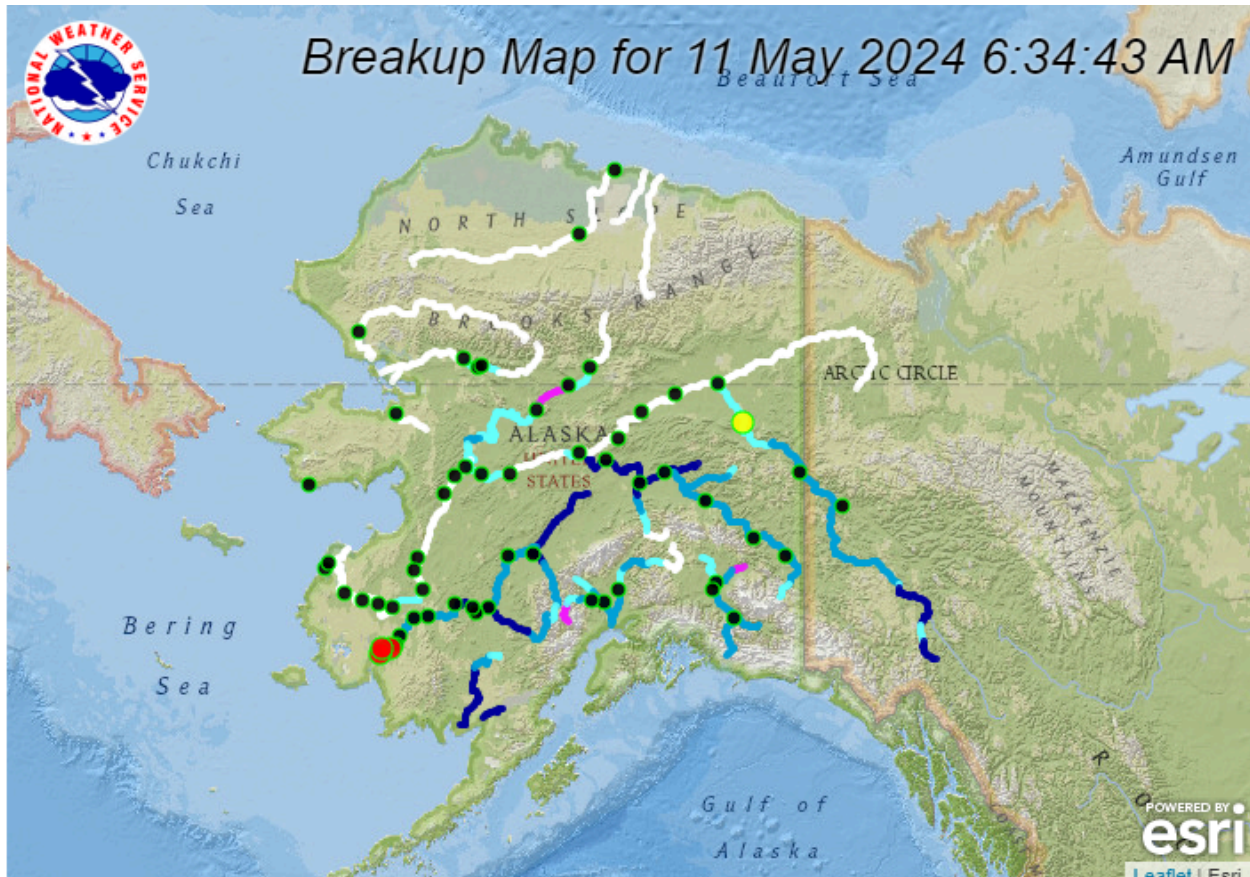


occurs from gradually warming air temperatures, where the ice simply rots in place. Thermal breakups does not mean no flooding, ice jams do occur but they are commonly less severe.

## Spring Breakup Village Flood Potential along major rivers in Alaska

Spring breakup village flood potential considers the climate summary, snowpack, ice thickness and condition, historical likelihood of flooding and flood severity, and community knowledge. Village flood potential is reassessed continually as outlooks change and breakup season progresses.

