Spring Breakup Outlook for Alaska
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Alaska-Pacific River Forecast Center
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www.weather.gov/aprfc

EXPERIMENTAL PRODUCT
Spring Breakup Outlook for Alaska

Updates from the previous Spring Breakup Outlook

There are no significant changes in the breakup outlook flood potential. Detailed sections below have been updated with new information and the village flood potential graphic and tables have been included with community specific flood potential and forecast breakup dates.

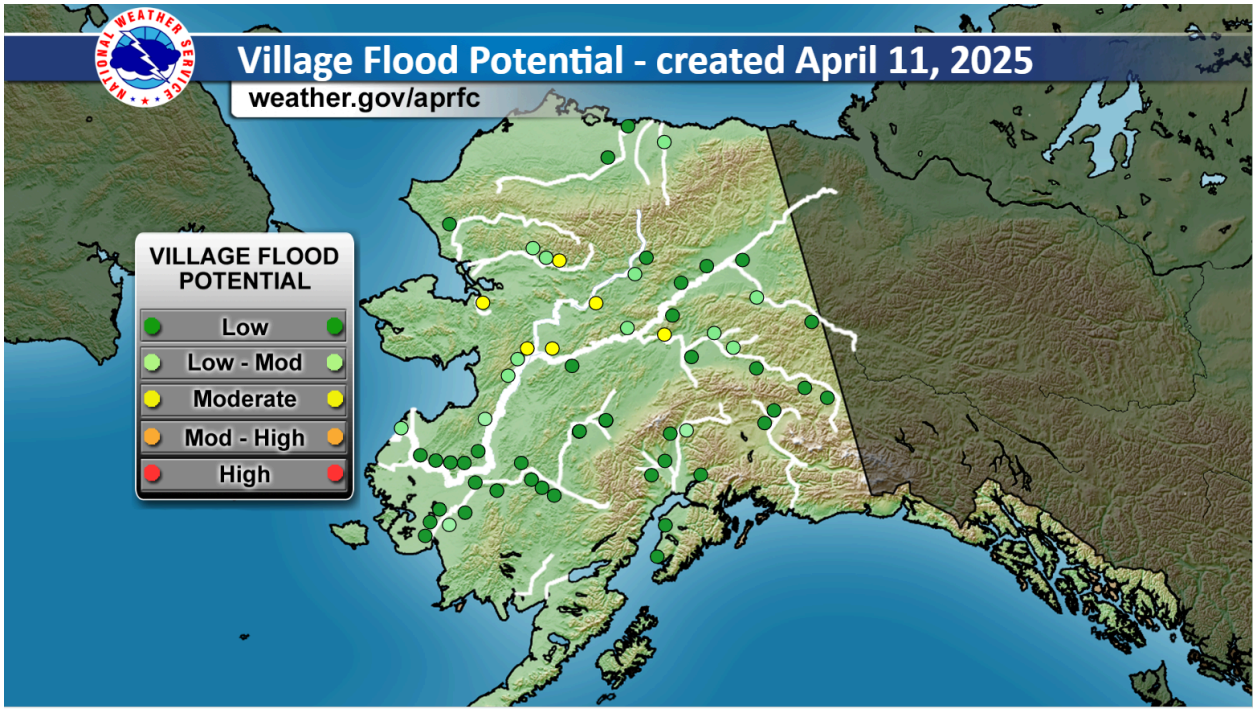
Statewide Flood Potential Overview

The potential for spring ice breakup and snowmelt-induced flooding varies significantly across Alaska. In the Interior, including most of the Yukon, Tanana, Chena and Koyukuk River basins, as well as portions of the North Slope, breakup potential is above average due to higher-than-normal snowpack levels. In contrast, portions of the Lower Yukon and Kuskokwim River basins, along with most of Southcentral Alaska, can expect a below-average breakup potential due to very low snowpack caused by warmer than normal winter temperatures.

This outlook is based on observed snowpack, ice thickness reports, and seasonal temperature outlooks. The term ‘normal’ is defined as being at or near the climatological value, which is typically defined over a 30-year period of record.

Timing of River Ice Breakup

Timing of breakup is expected to be near normal for rivers across northern and eastern Alaska, and 1-3 days later than normal in western Alaska. We are still three weeks away from the start of breakup on the mainstem of the Yukon and Kuskokwim Rivers.

