



# 2023 Alaska Breakup Summary

## NWS Alaska Region Briefing

### Alaska Pacific River Forecast Center

# 2023 Breakup Overview



NWS Alaska Region

**2023 was a historic breakup year**

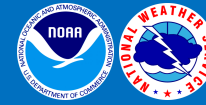
## Village Flood Impact

- Minor: 14
- Moderate: 10
- Major: 3
- Catastrophic: 2



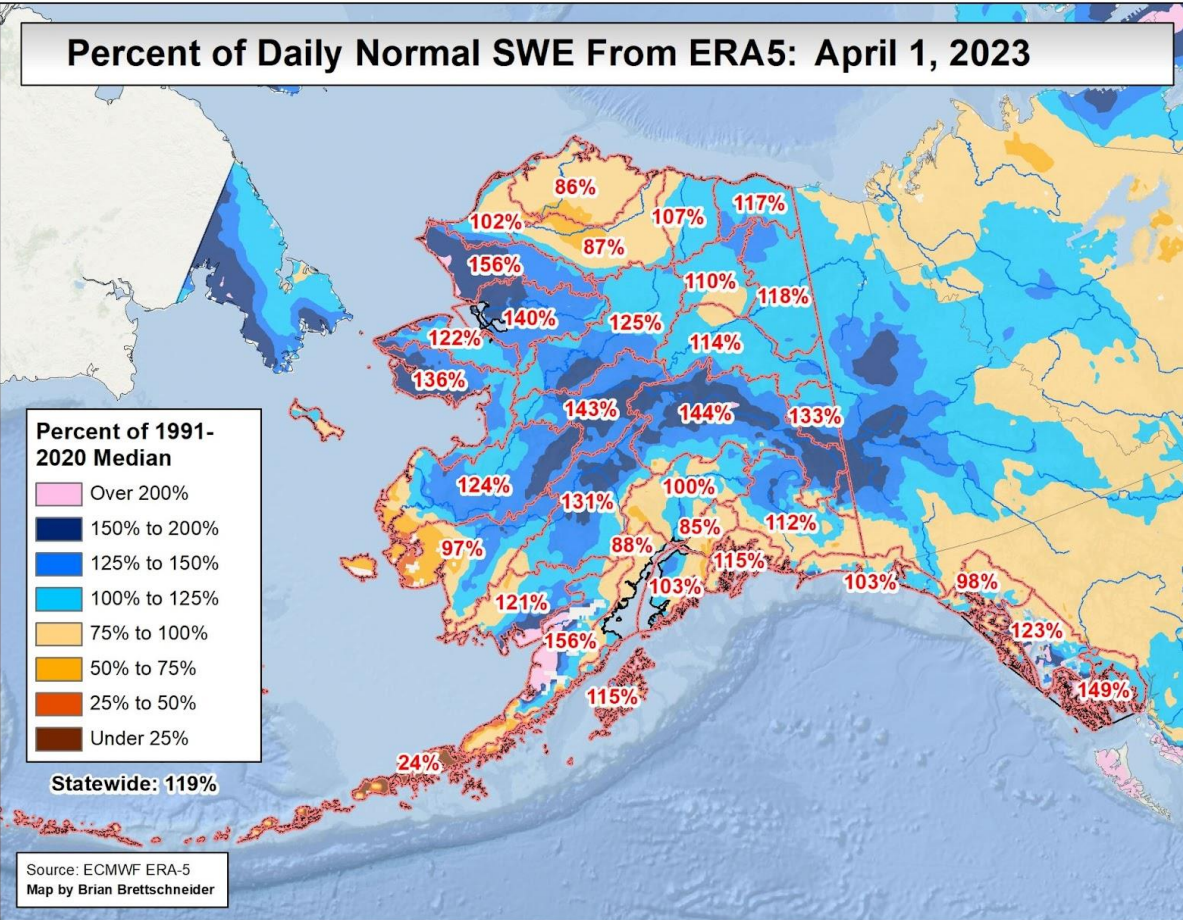
# Spring Conditions

## Above average late season snowpack

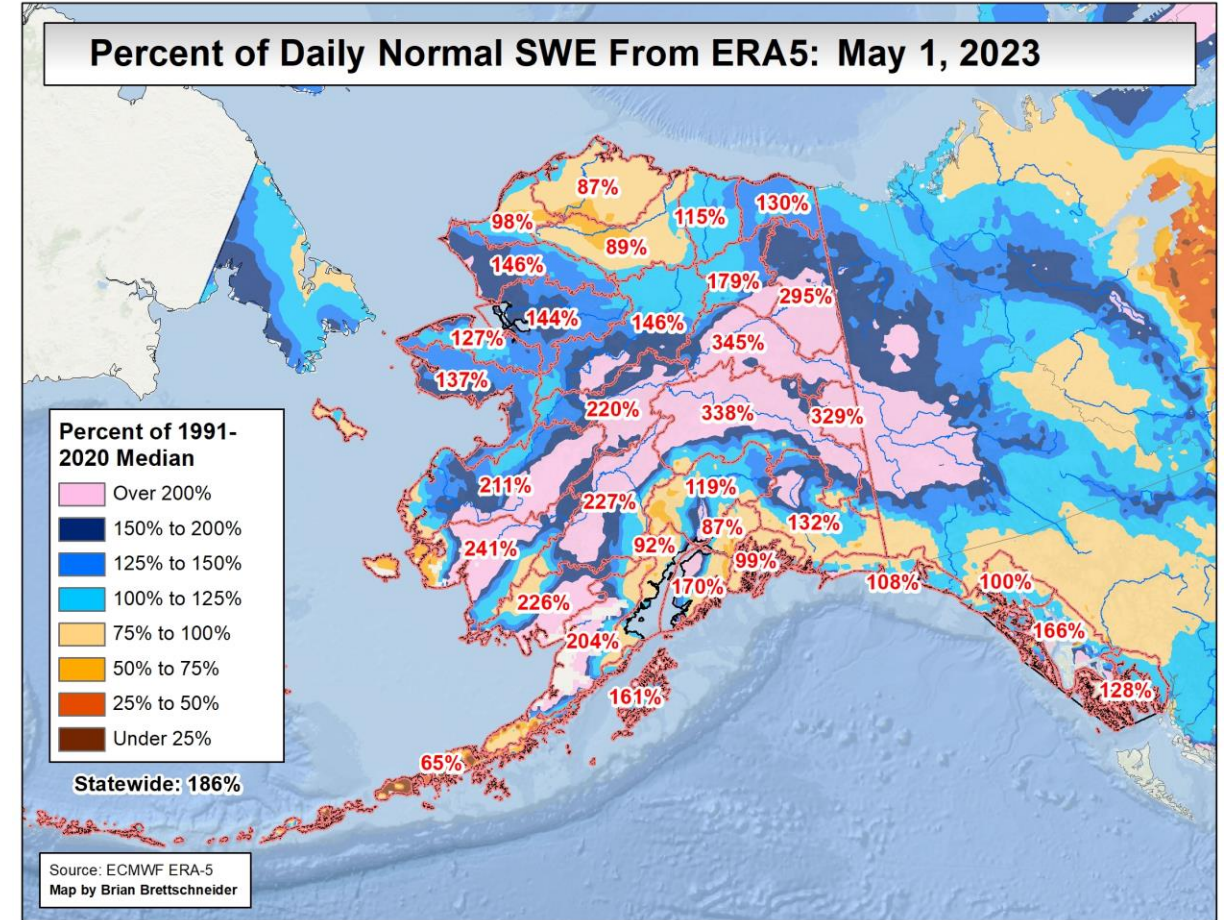


NWS Alaska Region

Percent of Daily Normal SWE From ERA5: April 1, 2023



Percent of Daily Normal SWE From ERA5: May 1, 2023



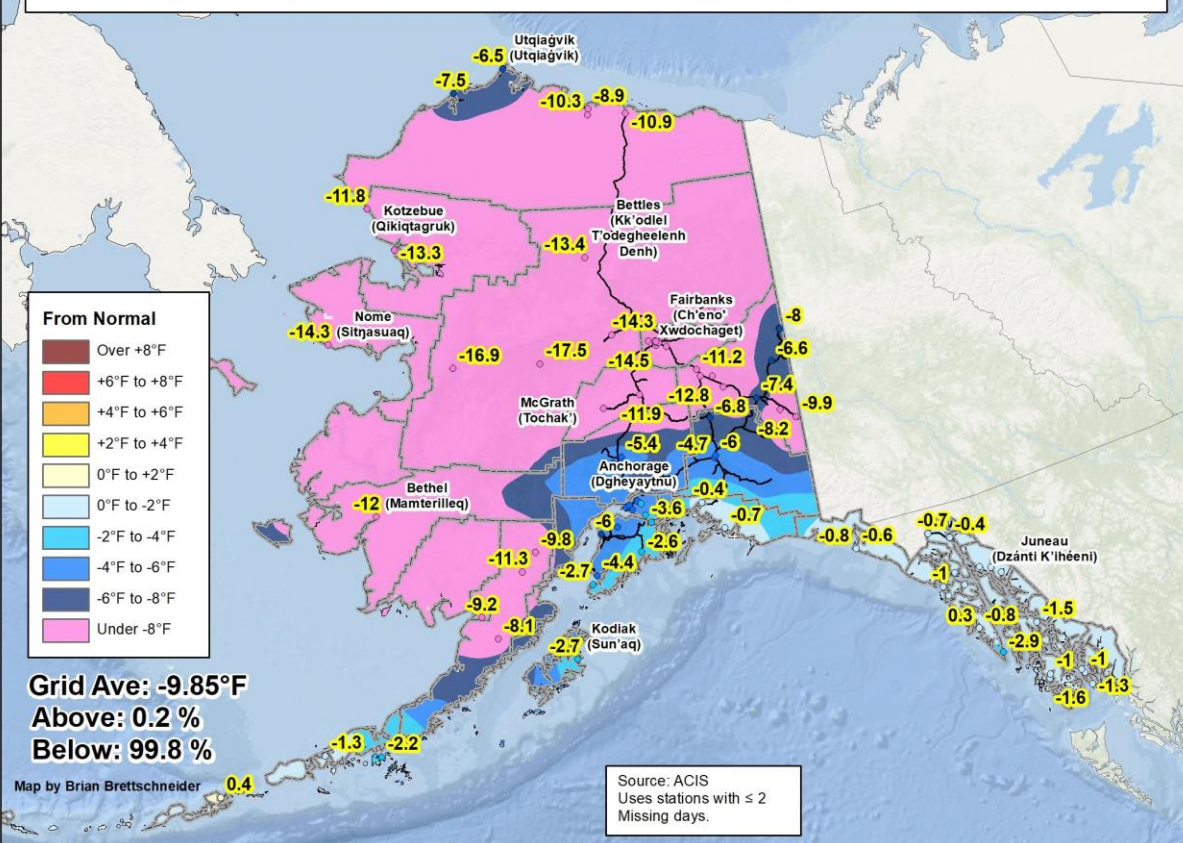
# Spring Conditions

## Well below average April temps

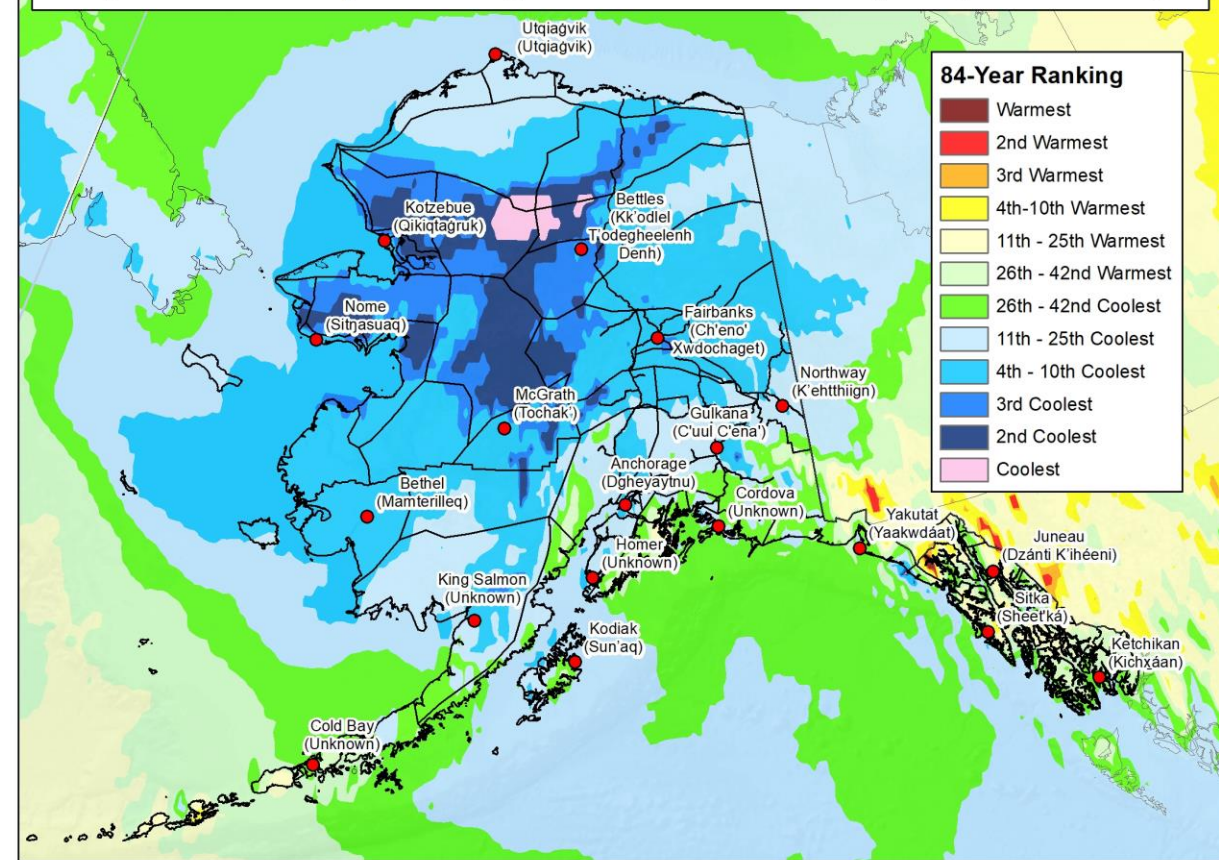


NWS Alaska Region

Average Temperature From Normal: Apr 01, 2023 - Apr 30, 2023



April 2023 Temp Ranking From ERA5 Reanalysis (1940-2023)