[Link to the current Village Flood Potential and Snowmelt Runoff Maps](#)



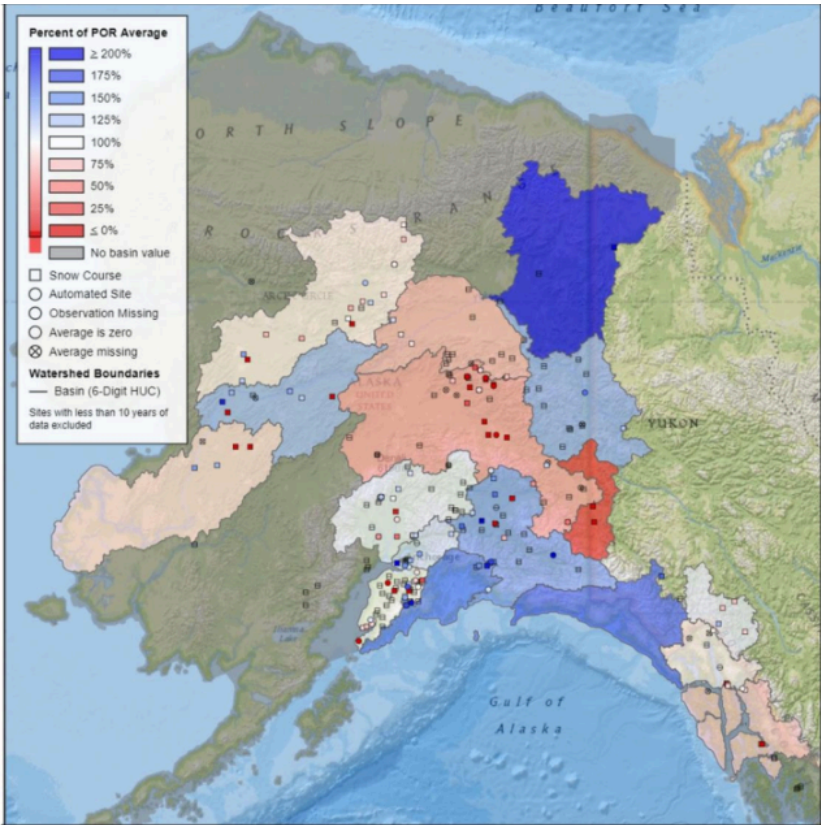
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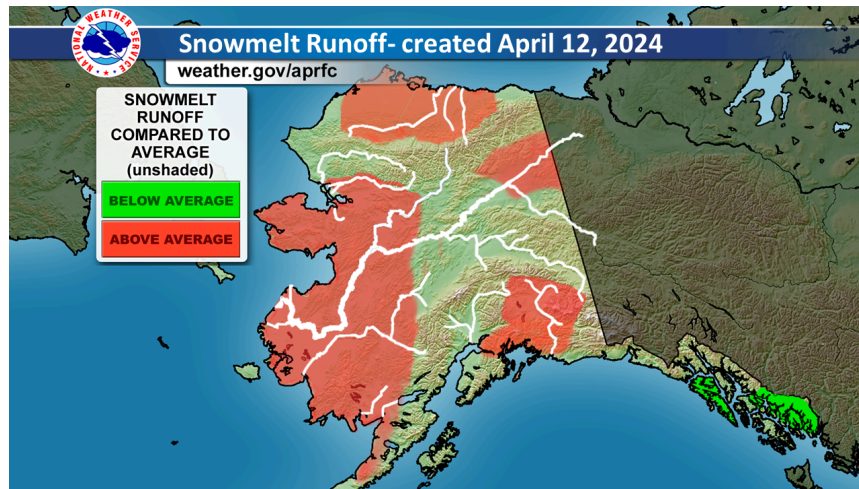
[Link to current breakup map](#)

## NRCS May 1 SWE Percent of Average



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[Snowmelt Runoff Potential Compared to Average](#)