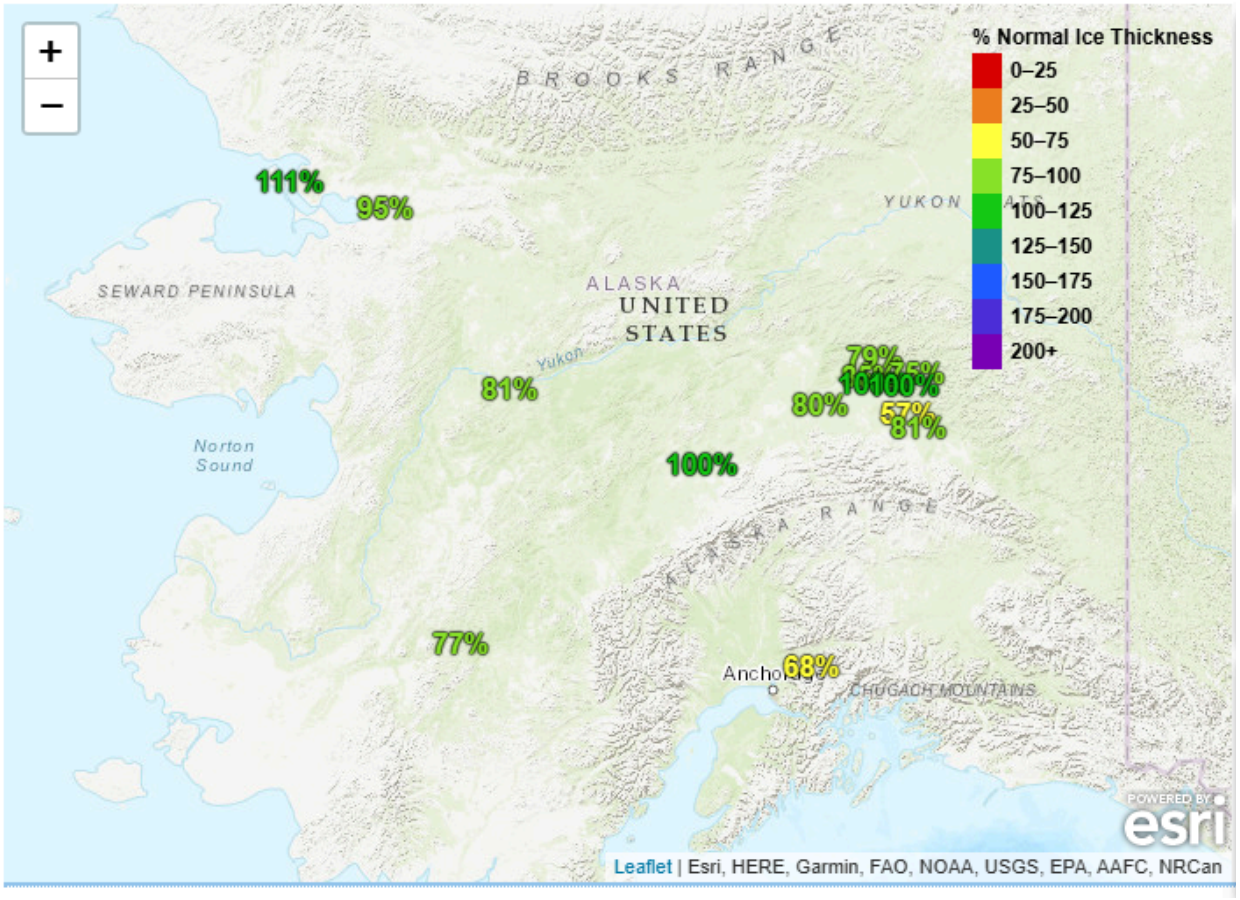


River Ice Observations

River ice observations are available for a limited number of sites in Alaska. Measurements from early April indicate that ice thickness across the state is generally near to below normal. In the Interior, ice thicknesses generally range from 80% to 100% of normal. It is noteworthy that the Kuskokwim River Ice Road has been re-established from Bethel to Crooked Creek, indicating that the integrity and strength of the ice has rebounded since the mid-winter warm-up. As of March 21st measurements along the ice road ranged from 42” at Kalskag decreasing to 30” at Bethel. As of March 28th measurements ranged from 30” at Crooked Creek to 40+” in Aniak. The ice road across the Yukon River closed on April 7th, approximately 2 weeks earlier than normal. Reports from the Yukon Territory indicate general average ice thickness with slightly above average thickness on the lower Porcupine River.