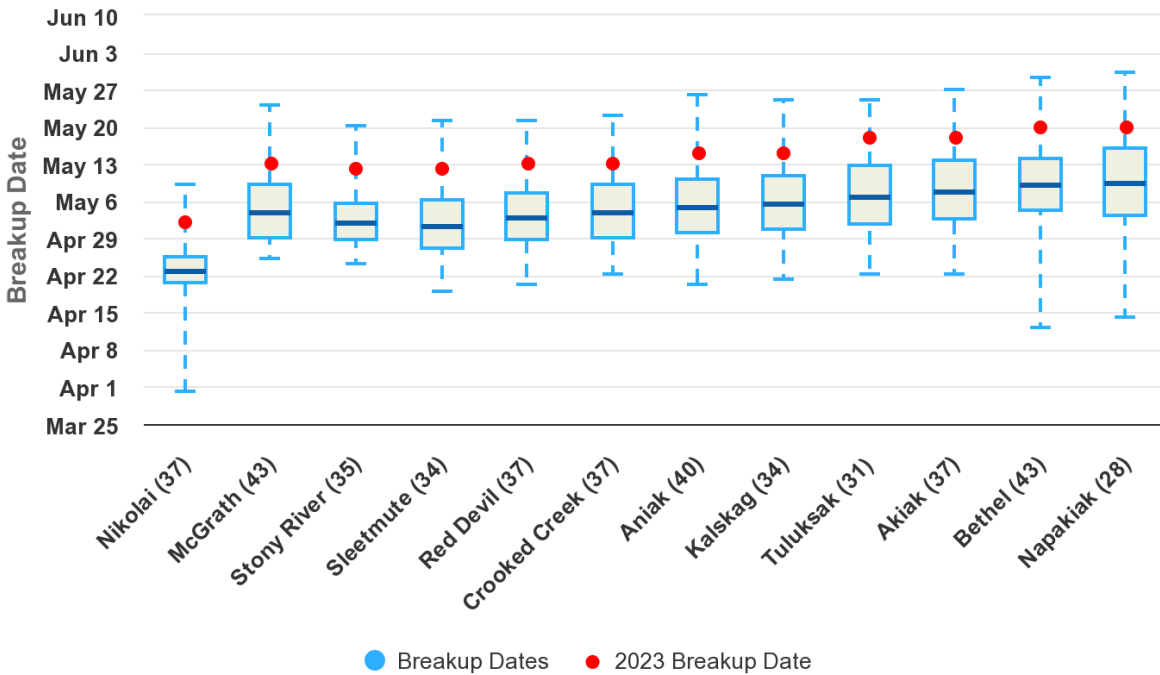


# Breakup Timing



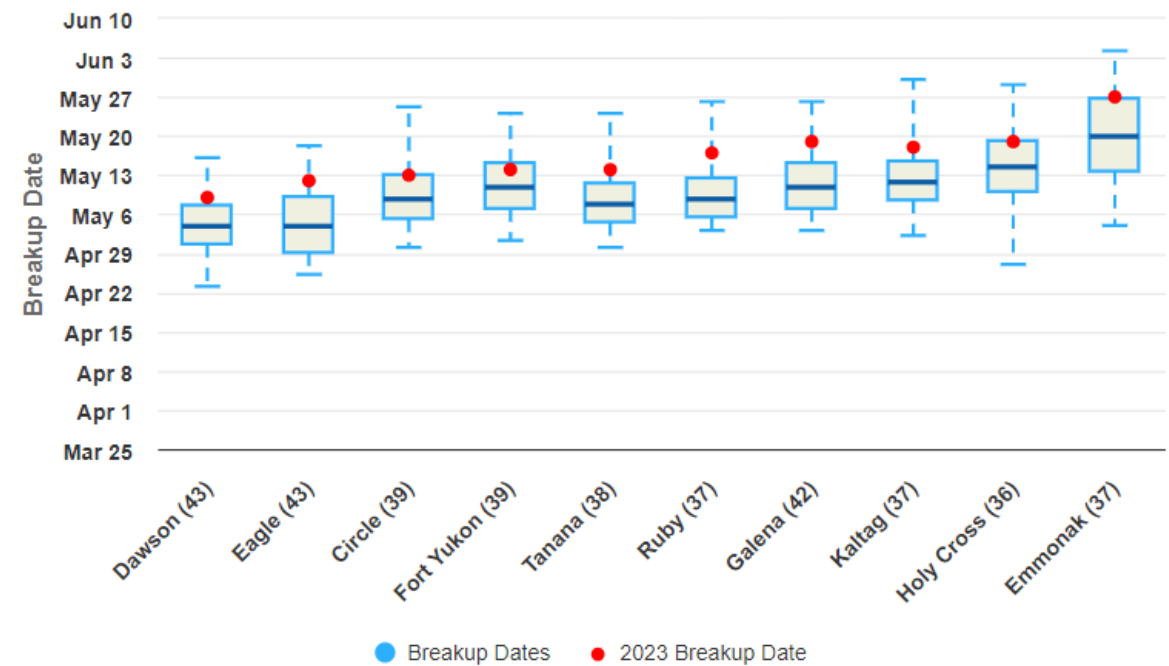
## Kuskokwim breakup ~10 days late

Kuskokwim River Breakup Dates 1980 - 2022



## Yukon breakup ~6 days late

Yukon River Breakup Dates 1980 - 2022



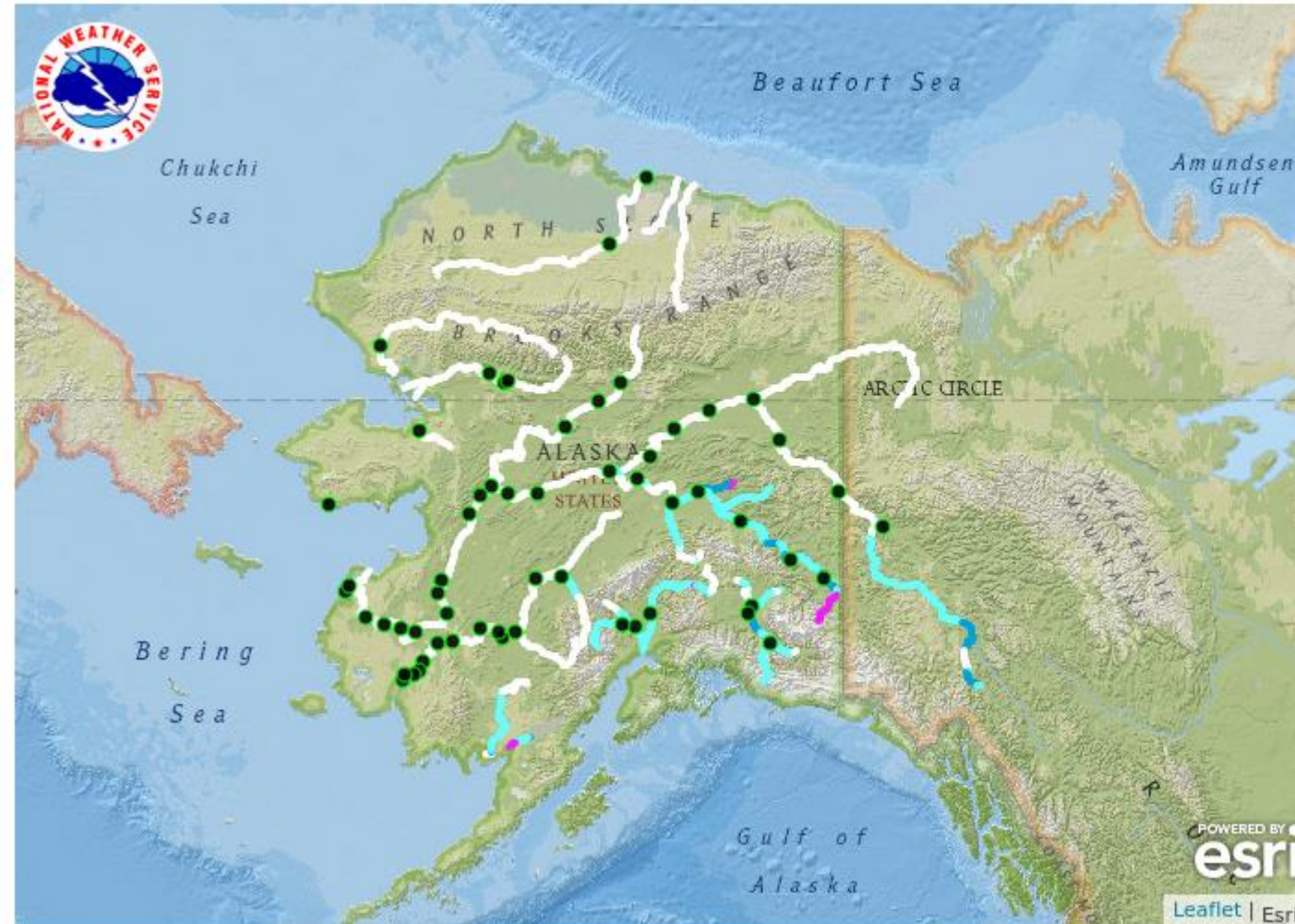
# Timeline of Events

May 9th



NWS Alaska Region

## APRFC Breakup Map - 9 May 2023 8:04:19 AM AKDT



This map allows you to view the breakup status of major rivers.

### River Status

- Unknown
- Mostly Ice
- Some Open
- Mostly Open
- Open

### Community Status

- No Warning
- Flood Advisory
- Flood Watch
- Flood Warning

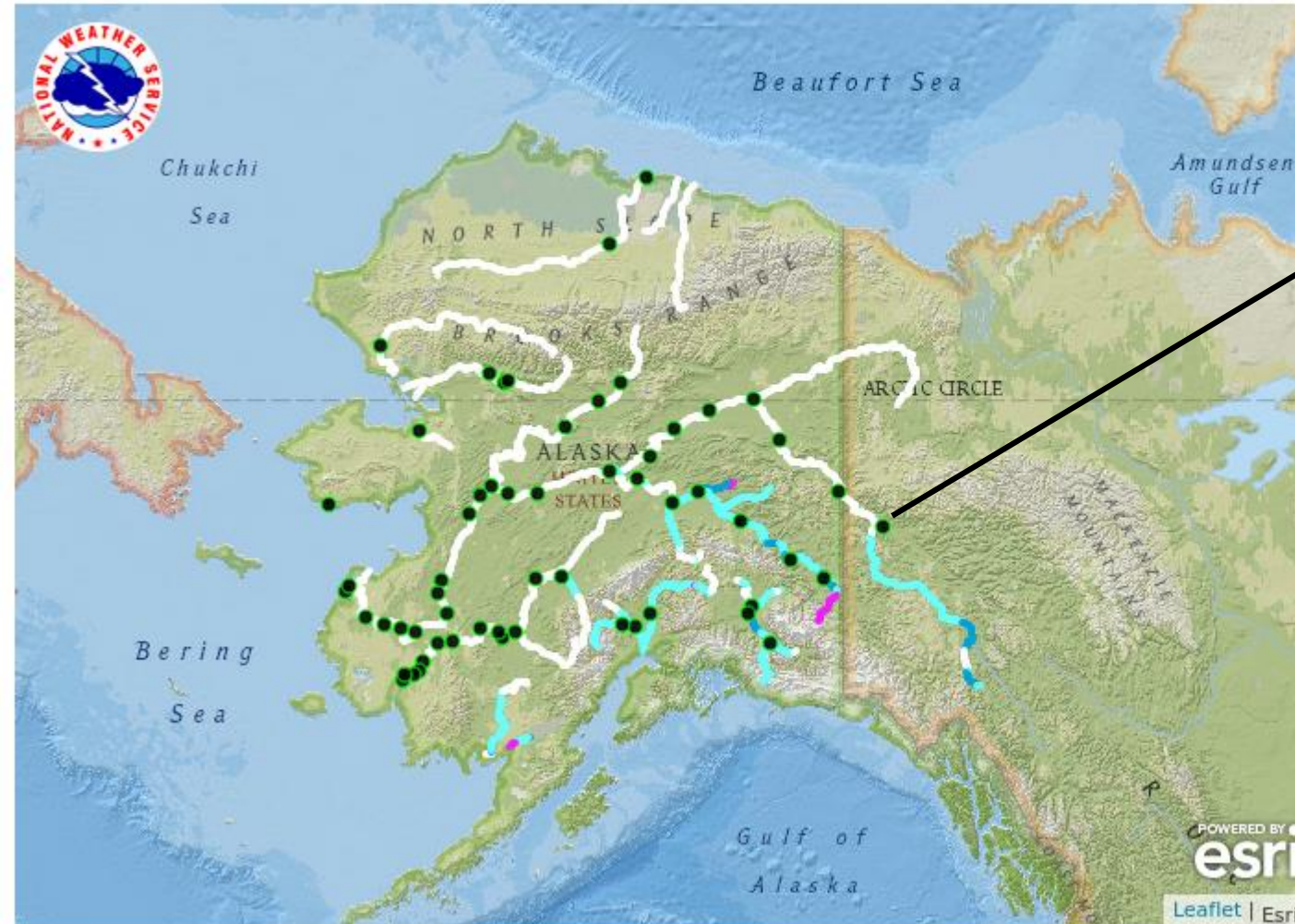
# Timeline of Events

May 9th



NWS Alaska Region

APRFC Breakup Map - 9 May 2023 8:04:19 AM AKDT



This map allows you to view the breakup status of major rivers.

Dawson breaks up on May 9<sup>th</sup>  
Multiple ice jams form downstream, major flooding to the border

# Timeline of Events

May 9 -12



NWS Alaska Region

APRFC Breakup Map - 9 May 2023 8:04:19 AM AKDT



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### River Status

- Unknown
- Mostly Ice
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May 9-12, 2 Ice jams form on the Forty Mile, flooding Steese Highway and Taylor Highway



# Timeline of Events

May 9 -12



NWS Alaska Region

APRFC Break



May 9-12, 2 Ice jams form on the Forty Mile, flooding Steese Highway and Taylor Highway

# Timeline of Events

May 9 -12



NWS Alaska Region

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May 9-12, 2 Ice jams form on the Forty Mile, flooding Steese Highway and Taylor Highway

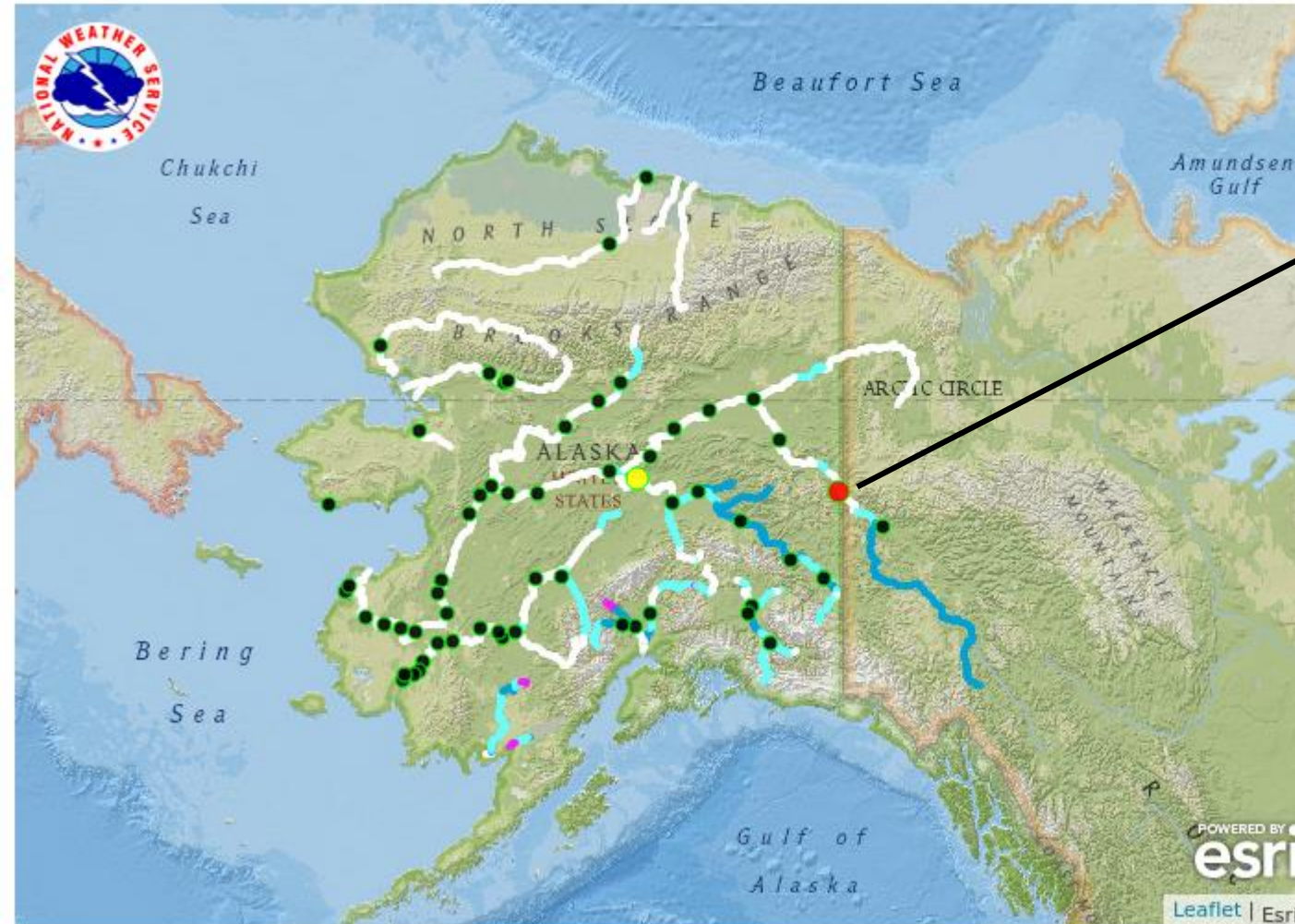
# Timeline of Events

May 12th



NWS Alaska Region

APRFC Breakup Map - 13 May 2023 7:55:32 AM AKDT



This map allows you to view the breakup status of major rivers.

### River Status

- Unknown
- Mostly Ice
- Some Open
- Mostly Open
- Open

### Community Status

- No Warning
- Flood Advisory
- Flood Watch
- Flood Warning

Eagle breaks up on May 12<sup>th</sup>  
Ice jam forms downstream,  
moderate flooding w/ damage to  
seawall, flooding roads, and  
destroying several structures