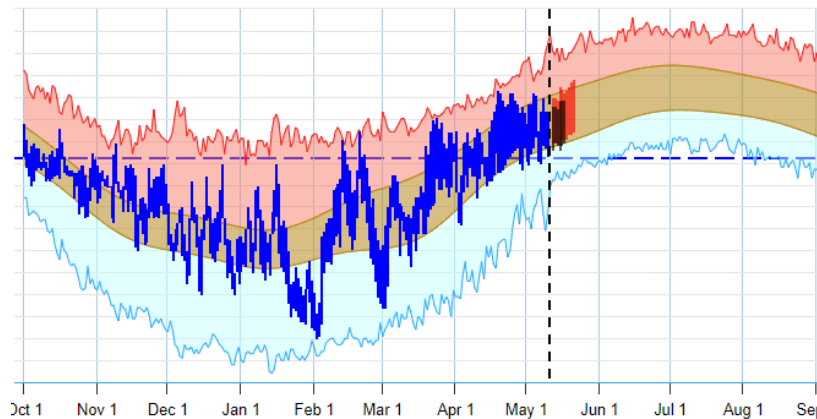
## Climate Outlook

The most important factor determining the severity of ice jam breakup remains weather immediately prior to and during breakup. Dynamic breakups, with the high potential for ice jam flooding typically require an abrupt warm up in temperature.

In the near term, temperatures in the interior are close to climate normals, with highs in the 50s and lows in the 30s. In Bethel, highs will be in the 40s, and lows in the 30s. The relatively normal temperatures and slow warm up are good indicators of trending towards a thermal breakup.

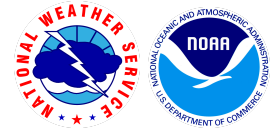
### Daily Temperature Data - FAIRBANKS INTL AP, AK

Period of Record - 1929-12-01 to 2024-05-10. Normals period: 1981-2010.



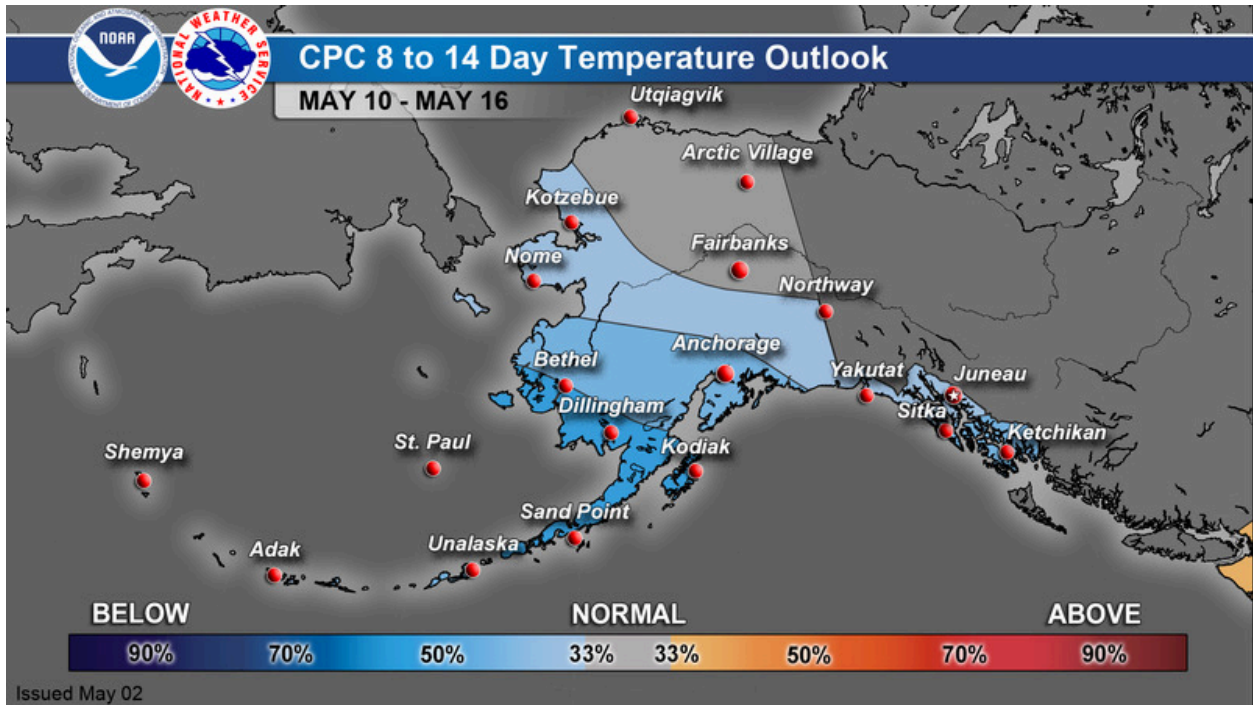
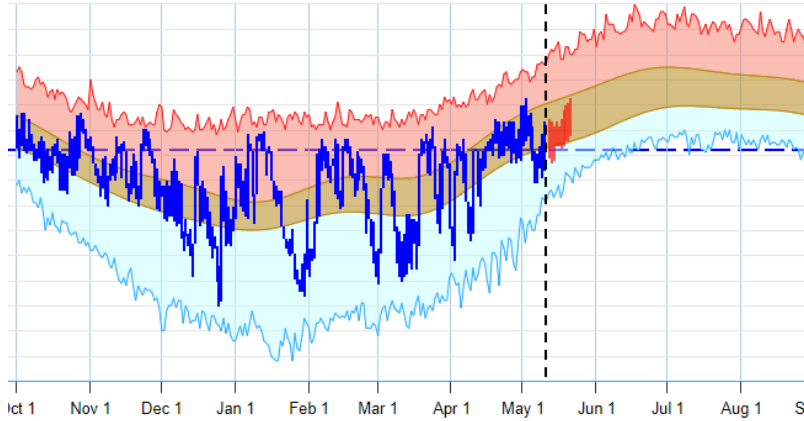
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## Daily Temperature Data - BETHEL AIRPORT, AK