Several mid-winter breakups also occurred and resulted in ice jam formation: one on the Kanektok River near Quinhagak and another on the Anchor River near Anchor Point. The Kanektok River ice jam persisted through the winter, re-freezing in place, but poses minimal concern for breakup. The Anchor River jam has cleared and the river is open.

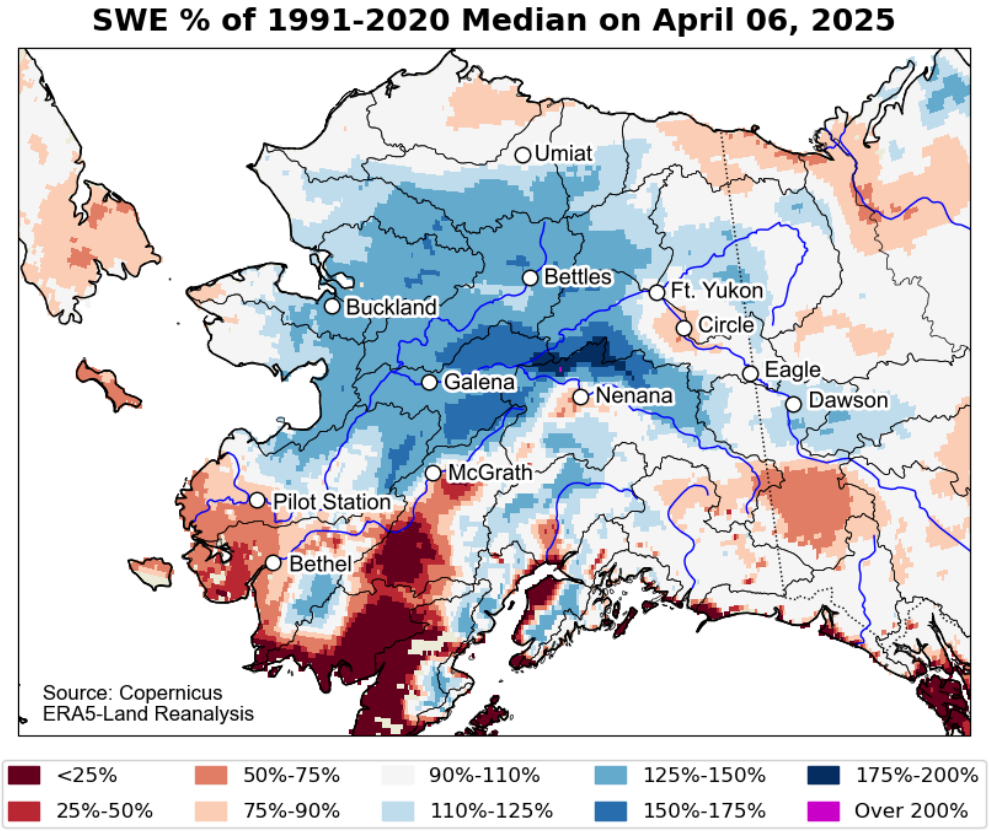
% Average Ice Thickness Map



Link to % Average ice thickness map

Snowpack

The April 1st snowpack analysis by the Natural Resources Conservation Service (NRCS), along with ERA5 SWE estimates (updated April 6th, see below), reveals a highly variable snowpack across Alaska. The Chena Basin and other Interior Rivers up through the Brooks Range have an above average snowpack along with the Upper Yukon in the vicinity of Dawson City. The Chena River Basin has an above average snowpack. Areas of the Kuskokwim and Lower Yukon River have well below normal snowpack.



Snowpack across the Canadian areas of Yukon River Basin ranges below average at the headwaters to above average near Dawson City. The Porcupine River is generally average within the Yukon trending to above average closer to Fort Yukon. The Porcupine River Basin has about half the snowpack of last year's record-setting levels.

Within Alaska, the Upper Yukon basin ranges from average snowpack above Fort Yukon to above average along the Middle Yukon River. The Tanana and Koyukok basins both have above average snowpacks with the highest anomalies in the state found in the Chena River Basin with several NRCS snotel sites at 140% to 160% of normal. The lower Yukon River has a below average snowpack.