# Timeline of Events

May 12th



NWS Alaska Region

APRFC Breakup



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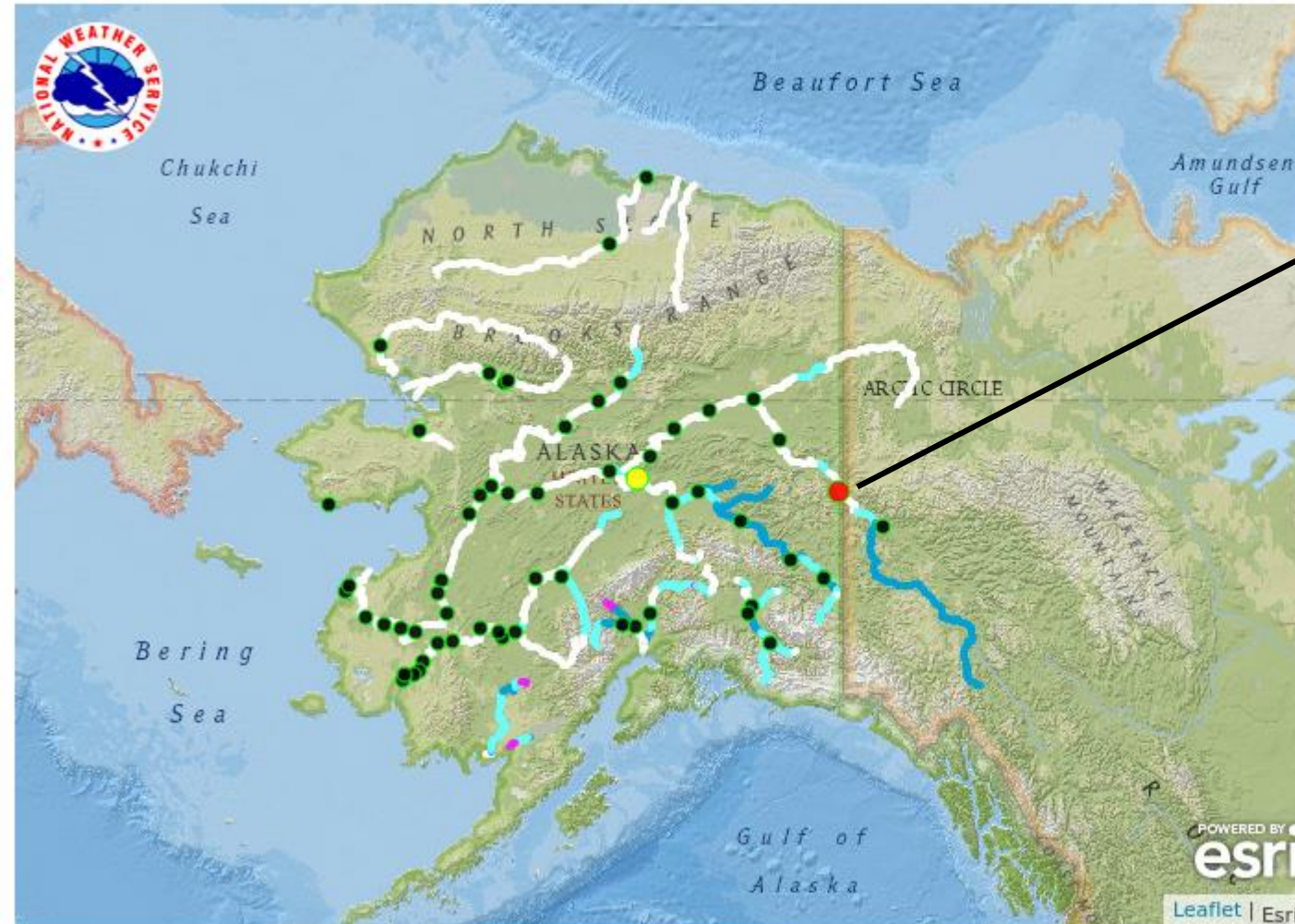
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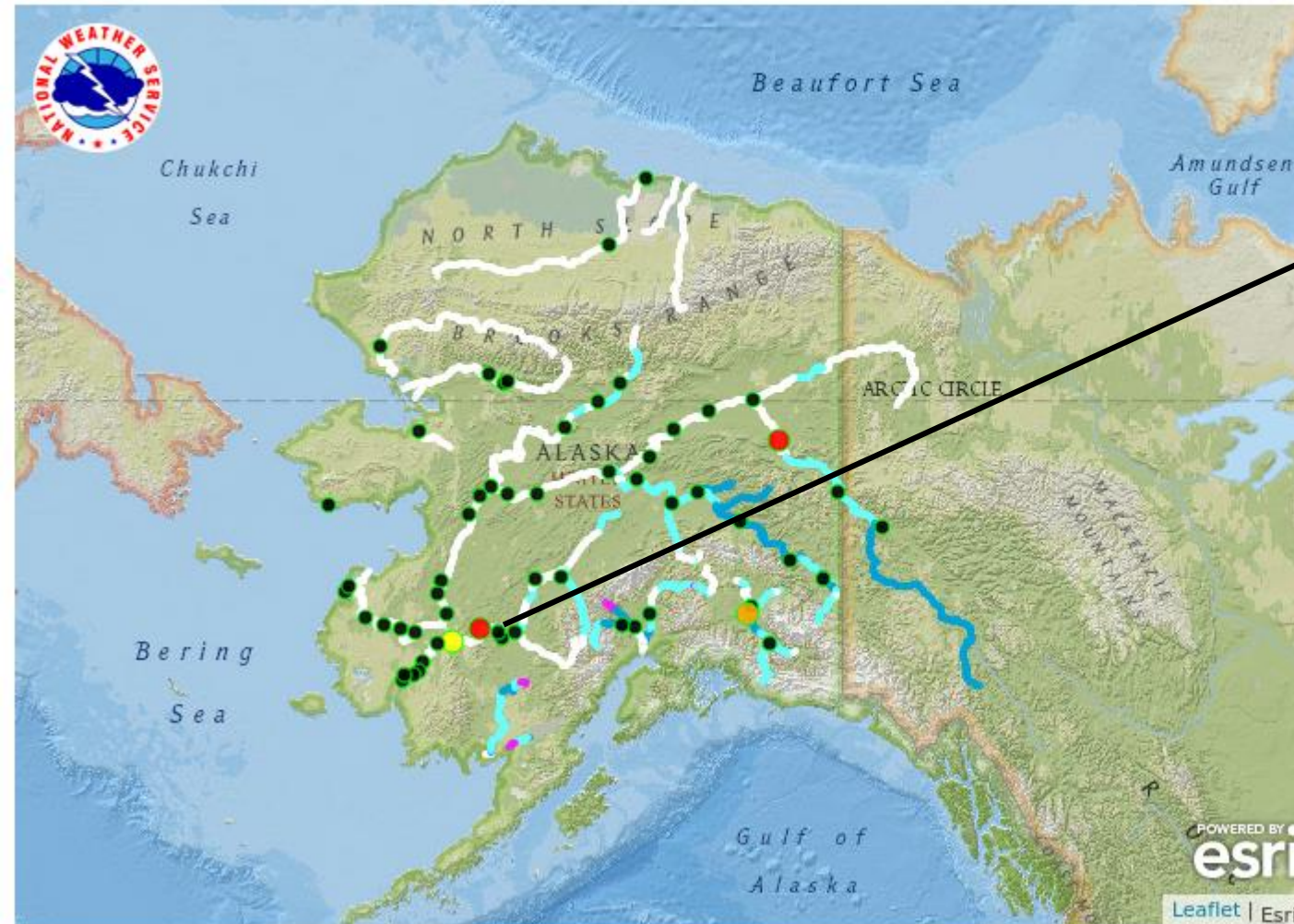
# Timeline of Events

May 13th



NWS Alaska Region

APRFC Breakup Map - 14 May 2023 8:11:10 AM AKDT



Breakup begins on Kusko at Stony River and Sleetmute by the evening on the 12<sup>th</sup>.

Breakup front reaches Red Devil morning of 13<sup>th</sup>, moderate flooding, damage to runway

# Timeline of Events

May 13th



NWS Alaska Region

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Breakup front reaches Red Devil morning of 13<sup>th</sup>, moderate flooding, damage to runway

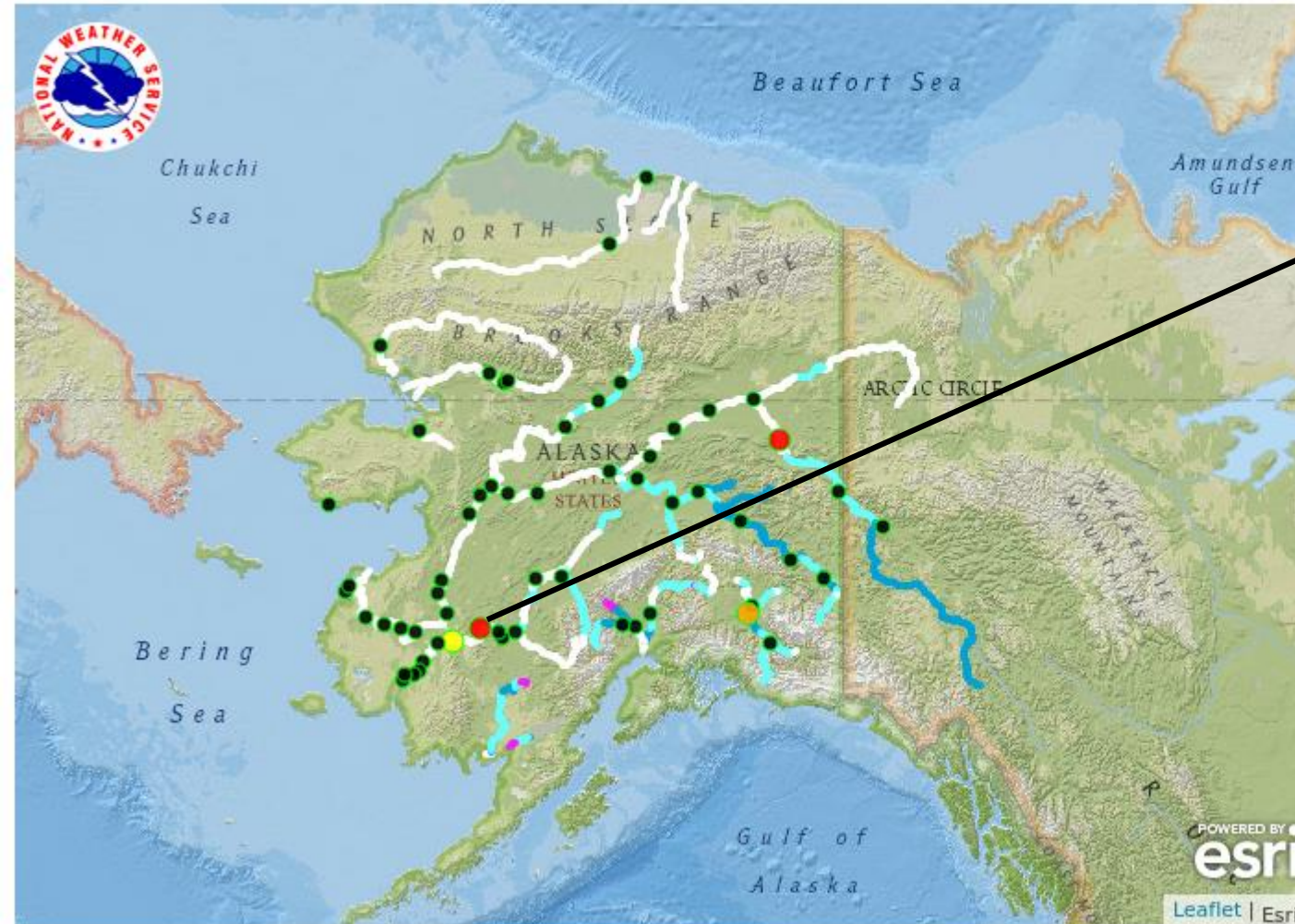
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May 13th



NWS Alaska Region

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### Community Status

- No Warning
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Breakup front reaches Crooked Creek evening of 13<sup>th</sup>, leading to catastrophic record flooding





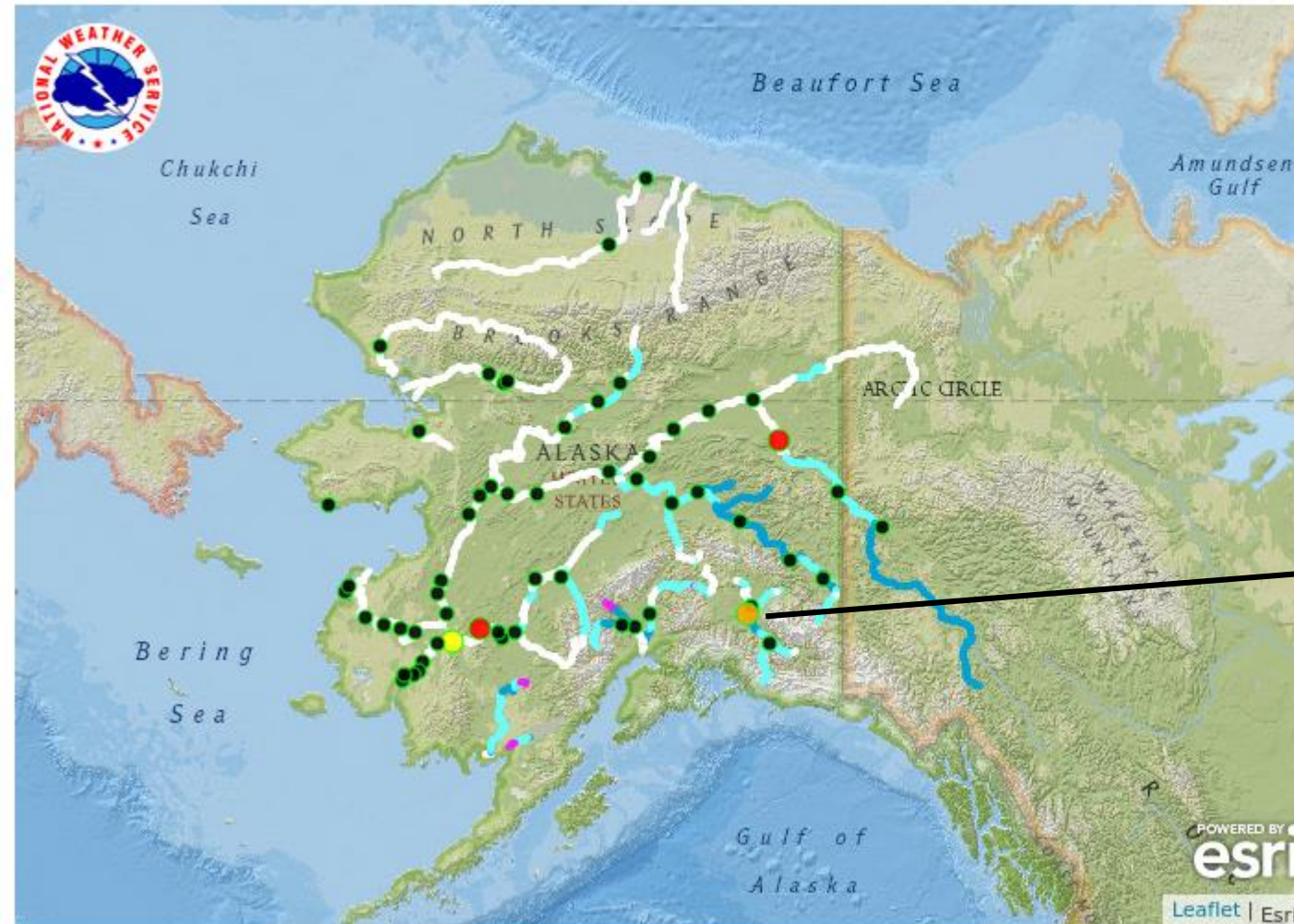
# Timeline of Events

May 13th



NWS Alaska Region

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Snow melt flooding in Glennallen

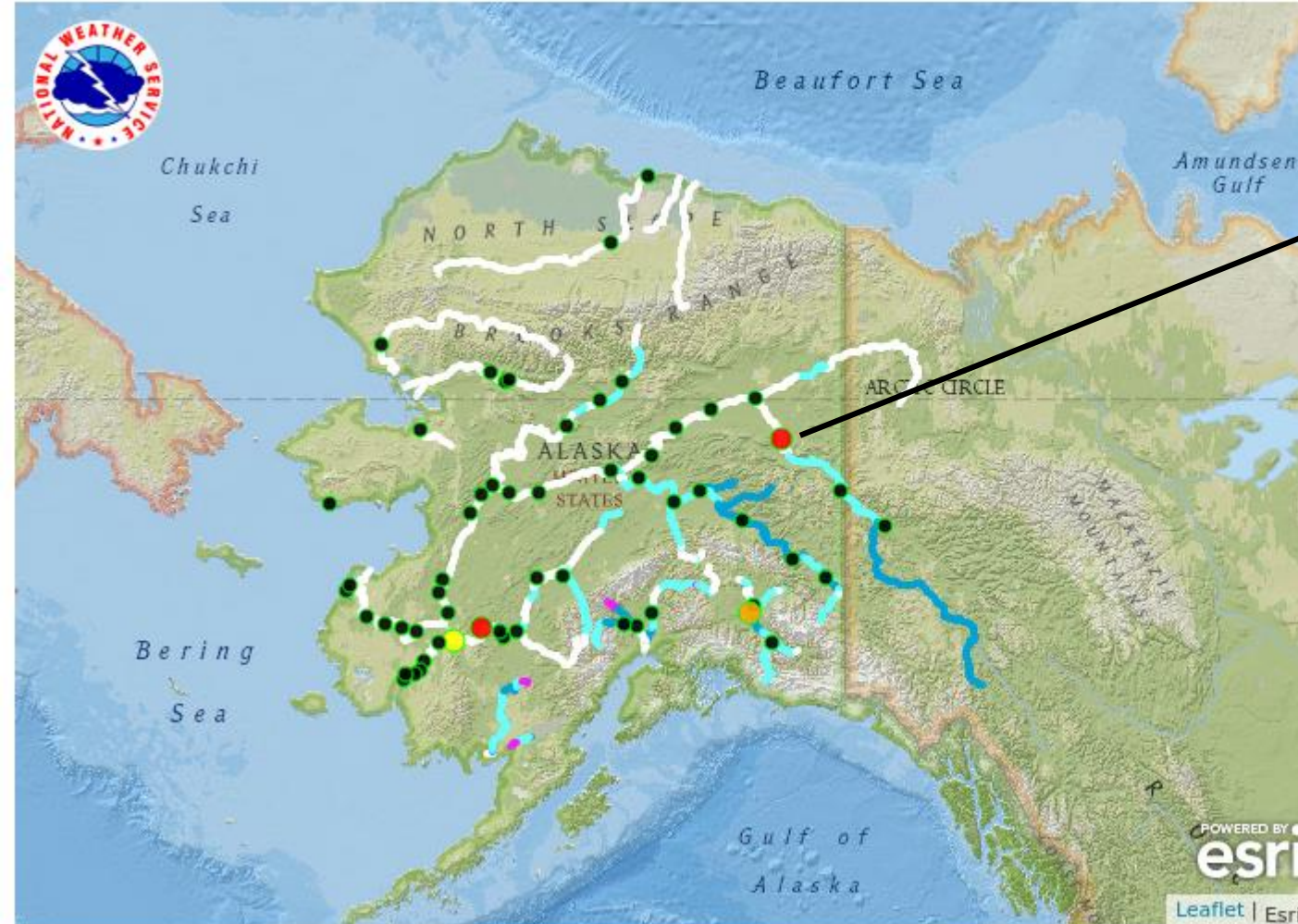
# Timeline of Events

May 13th



NWS Alaska Region

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- Flood Warning

Breakup front reaches Circle on May 13<sup>th</sup>  
Ice jam leads to all time record flooding