Period of Record - 1923-08-01 to 2024-05-10. Normals period: 1981-2010.



The Climate Prediction Center temperature outlook for mid May indicates an increased chance of cooler than normal temperatures for southwest Alaska and normal temperatures for the eastern interior and north slope. Cooler temperatures in mid May have the greatest impact on

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the Lower Yukon River; the key will be where the ice jam front comes into contact with stronger downstream ice.

### Flood Potential

The likelihood of flooding from snowmelt and/or ice jams is initially calculated based on the flood frequency for the current 2000 to 2021 historical record and adjusted to reflect current conditions.

The following tables give an estimation of snowmelt runoff volume, flood potential, and forecast breakup date range for various locations across the state.

Median breakup dates are for the period 1980 through 2023 and are calculated for locations with at least 5 years of data.

Forecast breakup timing is expressed as a range based on snowmelt runoff volume and flood potential. Locations where breakup has already occurred are identified with two asterisks (“\*\*”) following a single date; for example, Kuskokwim River at Nikolai breakup occurred on April 16, 2024 (4/16\*\*).

### Tanana/Fairbanks

River-Reach	Location	Snowmelt Runoff Volume	Flood Potential	Median* Breakup Date	Years of Record	Forecast Breakup Date Range
Chena River		Average				
	Chena Lakes		Low			
	Fairbanks		Low	4/26	31	4/25**
Tanana River		Average				
	Northway		Low	4/26	31	4/24**
	Salcha		Low	4/26	3	4/24**
	Fairbanks		Low	4/26	31	4/24**
	Nenana		Low	4/30	44	4/27**
	Manley HS		Low	5/3	32	5/1**

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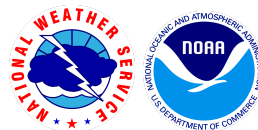


## Yukon

River-Reach	Location	Snowmelt Runoff Volume	Flood Potential	Median* Breakup Date	Years of Record	Forecast Breakup Date Range
Yukon River (Upper)		Average				
	Dawson, YT		Low	5/5	44	5/1**
	Eagle		Low-Moderate	5/4	44	5/3**
	Circle		Moderate	5/9	40	5/6-5/12
	Fort Yukon		Moderate-High	5/11	40	5/8-5/14
	Beaver		Low	5/10	27	5/7-5/13
	Stevens Village		Moderate	5/11	25	5/9-5/15
	Rampart		Low-Moderate	5/11	27	5/9-5/15
		Average				
	Tanana		Low-Moderate	5/8	39	5/8**
	Ruby		Low	5/9	38	5/7-5/13
	Galena		Moderate	5/11	43	5/9-5/15
	Koyukuk		Moderate	5/9	17	5/7-5/13
	Nulato		Low	5/12	26	5/10-5/16
	Kaltag		Low-Moderate	5/12	38	5/10-5/16
	Anvik		Low-Moderate	5/14	35	5/12-5/18
Yukon River (Lower)		Above				
	Holy Cross		Low-Moderate	5/14	37	5/11-5/17
	Russian Mission		Low-Moderate	5/15	37	5/12-5/18
	Marshall		Low-Moderate	5/15	32	5/12-5/18
	Pilot Station		Low-Moderate	5/13	27	5/11-5/17
	Mountain Village		Low	5/14	37	5/12-5/18