Across the Brooks Range, snowpack is consistently above average. Based on snowpack and winter precipitation measurements, estimates place snowpack levels between 120–150% of normal. Over the North Slope towards the coastal plain, snowpack is normal to below normal.

The Kuskokwim River basin snowpack is well below-average, particularly in the lower basin— a stark contrast to last season's well above-average snowpack. Areas near McGrath and to the northeast have a deeper snowpack and closer to normal for this time of year.

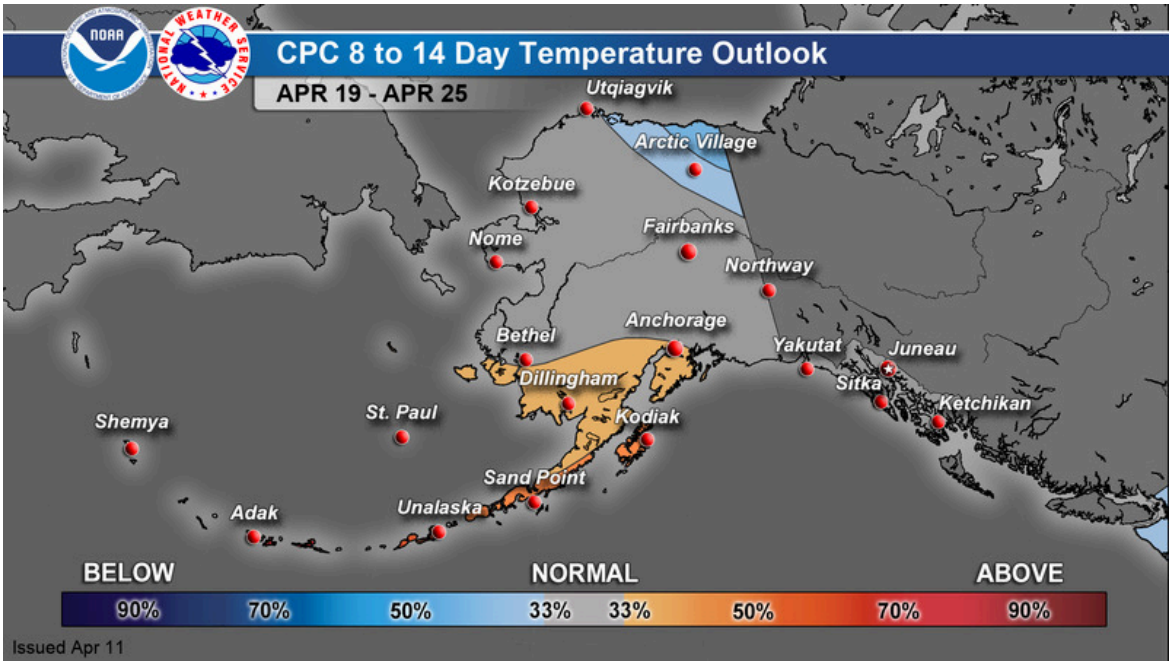
In Southcentral Alaska, snowpack is highly dependent on elevation. Above 1,500–2,000 feet, conditions are near normal, whereas at lower elevations remain well below normal. The Copper River basin trends from above normal snowpack in the west to near normal around Glenallen and below average towards the east along the Tok Cutoff.