# Timeline of Events

May 13th



NWS Alaska Region



reaches Circle on  
all time record



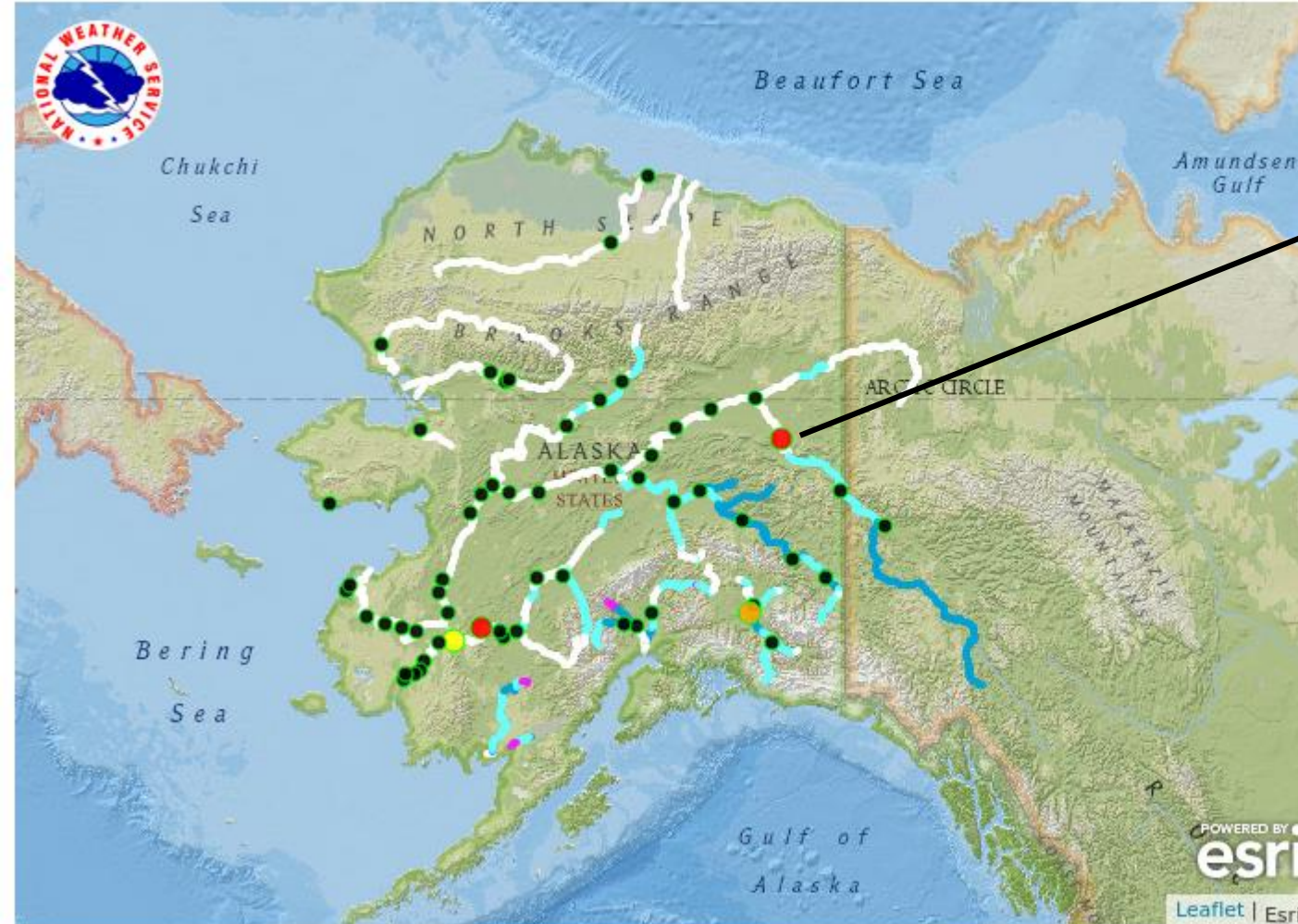
# Timeline of Events

May 13th



NWS Alaska Region

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- Unknown
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### Community Status

- No Warning
- Flood Advisory
- Flood Watch
- Flood Warning

Breakup front reaches Circle on May 13<sup>th</sup>  
Ice jam leads to all time record flooding

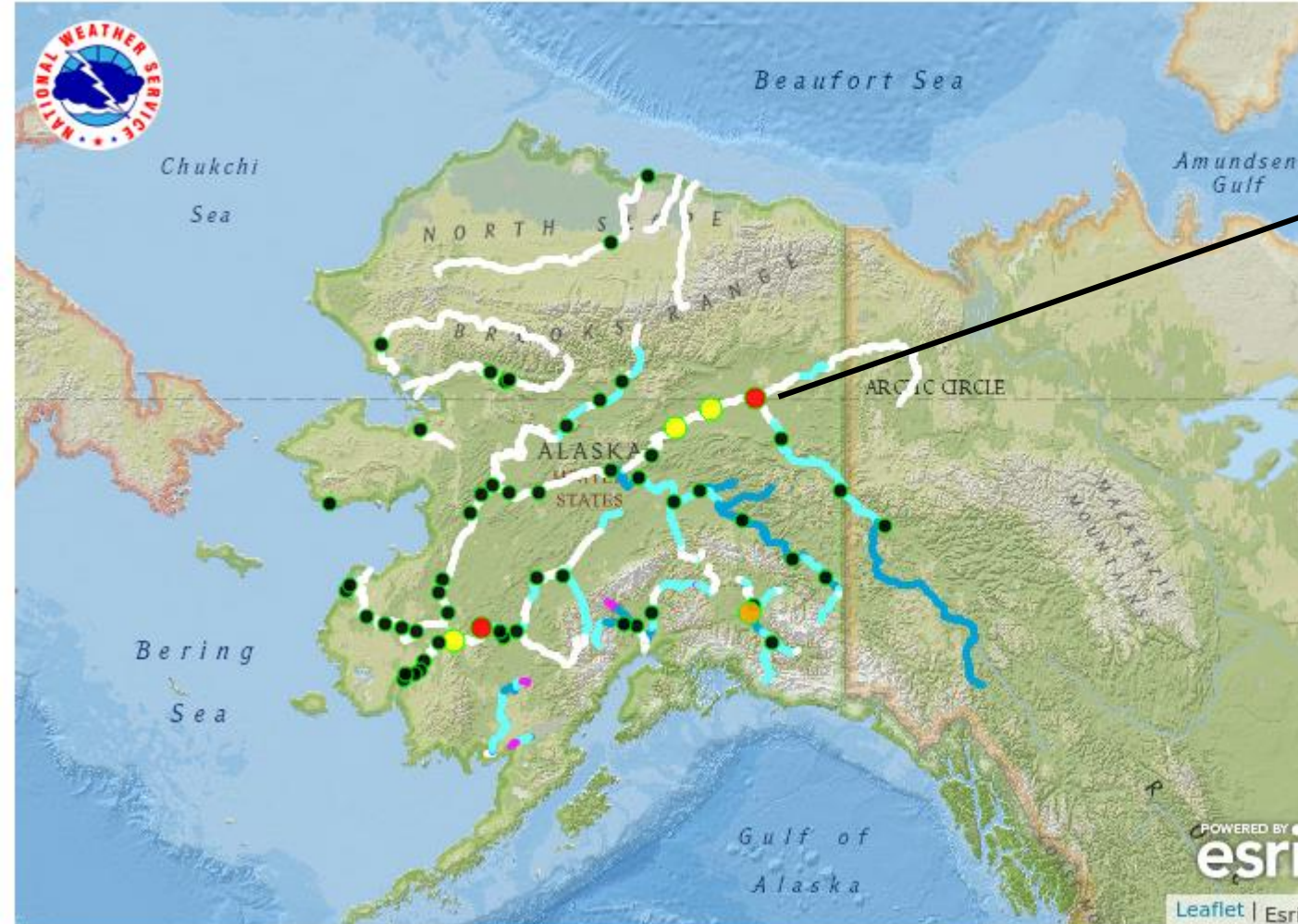
# Timeline of Events

May 14th



NWS Alaska Region

## APRFC Breakup Map - 15 May 2023 8:03:02 AM AKDT



This map allows you to view the breakup status of major rivers.

### River Status

- Unknown
- Mostly Ice
- Some Open
- Mostly Open
- Open

### Community Status

- No Warning
- Flood Advisory
- Flood Watch
- Flood Warning

Breakup front reaches Fort Yukon on May 14th

Moderate flooding with several roads and homes inundated

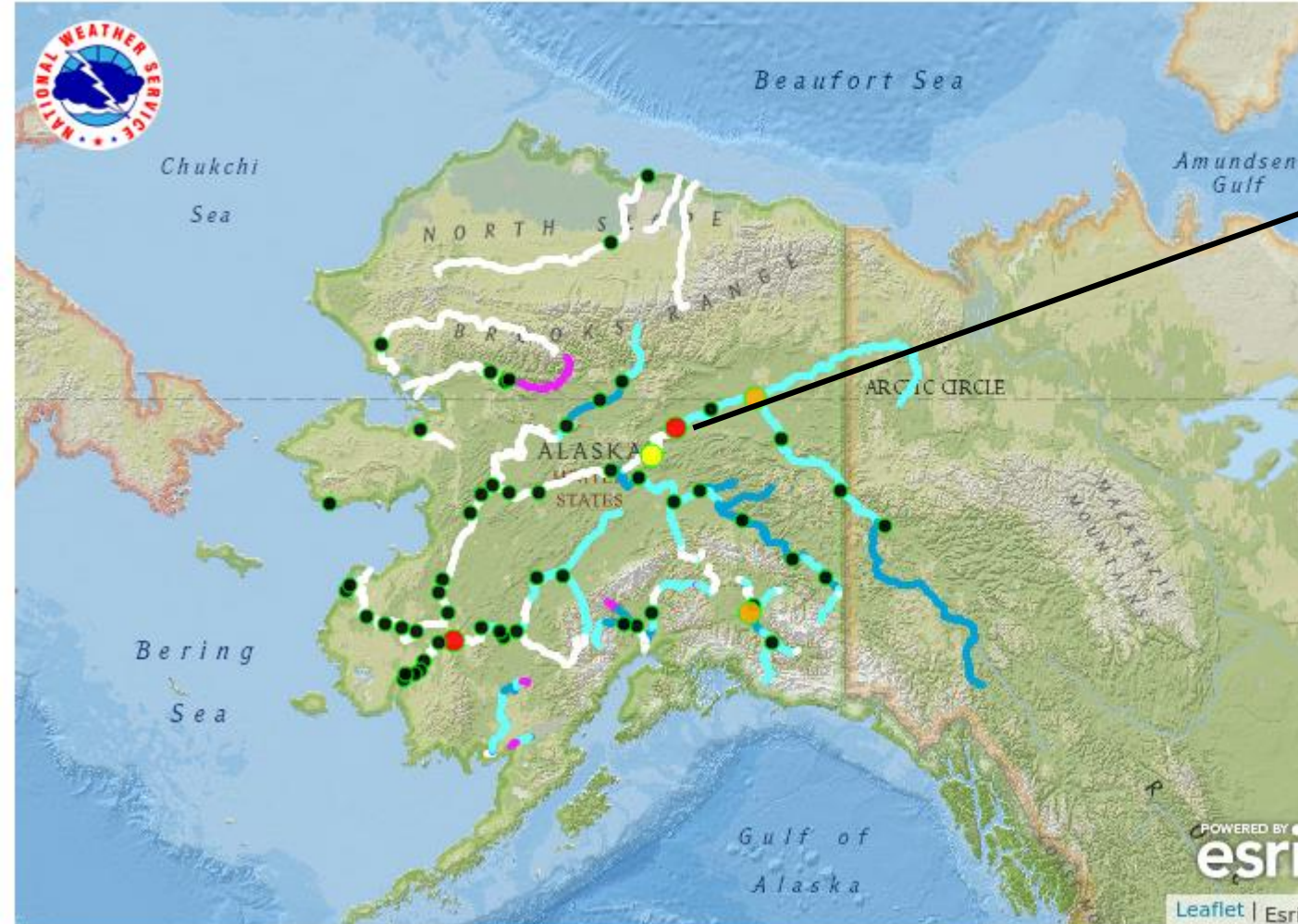
# Timeline of Events

May 15th



NWS Alaska Region

## APRFC Breakup Map - 16 May 2023 8:15:57 AM AKDT



Yukon breakup front moves down past Stevens Village with minor flooding

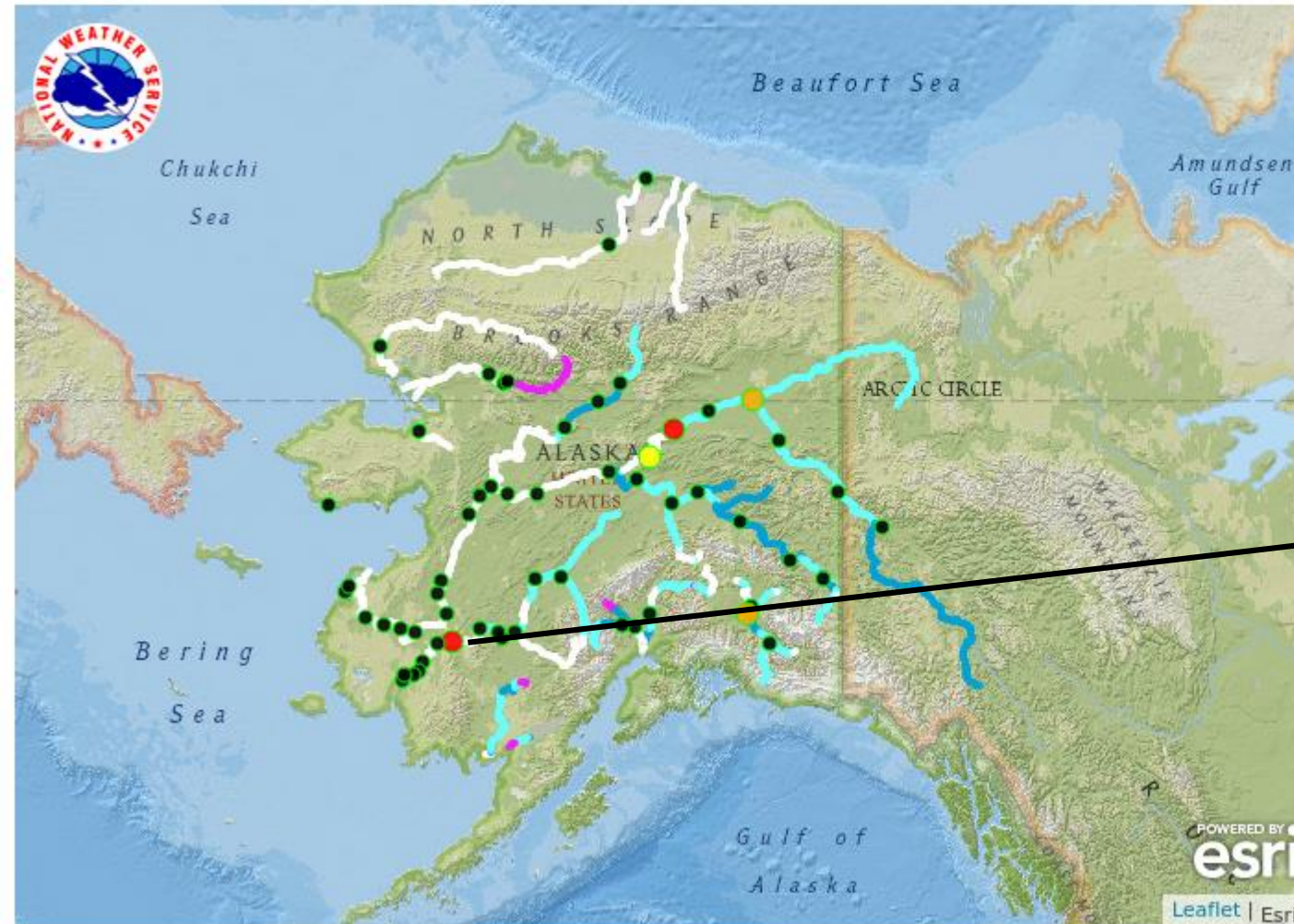
# Timeline of Events

May 15th



NWS Alaska Region

## APRFC Breakup Map - 16 May 2023 8:15:57 AM AKDT



This map allows you to view the breakup status of major rivers.