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	Alakanuk/Emmonak		Moderate	5/20	38	5/18-5/24
Koyukuk River		Above				
	Bettles		Low	5/10	42	5/5-5/11
	Allakaket		Low-Moderate	5/11	37	5/6-5/12
	Hughes		Low-Moderate	5/11	37	5/6-5/12

## Kuskokwim

River-Reach	Location	Snowmelt Runoff Volume	Flood Potential	Median* Breakup Date	Years of Record	Forecast Breakup Date Range
Kuskokwim River		Average				
	Nikolai		Low	4/23	38	4/16**
	McGrath		Low	5/5	44	5/1**
	Stony River		Low	5/2	36	5/2**
	Sleetmute		Low	5/1	35	5/2**
	Red Devil		Low	5/4	38	5/1**
	Crooked Creek		Low	5/4	38	5/1**
	Aniak		Low	5/6	41	5/2**
	Kalskag		Moderate	5/5	35	5/3**
	Tuluksak		Low-Moderate	5/7	32	5/5**
	Akiak		Low-Moderate	5/8	38	5/5**
	Kwethluk		Moderate	5/5	12	5/7**
	Bethel		Moderate	5/9	44	5/8**
	Napakiak		Moderate	5/9	29	5/7-5/13



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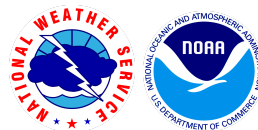


## Southeast/Southcentral

River-Reach	Location	Snowmelt Runoff Volume	Flood Potential	Median* Breakup Date	Years of Record	Forecast Breakup Date Range
Southeast		Average	Low			
Kenai River		Average	Low			4/1**
Anchor River		Average	Low	4/17	16	4/17**
Matanuska River		Average	Low			
Susitna River		Average				
	Gold Creek		Low	5/2	9	4/30**
	Sunshine		Low	5/2	35	5/1**
Talkeetna		Average				
	Talkeetna		Low	4/28	5	4/26**
Yentna River		Average				
	Lake Creek		Low	5/2	32	4/28**
Skwentna		Average				
	Skwentna		Low	4/30	29	4/24**
Copper River		Above				
	Gakona		Low	4/30	35	5/2**
	Gulkana		Low-Moderate	5/1	34	5/2**

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## North Slope/Northwest

River-Reach	Location	Snowmelt Runoff Volume	Flood Potential	Median* Breakup Date	Years of Record	Forecast Breakup Date Range
Seward Peninsula		Above				
	Buckland		Moderate	5/18	34	5/16-5/22
Kobuk River		Above				
	Kobuk		Low-Moderate	5/14	40	5/12-5/18
	Shungnak		Low	5/16	32	5/14-5/20
	Ambler		Low	5/16	38	5/14-5/20
	Kiana		Low	5/18	13	5/16-5/22
Noatak River		Above				
	Noatak		Low	5/19	26	5/17-5/23
Brooks Range		Above				
	Colville at Umiat		Low-Moderate	5/24	21	5/21-5/27
	Colville at Colville Village		Low-Moderate	6/3	22	5/31-6/6
Sagavanirktok River		Above				
	Dalton Highway		Low-Moderate			5/24-5/30

The next Spring Breakup Summary will be published May 17, 2024.

This product is experimental. For more information and to submit comments, please contact:

Celine van Breukelen, Service Coordination Hydrologist

Alaska-Pacific River Forecast Center

Anchorage, AK

907-266-5160

Email: [celine.vanbreukelen@noaa.gov](mailto:celine.vanbreukelen@noaa.gov)