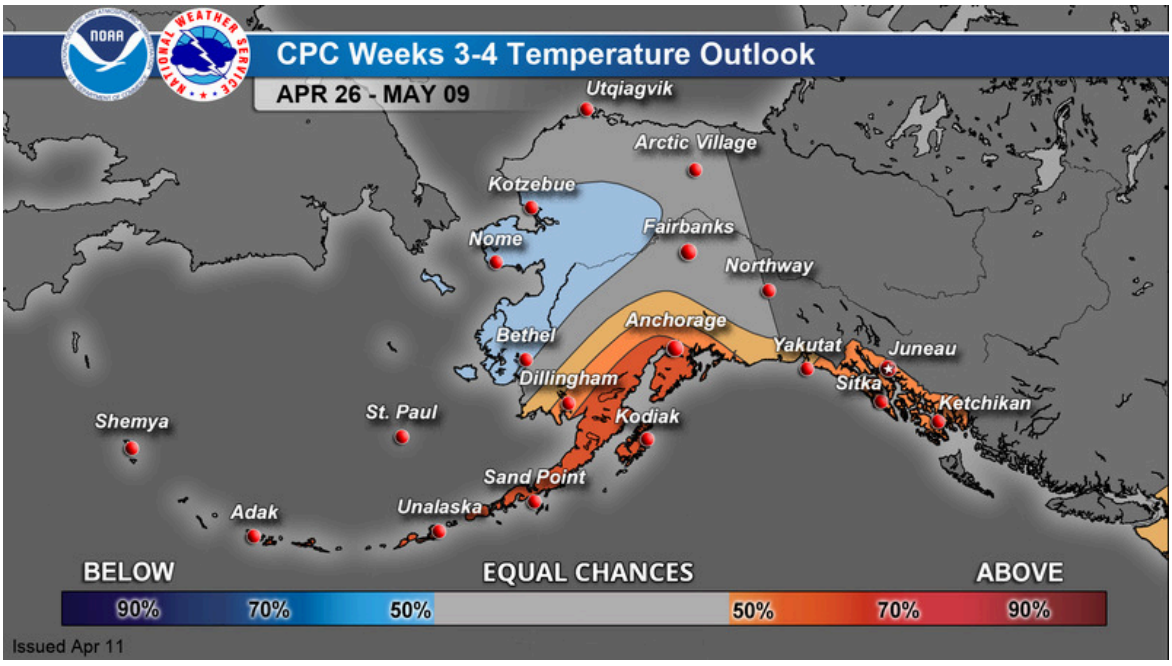
Climate Outlook

Spring temperatures in April and May are the most critical factor in determining the severity of ice breakups. Dynamic breakups, which carry a higher risk of ice jam flooding, typically require cooler-than-normal temperatures in early April, followed by a rapid warm-up to summer-like temperatures in late April or early May.

NOAA's Climate Prediction Center (CPC) forecasts above-normal temperatures through mid-April for southwest Alaska, while near-normal temperatures are expected in the central and eastern interior. The outlook for late April into early May favors higher chances of warmer-than-normal temperatures across southern Alaska, cooler-than-normal conditions along the west coast, and near-normal temperatures in the eastern interior and North Slope.

This pattern may reduce the likelihood of a dynamic breakup in the Kuskokwim River basin. However, the combination of cooler early spring temperatures and above-average snowpack in the middle Yukon River basin could delay snowmelt and increase the risk of ice jam flooding.


CPC 8 to 14 Day Temperature Outlook
APR 19 - APR 25
Utqiagvik
Arctic Village
Kotzebue
Fairbanks
Nome
Northway
Anchorage
Bethel
Yakutat
Juneau
Dillingham
Sitka
Ketchikan
Shemya
St. Paul
Kodiak
Sand Point
Adak
Unalaska
BELOW
NORMAL
ABOVE
90%
70%
50%
33%
33%
50%
70%
90%
Issued Apr 11


CPC Weeks 3-4 Temperature Outlook
APR 26 - MAY 09
Utqiagvik
Arctic Village
Kotzebue
Fairbanks
Nome
Northway
Anchorage
Bethel
Yakutat
Juneau
Dillingham
Sitka
Ketchikan
Shemya
St. Paul
Kodiak
Sand Point
Adak
Unalaska
BELOW
EQUAL CHANCES
ABOVE
90%
70%
50%
50%
70%
90%
Issued Apr 11

Flood Potential
The likelihood of flooding from snowmelt and/or ice jams is initially estimated 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		Above				
	Chena Lakes Project		Above			
Tanana River		Average				
	Northway		Low	4/26	31	4/23-4/29
	Salcha		Low	4/26	3	4/23-4/29
	Fairbanks		Low	4/26	31	4/27-5/3
	Nenana		Low	4/30	44	4/27-5/3
	Manley HS		Moderate	5/3	32	4/30-5/6

Yukon

River-Reach	Location	Snowmelt Runoff Volume	Flood Potential	Median Breakup Date	Years of Record	Forecast Breakup Date Range
Yukon River		Average				