### River Status

- Unknown
- Mostly Ice
- Some Open
- Mostly Open
- Open

### Community Status

- No Warning
- Flood Advisory
- Flood Watch
- Flood Warning

Kusko breakup front moves down past Napaimute with minor/moderate flooding of the runway and cabins



# Timeline of Events

May 15th



NWS Alaska Region

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- Mostly Ice
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### Community Status

- No Warning
- Flood Advisory
- Flood Watch
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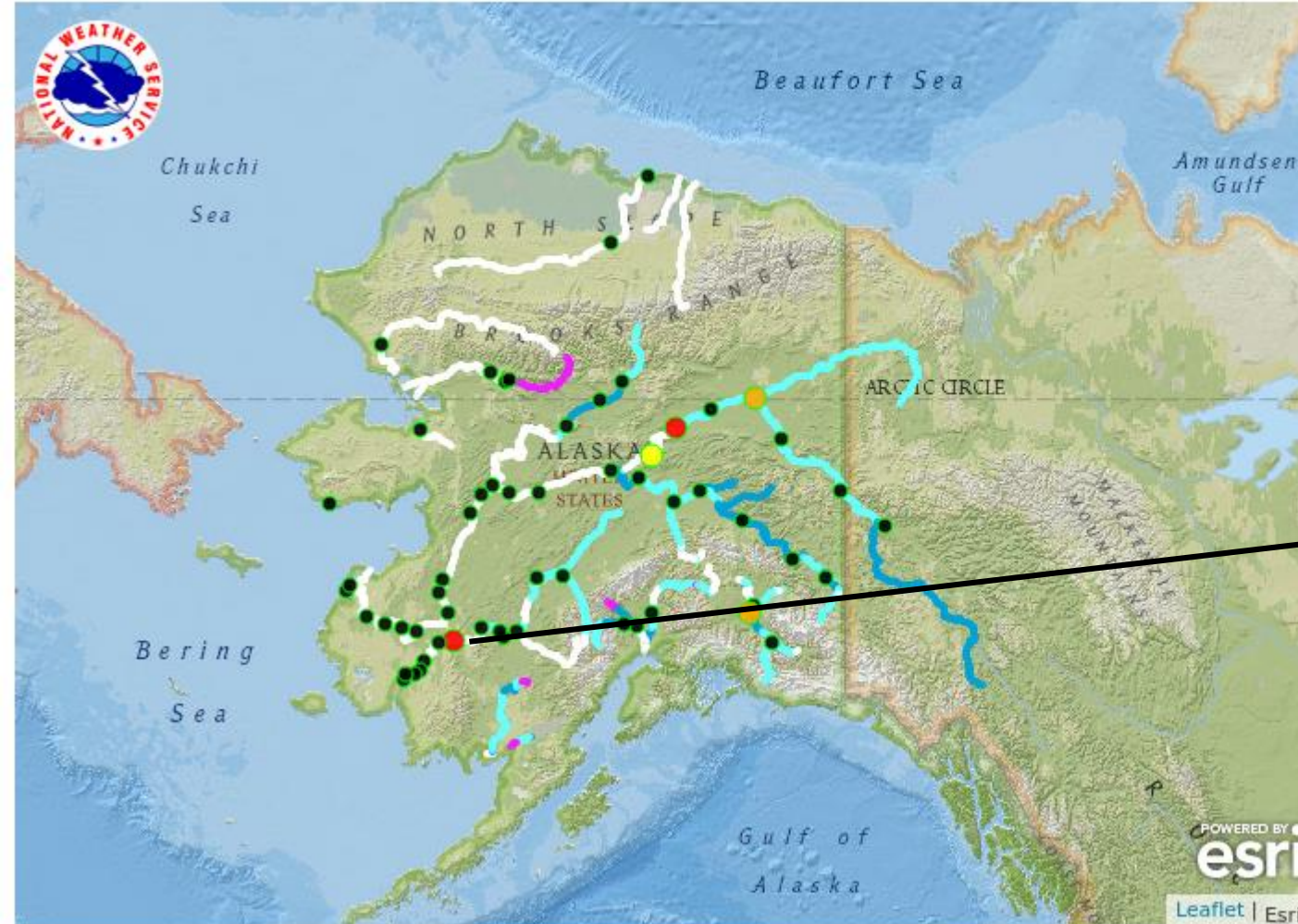
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May 15th



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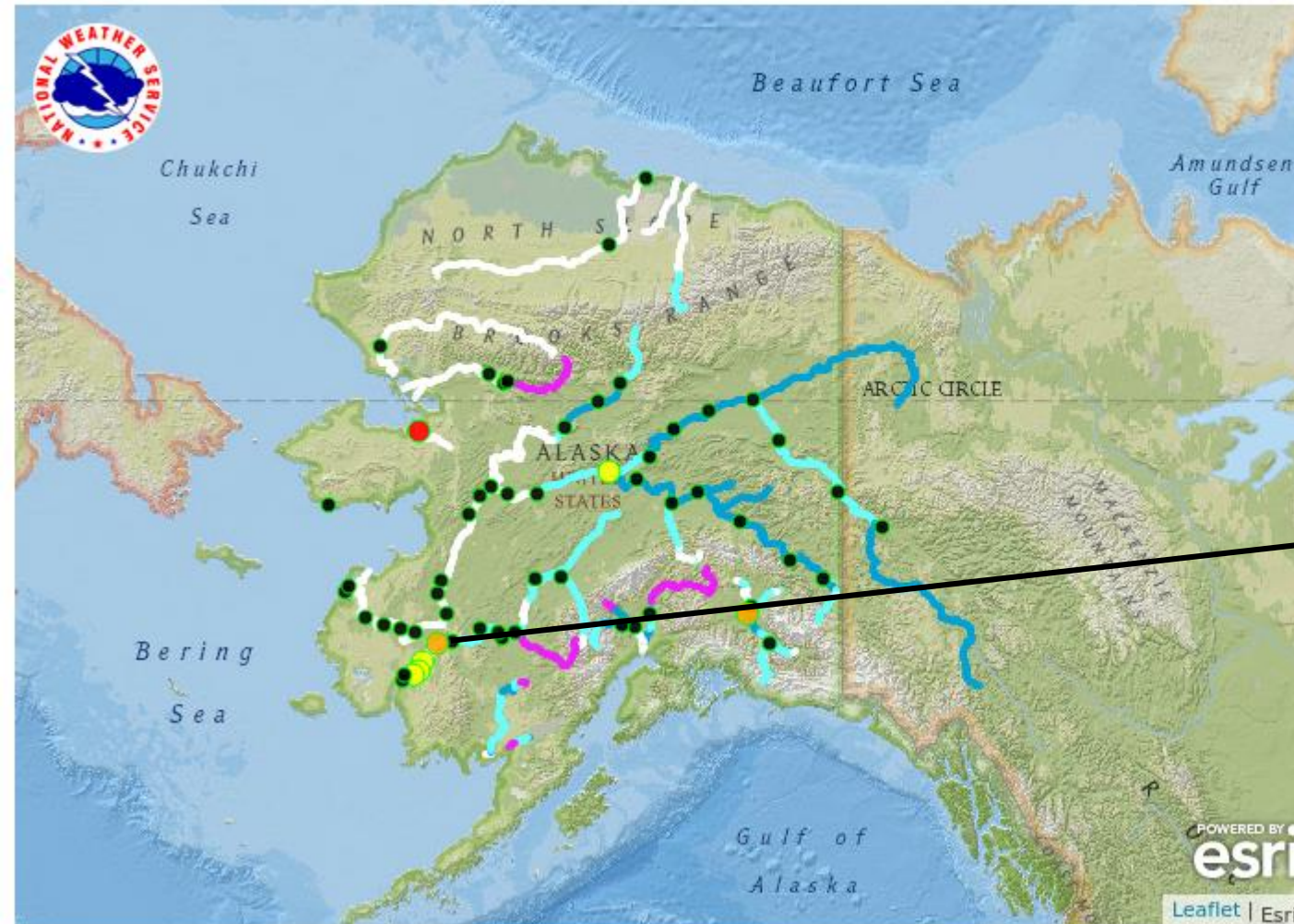
# Timeline of Events

May 16th



NWS Alaska Region

## APRFC Breakup Map - 17 May 2023 7:02:28 AM AKDT



This map allows you to view the breakup status of major rivers.

### River Status

- Unknown
- Mostly Ice
- Some Open
- Mostly Open
- Open

### Community Status

- No Warning
- Flood Advisory
- Flood Watch
- Flood Warning

Kusko breakup front moves down past Aniak with minor flooding around the airport

# Timeline of Events



May 16th

APRFC I



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### River Status

- Unknown
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- Mostly Open
- Open

### Community Status

- No Warning
- Flood Advisory
- Flood Watch
- Flood Warning

Kusko breakup front moves down past Aniak with minor flooding around the airport

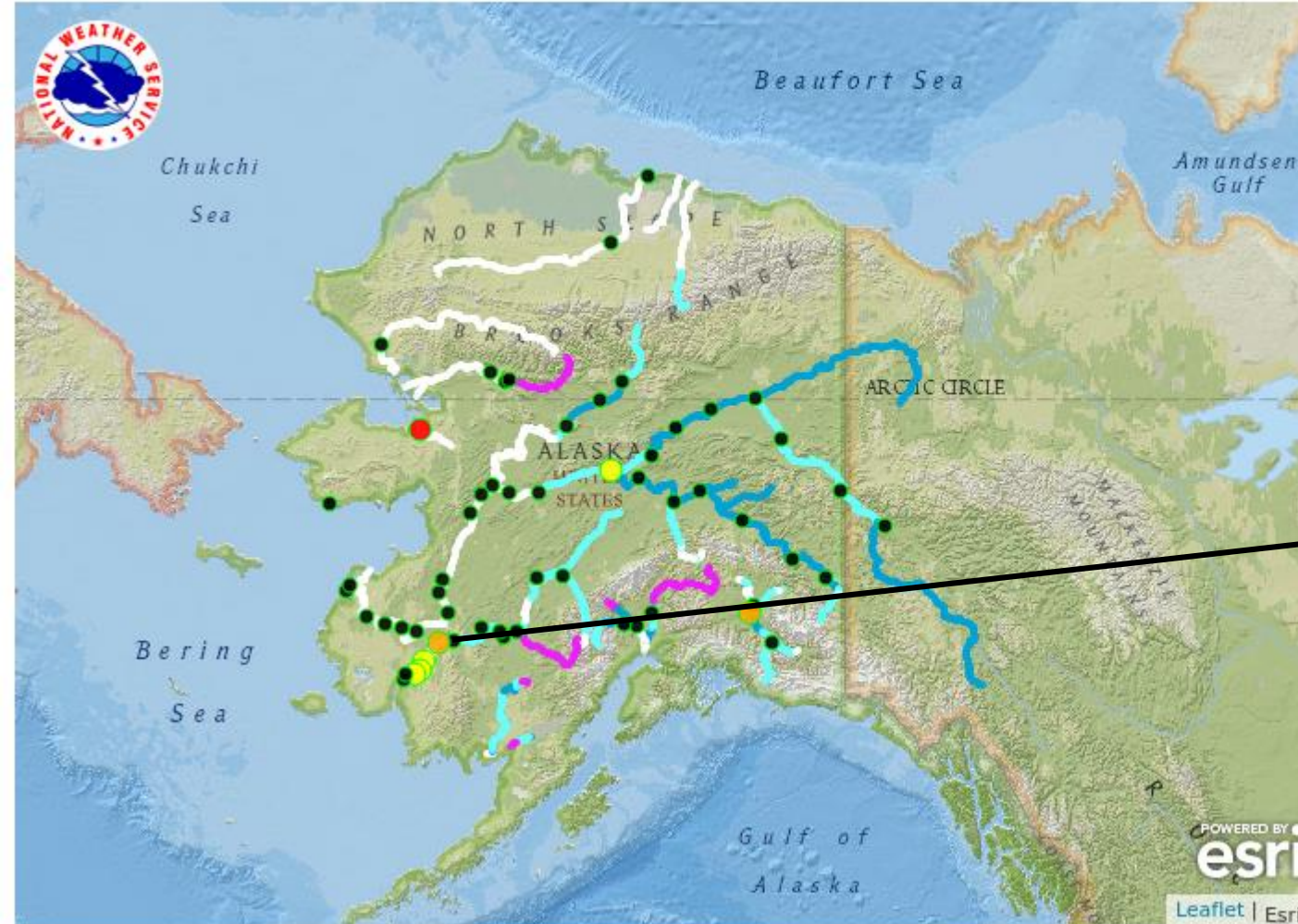
# Timeline of Events

May 16th



NWS Alaska Region

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### Community Status

- No Warning
- Flood Advisory
- Flood Watch
- Flood Warning

Kusko breakup front moves down past Aniak with minor flooding around the airport

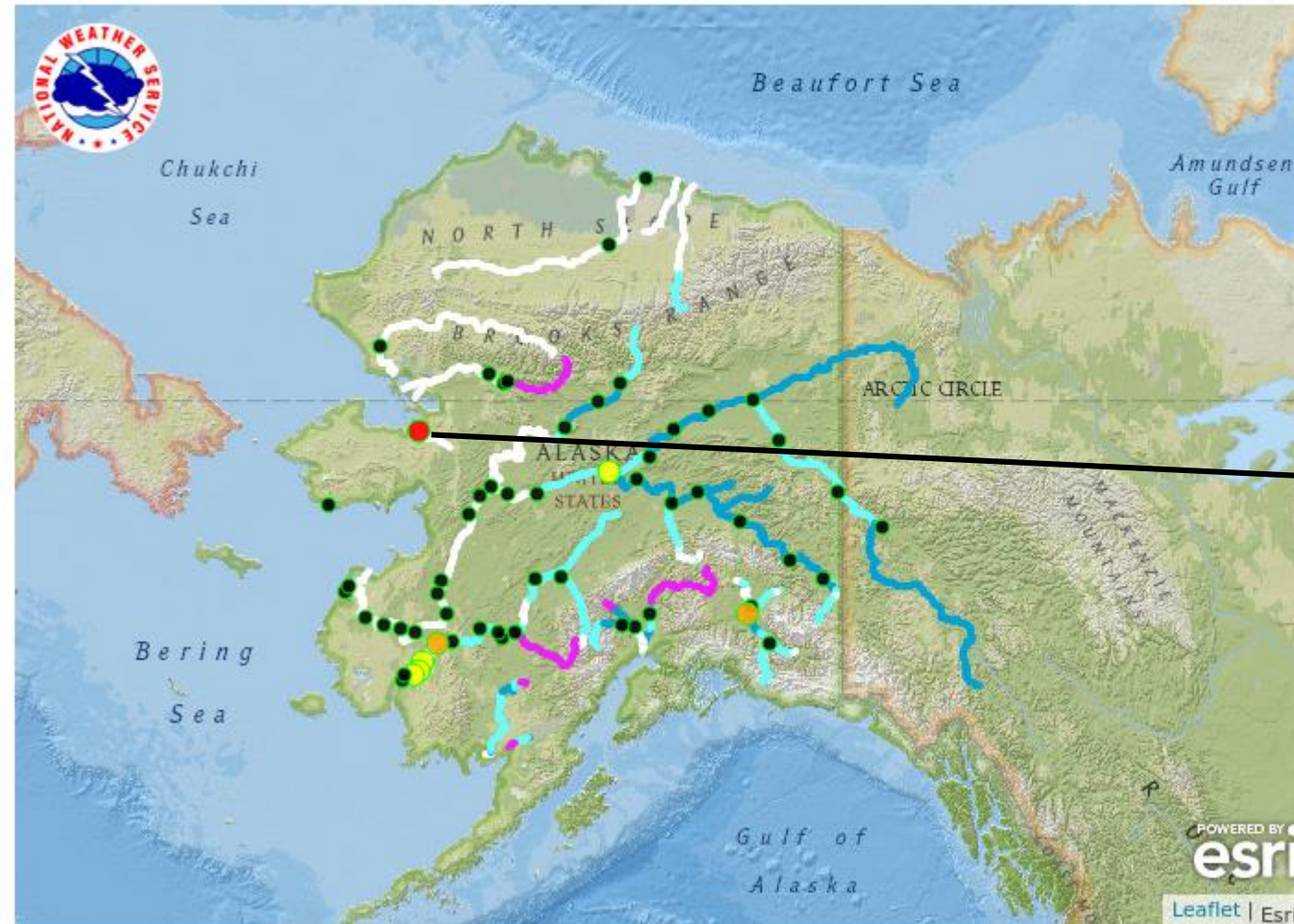
# Timeline of Events

May 16th



NWS Alaska Region

## APRFC Breakup Map - 17 May 2023 7:02:28 AM AKDT



This map allows you to view the breakup status of major rivers.

### River Status

- Unknown
- Mostly Ice
- Some Open
- Mostly Open
- Open

### Community Status

- No Warning
- Flood Advisory
- Flood Watch
- Flood Warning

**Buckland River breaks up and floods the village of Buckland for the 3<sup>rd</sup> time in 4 years**

# Timeline of Events

May 16th



NWS Alaska Region



allows you to view the status of major rivers.