(Upper)						
	Dawson, YT		Low	5/4	45	5/1-5/7
	Eagle		Low	5/4	45	5/1-5/7
	Circle		Low-Moderate	5/9	41	5/6-5/12
	Fort Yukon		Low	5/11	41	5/8-5/14
	Beaver		Low	5/11	28	5/8-5/14
	Stevens Village		Low	5/11	26	5/8-5/14
	Rampart		Low	5/12	28	5/9-5/15
Yukon River (Mid)		Above				
	Tanana		Low-Moderate	5/8	40	5/6-5/12
	Ruby		Low	5/9	39	5/8-5/14
	Galena		Moderate	5/11	44	5/10-5/16
	Koyukuk		Moderate	5/10	18	5/9-5/15
	Nulato		Low	5/12	27	5/11-5/17
	Kaltag		Low-Moderate	5/12	39	5/11-5/17
	Anvik		Low-Moderate	5/14	36	5/13-5/19
Yukon River (Lower)		Average				
	Holy Cross		Low	5/14	38	5/13-5/19
	Russian Mission		Low	5/15	38	5/14-5/20
	Marshall		Low	5/15	33	5/14-5/20
	Pilot Station		Low	5/13	28	5/12-5/18
	Mountain Village		Low	5/15	38	5/14-5/20
	Alakanuk/Emmonak		Low-Moderate	5/20	39	5/19-5/25

Kuskokwim

River-Reach	Location	Snowmelt Runoff Volume	Flood Potential	Median Breakup Date	Years of Record	Forecast Breakup Date Range
Kuskokwim River		Below				

	Nikolai		Low	4/23	39	4/22-4/28
	McGrath		Low	5/4	45	5/3-5/9
	Stony River		Low	5/2	37	5/1-5/7
	Sleetmute		Low	5/1	36	4/30-5/6
	Red Devil		Low	5/3	39	5/2-5/8
	Crooked Creek		Low	5/4	39	5/3-5/9
	Aniak		Low	5/5	42	5/4-5/10
	Kalskag		Low	5/5	36	5/4-5/10
	Tuluksak		Low	5/7	33	5/6-5/12
	Akiak		Low	5/8	39	5/7-5/13
	Kwethluk		Low-Moderate	5/5	13	5/4-5/10
	Bethel		Low	5/9	45	5/8-5/14
	Napakiak		Low	5/10	30	5/9-5/15

Southeast/Southcentral

River-Reach	Location	Snowmelt Runoff Volume	Flood Potential	Median Breakup Date	Years of Record	Forecast Breakup Date Range
Southeast		Below	Low			
Kenai River		Below	Low			
Anchor River		Below	Low	4/17	16	Early April**
Matanuska River		Below	Low			
Susitna River		Average				
	Gold Creek		Low-Moderate	5/2	9	4/29-5/5
	Sunshine		Low	5/2	36	4/29-5/5
Talkeetna		Average				
	Talkeetna			4/28	5	4/25-5/1
Yentna River		Average				
	Lake Creek		Low	5/1	33	4/28-5/4
Skwentna River		Average				

	Skwentna		Low	4/30	30	4/27-5/3
Copper River		Average				
	Gakona		Low	5/1	36	Early April**
	Gulkana		Low	5/1	34	4/28-5/4

North Slope/Northwest

River-Reach	Location	Snowmelt Runoff Volume	Flood Potential	Median Breakup Date	Years of Record	Forecast Breakup Date Range
Koyukuk River		Above				
	Bettles		Low	5/10	43	5/9-5/15
	Allakaket		Low-Moderate	5/11	38	5/10-5/16
	Hughes		Moderate	5/11	38	5/10-5/16
Seward Peninsula		Above				
	Buckland		Moderate	5/18	35	5/17-5/23
Kobuk River		Above				
	Kobuk		Moderate	5/14	40	5/13-5/19
	Shungnak		Low-Moderate	5/16	32	5/15-5/21
	Ambler		Low-Moderate	5/16	38	5/15-5/21
Noatak River		Average				
	Noatak		Low	5/19	27	5/16-5/22
Brooks Range		Above				
	Colville at Umiat		Low-Moderate	5/25	22	5/22-5/28
	Colville at Colville Village		Low-Moderate	6/3	23	
Sagavanirktok River		Above				

	Dalton Highway		Low-Moderate			12/27-1/2

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

For more detail and to see the Flood Potential Map refer to the APRFC website at:
https://www.weather.gov/aprfc/floodpotential

The next Spring Breakup Outlook will be published April 18, 2025.

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

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