### River Status

- Unknown
- Mostly Ice
- Some Open
- Mostly Open
- Open

### Community Status

- No Warning
- Flood Advisory
- Flood Watch
- Flood Warning

**Buckland River breaks up and floods the village of Buckland for the 3<sup>rd</sup> time in 4 years**

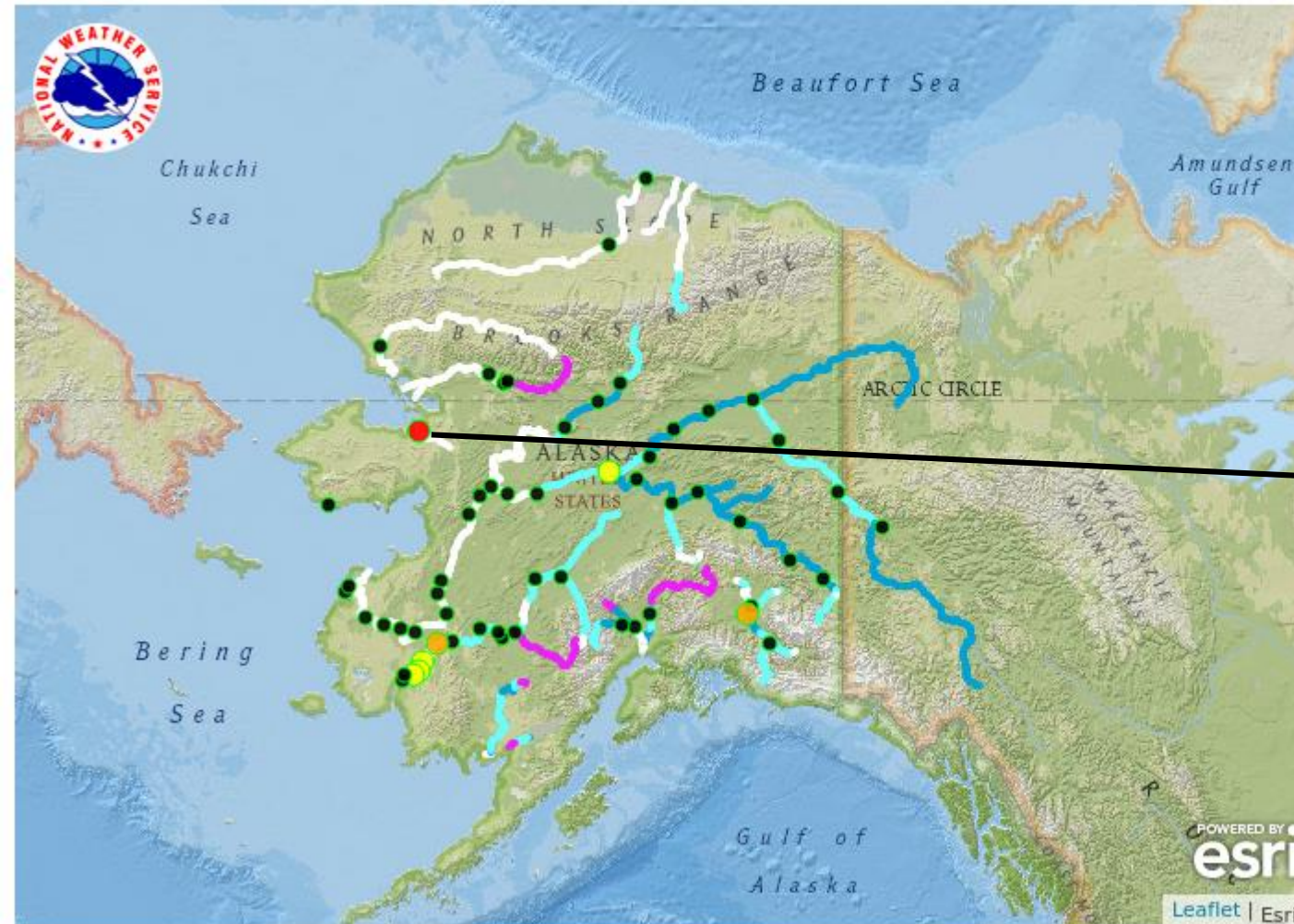
# Timeline of Events

May 16th



NWS Alaska Region

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This map allows you to view the breakup status of major rivers.

### River Status

- Unknown
- Mostly Ice
- Some Open
- Mostly Open
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### Community Status

- No Warning
- Flood Advisory
- Flood Watch
- Flood Warning

**Buckland River breaks up and floods the village of Buckland for the 3<sup>rd</sup> time in 4 years**



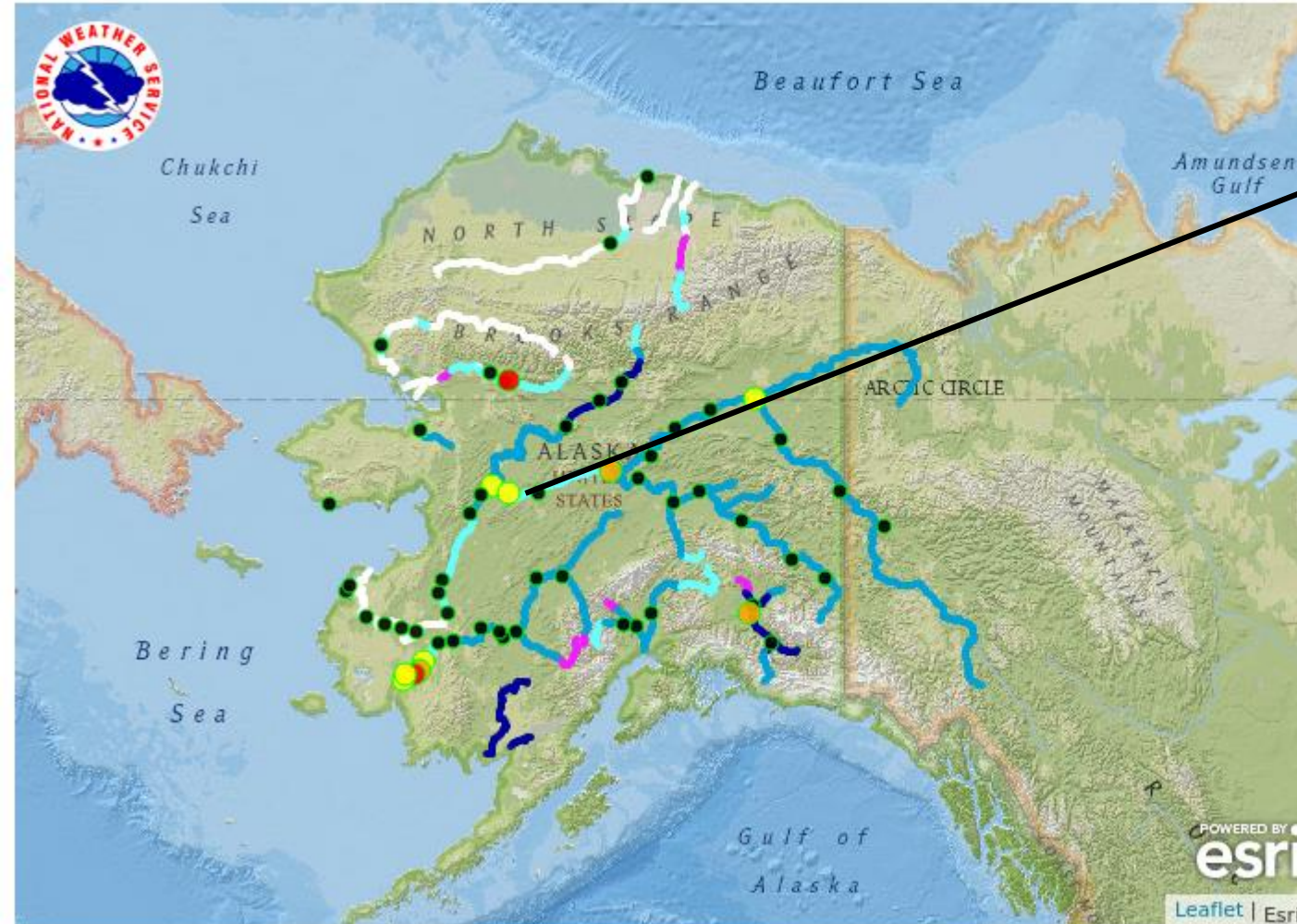
# Timeline of Events

May 19-20



NWS Alaska Region

APRFC Breakup Map - 20 May 2023 8:10:46 AM AKDT



This map allows you to view the breakup status of major rivers.

### River Status

- Unknown
- Mostly Ice
- Some Open
- Mostly Open
- Open

### Community Status

- No Warning
- Flood Advisory
- Flood Watch
- Flood Warning

Yukon breakup front b/t Galena and Ruby, large ice jam forms upstream causing large areas of overbank flooding, including Kokrine Hills Bible Camp

# Timeline of Events

May 19-20



NWS Alaska Region



KDT



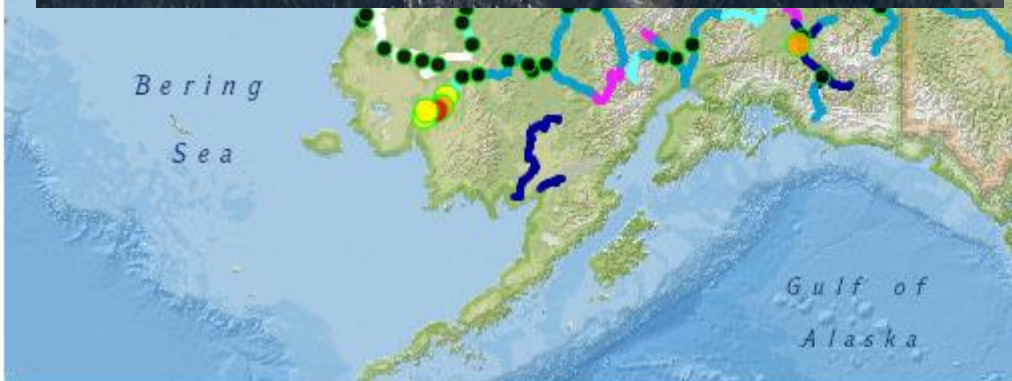
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River Status

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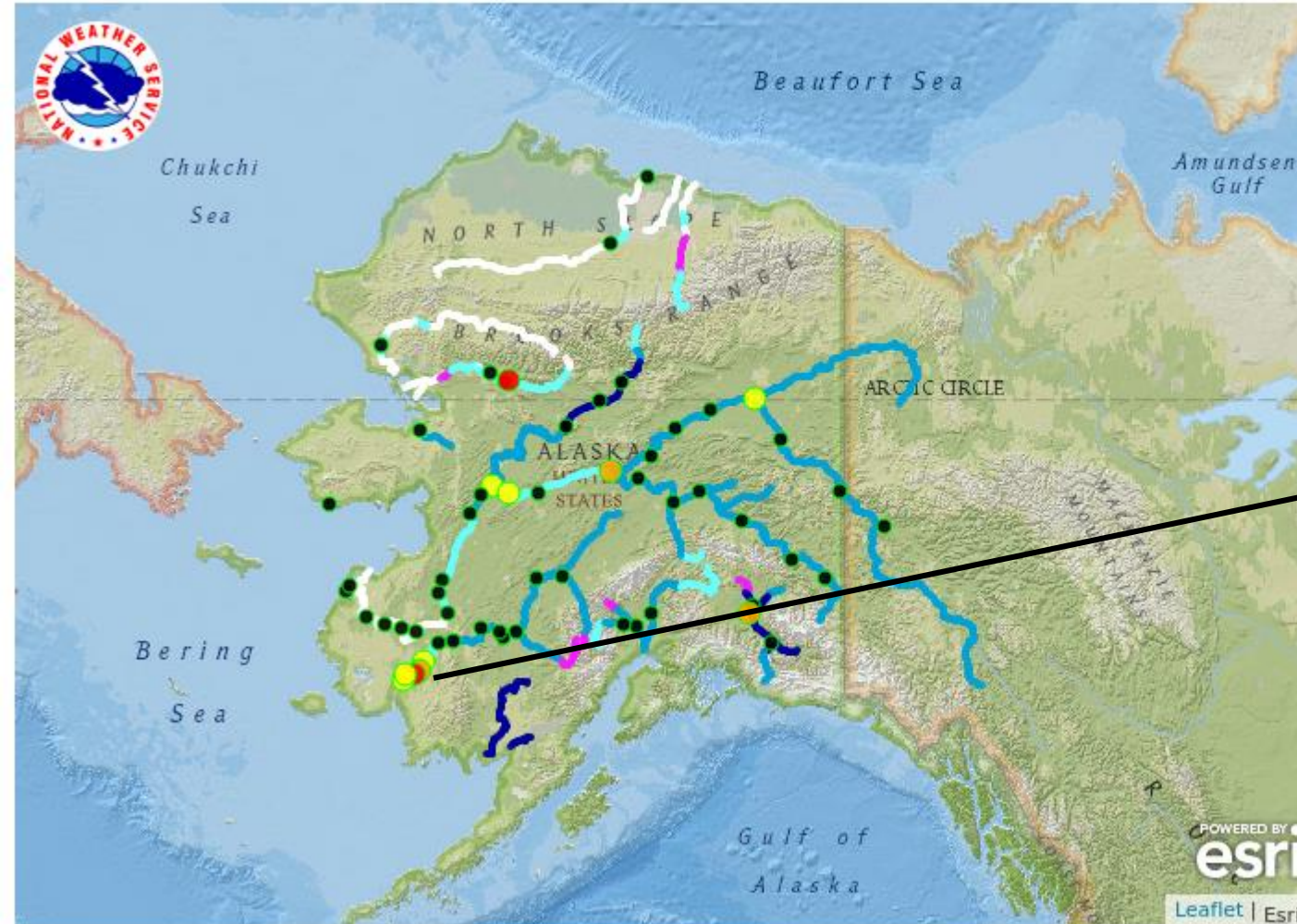
# Timeline of Events

May 19-20



NWS Alaska Region

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### Community Status

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- Flood Advisory
- Flood Watch
- Flood Warning

Kusko breakup moves downstream of Kwethluk causing flooding in Kwethluk and Kalskag

# Timeline of Events

May 19-20



NWS Alaska Region

APRFC Breakup



you to view the  
of major rivers.

### Status

- Known
- Open
- Open
- Open

### Community Status

- Warning
- Advisory
- Watch
- Warning

Kusko breakup front moves downstream of Kwethluk causing flooding in Kwethluk and Kalskag

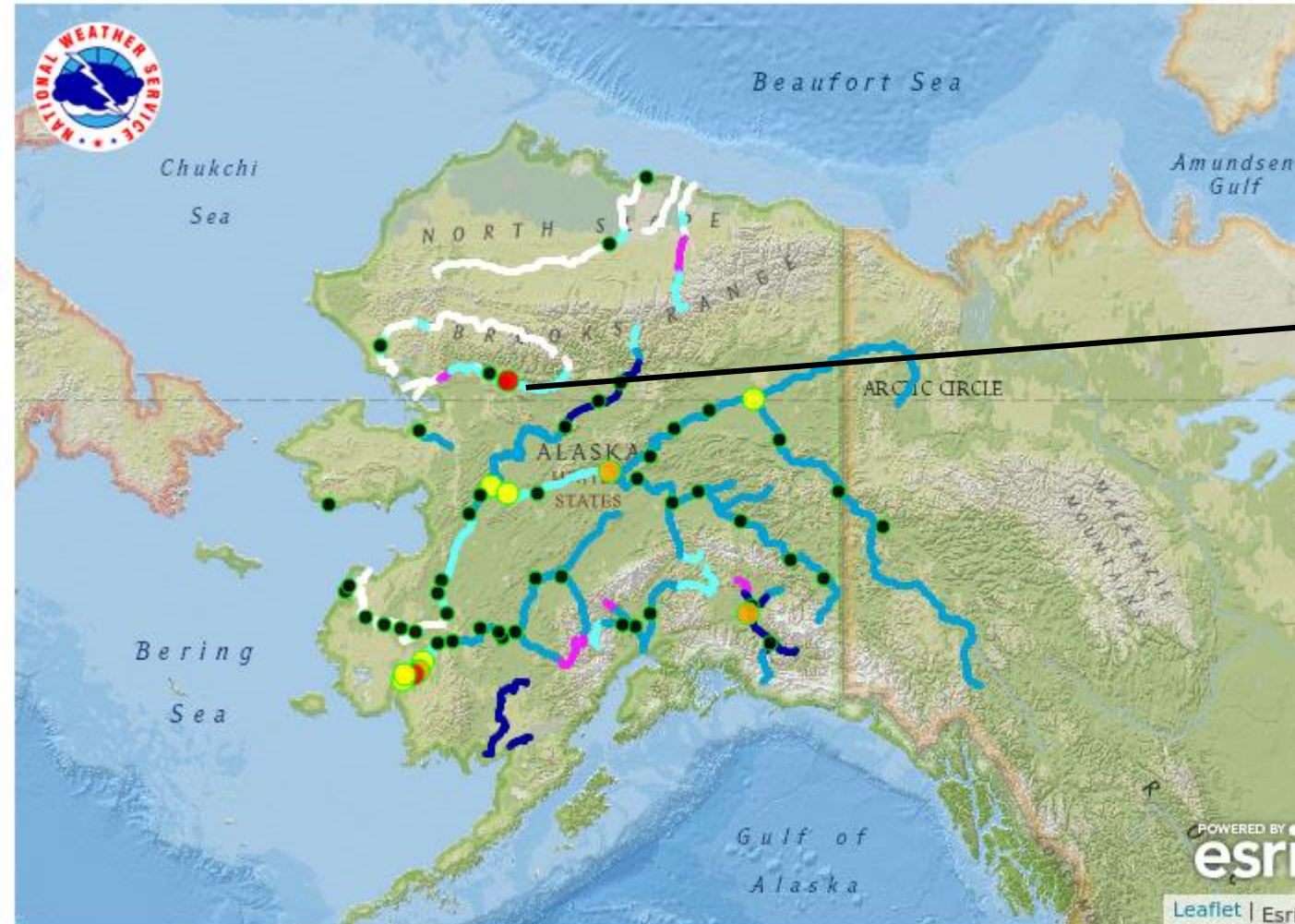
# Timeline of Events

May 19-20



NWS Alaska Region

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### River Status

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Minor to moderate flooding in Kobuk as the Kobuk River breaks up

### Community Status

- No Warning
- Flood Advisory
- Flood Watch
- Flood Warning

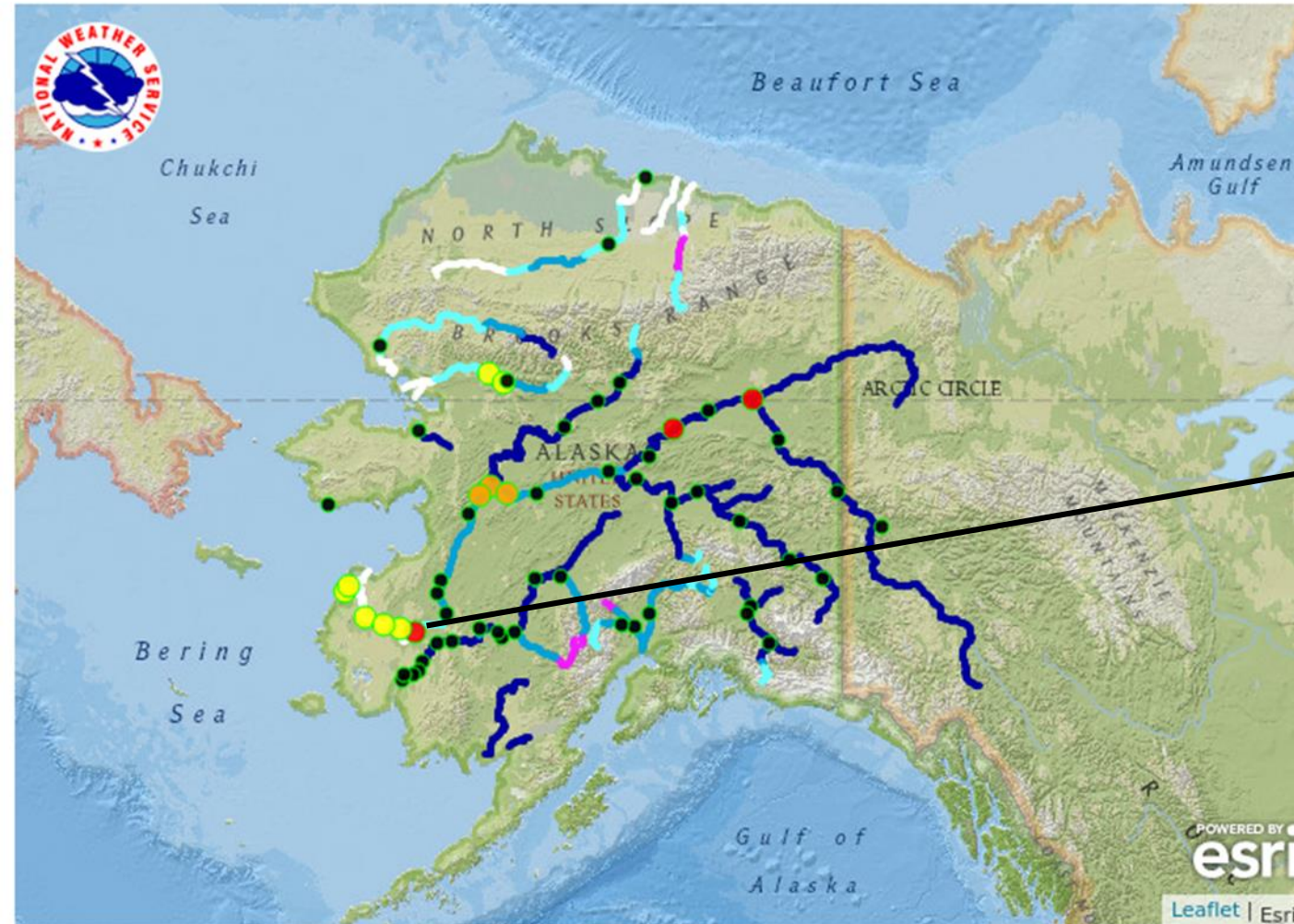
# Timeline of Events

May 21-26



NWS Alaska Region

APRFC Breakup Map - 23 May 2023 6:50:10 AM AKDT



This map allows you to view the breakup status of major rivers.

### River Status

- Unknown
- Mostly Ice
- Some Open
- Mostly Open
- Open

### Community Status

- No Warning
- Flood Advisory
- Flood Watch
- Flood Warning

Yukon breakup front moves downstream past Russian Mission causing moderate flooding for over a week and significantly damaging the Russian Mission runway

# Timeline of Events



NWS Alaska Region

May 21-26

APRFC Breakup Map - 23 May 2023 6:50:10 AM AKDT



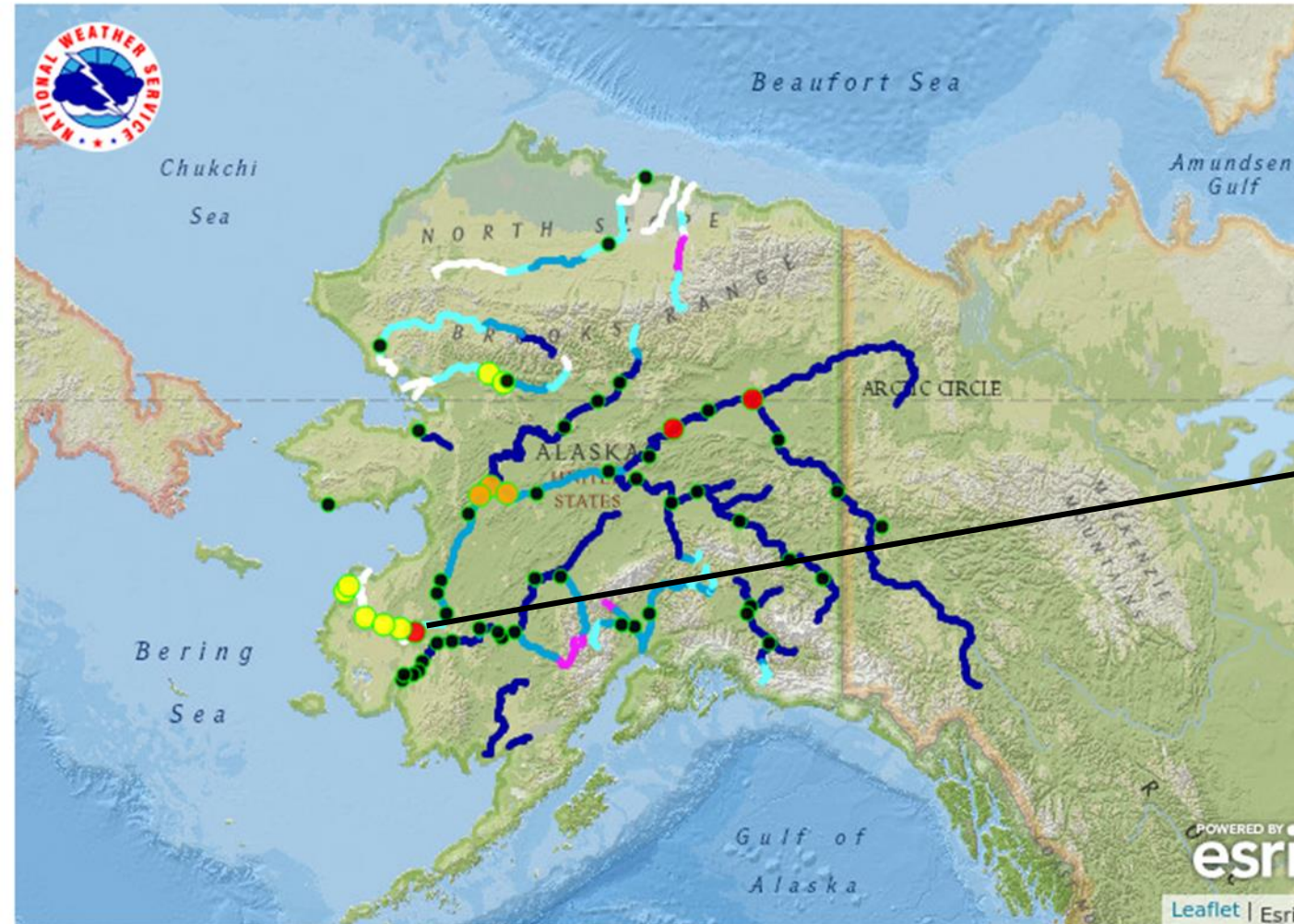
# Timeline of Events

May 21-26



NWS Alaska Region

APRFC Breakup Map - 23 May 2023 6:50:10 AM AKDT



Yukon breakup front moves downstream past Russian Mission causing moderate flooding for over a week and significantly damaging the Russian Mission runway



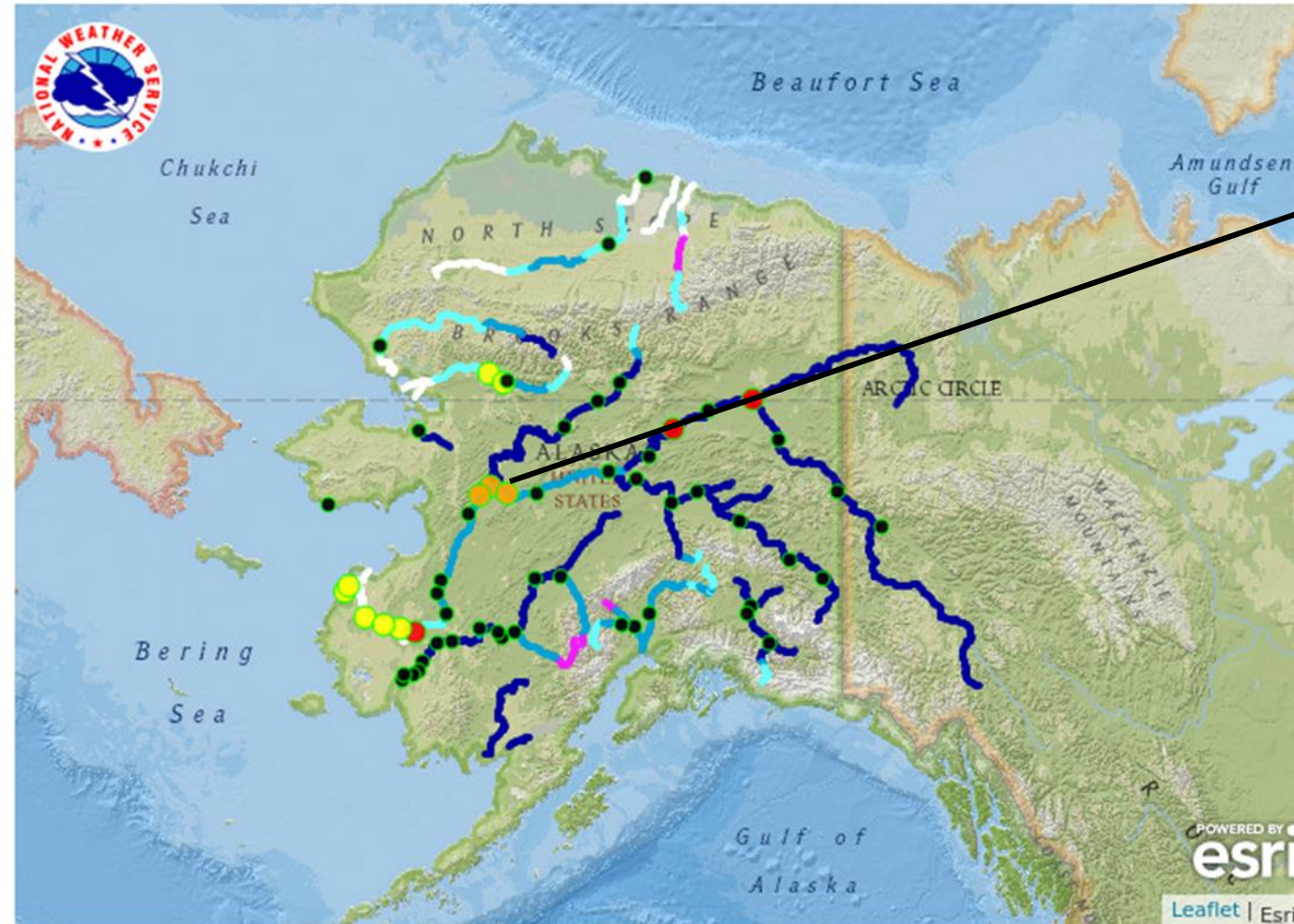
# Timeline of Events

May 21-26



NWS Alaska Region

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### Community Status

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- Flood Watch
- Flood Warning

Backwater from ice jams and upstream snow melt continued to cause minor flooding from Galena up to Tanana.

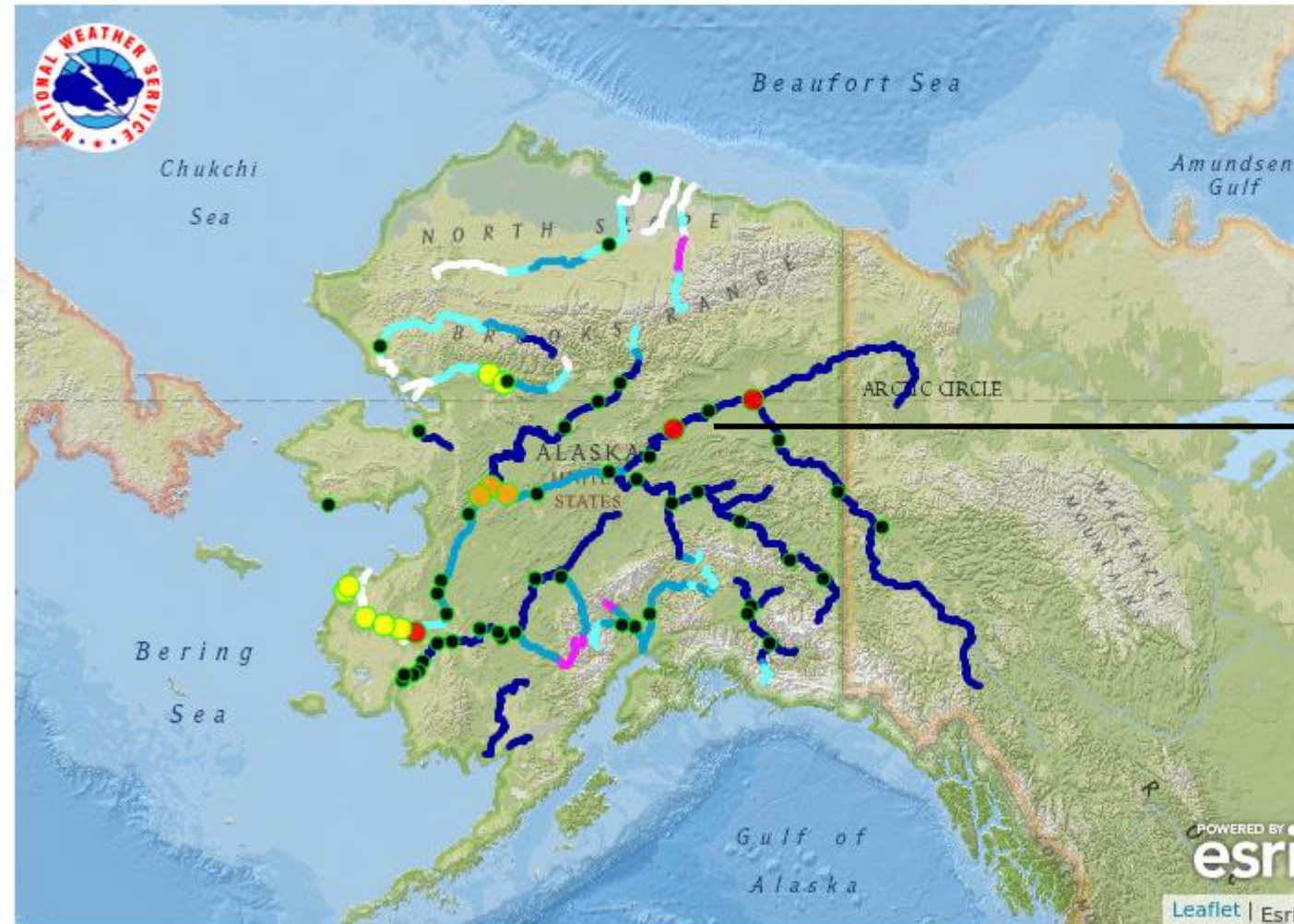
# Timeline of Events

May 21-26



NWS Alaska Region

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High water from snowmelt on the Upper Yukon and Porcupine lead to a 2<sup>nd</sup> wave of flooding in Stevens Village and Fort Yukon

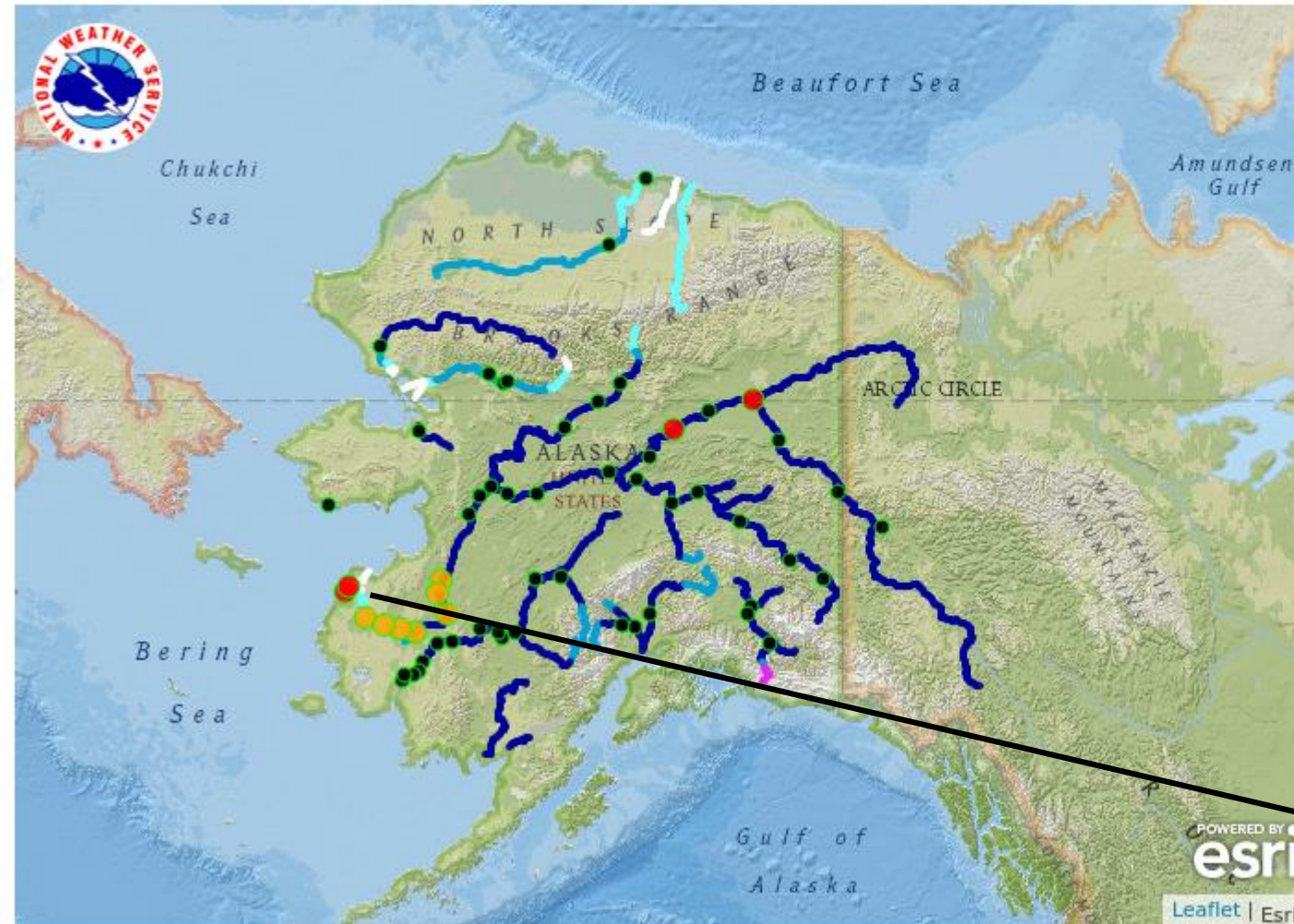
# Timeline of Events

May 27-29



NWS Alaska Region

## APRFC Breakup Map - 28 May 2023 7:57:37 AM AKDT



This map allows you to view the breakup status of major rivers.

### River Status

- Unknown
- Mostly Ice
- Some Open
- Mostly Open
- Open

### Community Status

- No Warning
- Flood Advisory
- Flood Watch
- Flood Warning

The Yukon breakup front moves downstream to the delta flooding Emmonak, Alakanuk, and Nunam Iqua.

# Timeline

May 27

APRFC Breakup



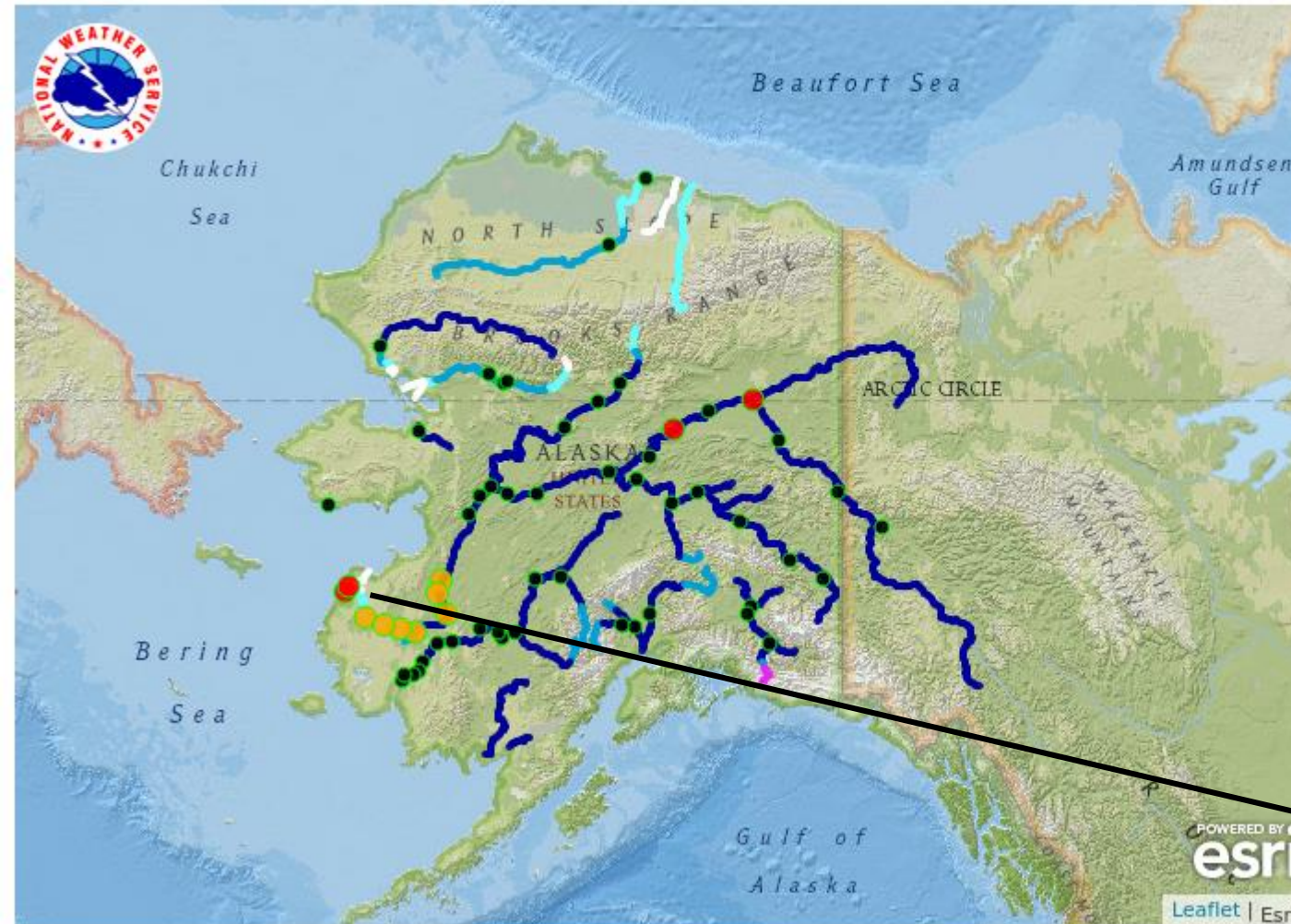
# Timeline of Events

May 27-29



NWS Alaska Region

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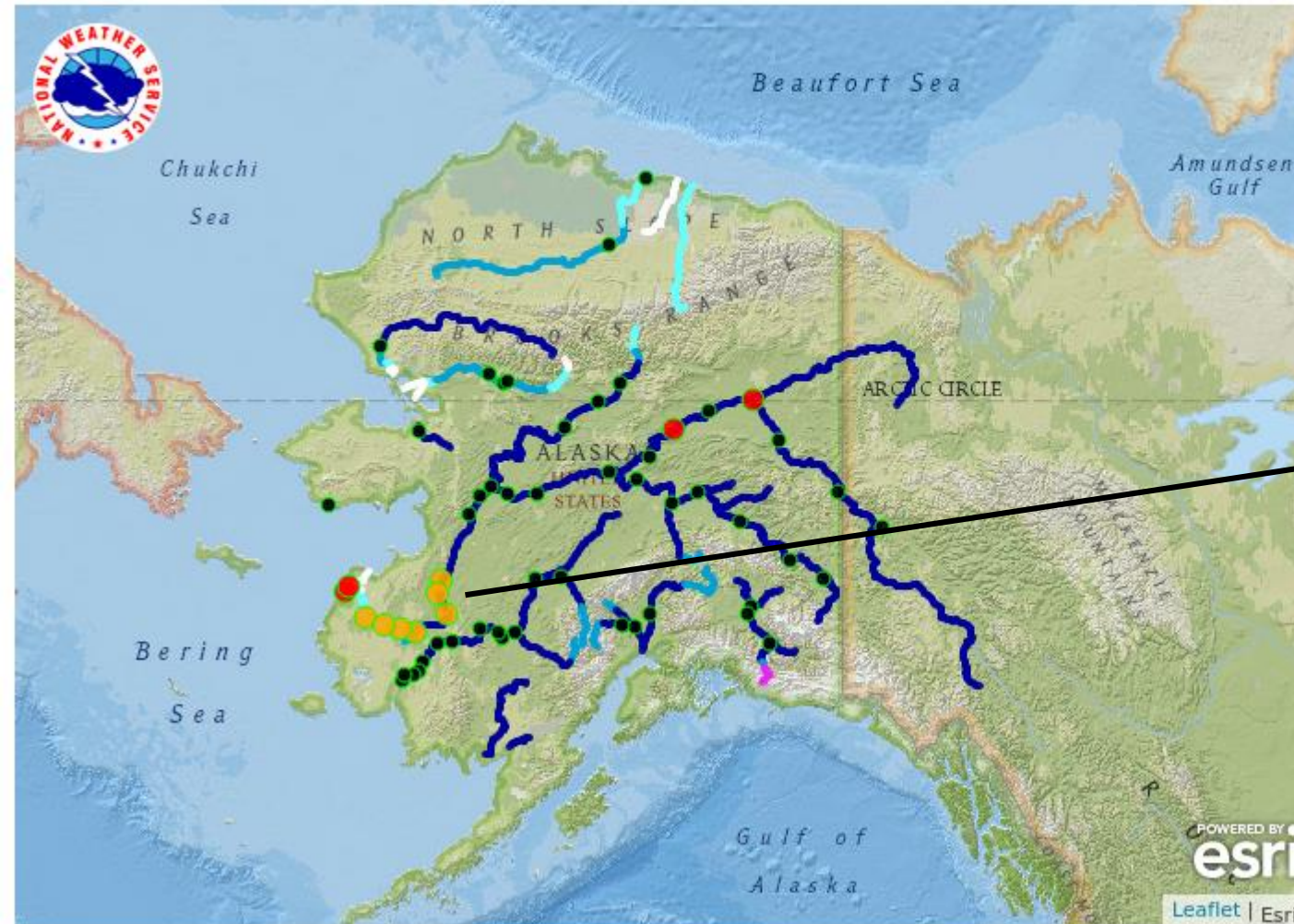
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May 27-29



NWS Alaska Region

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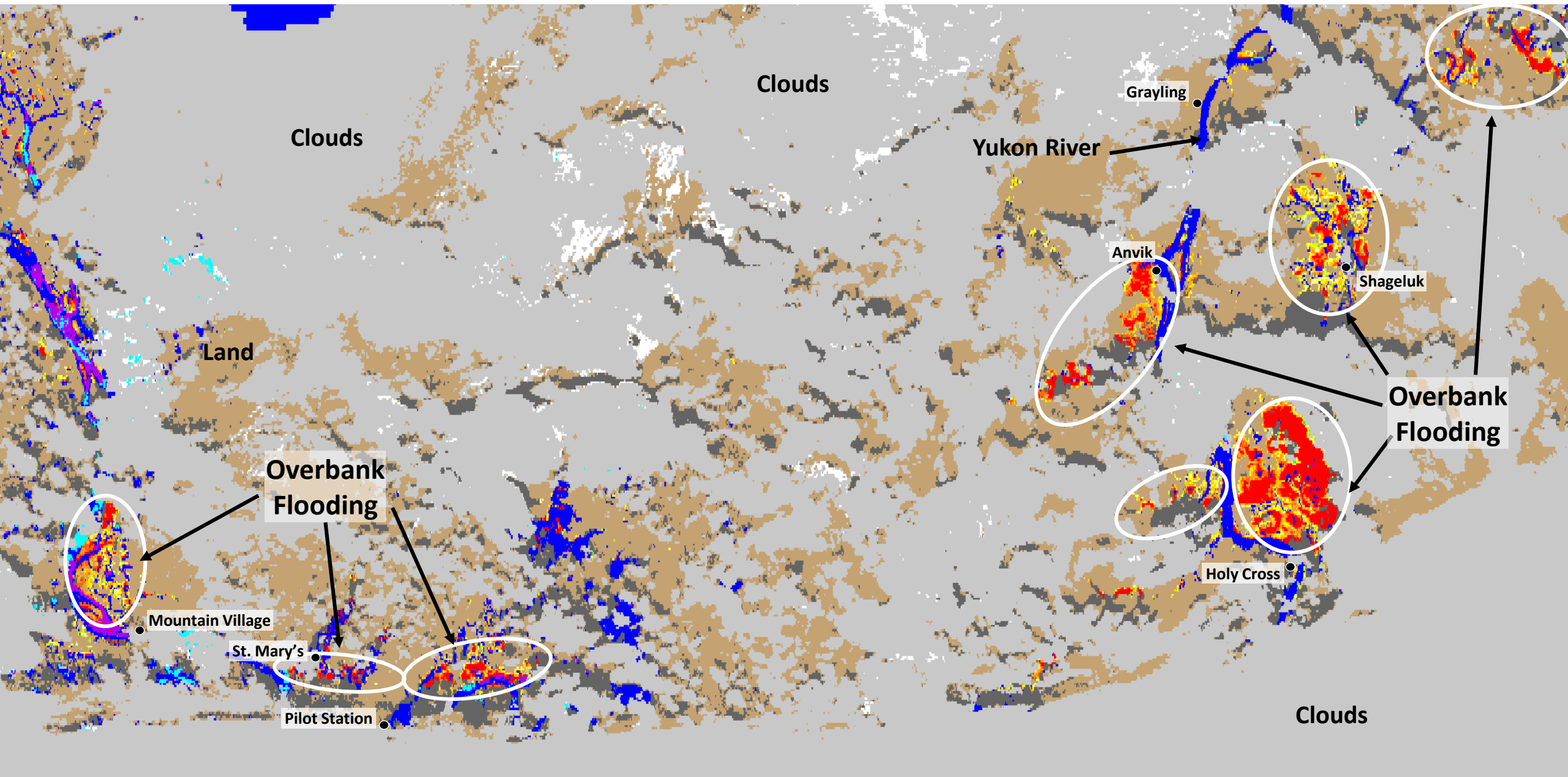
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Backwater from previous ice jams and upstream snow melt causes widespread overbank flooding of lowlands from Mountain Village up to Grayling



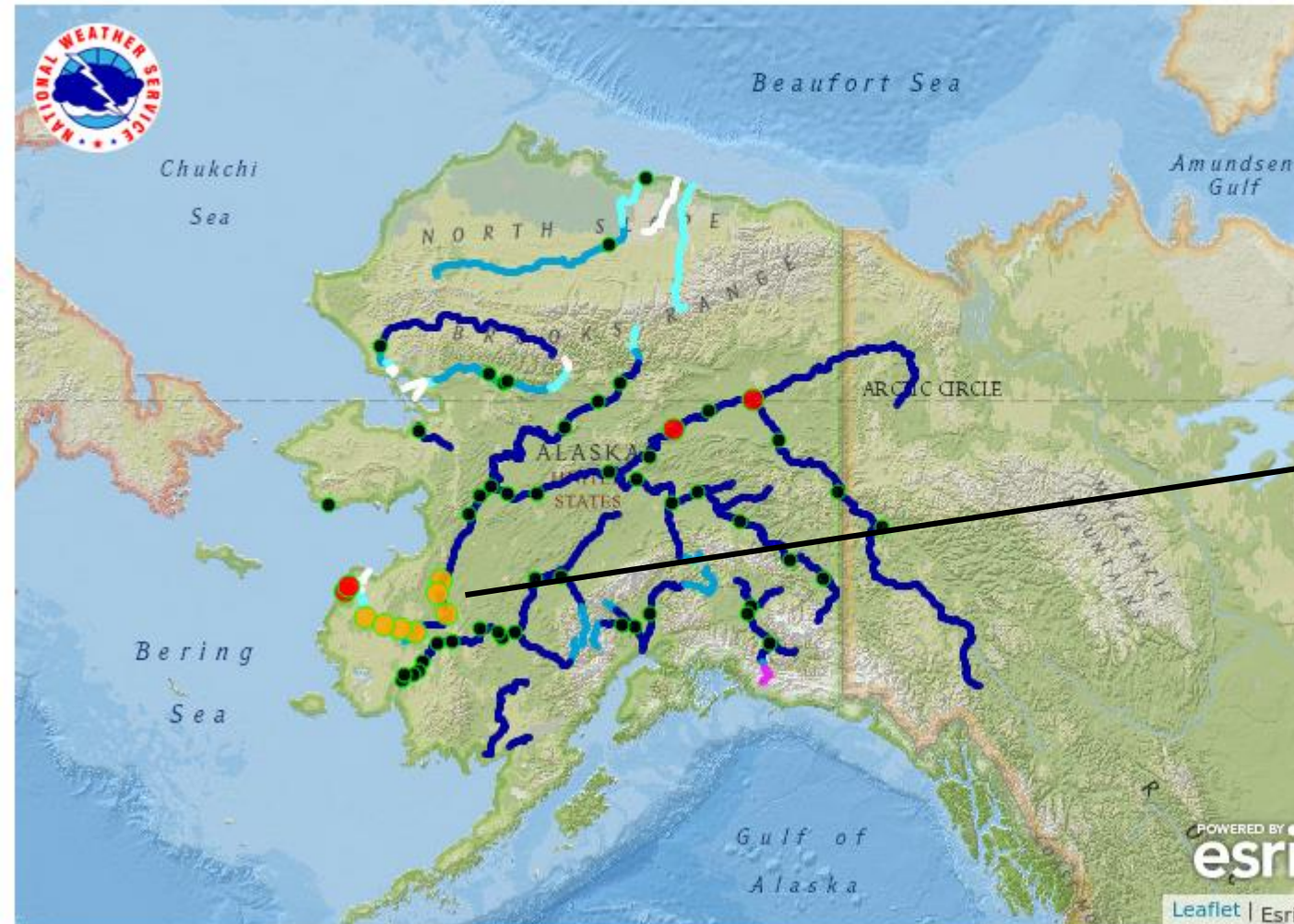
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May 27-29



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Backwater from previous ice jams and upstream snow melt causes widespread overbank flooding of lowlands from Mountain Village up to Grayling



# Timeline of Events

May 30



NWS Alaska Region

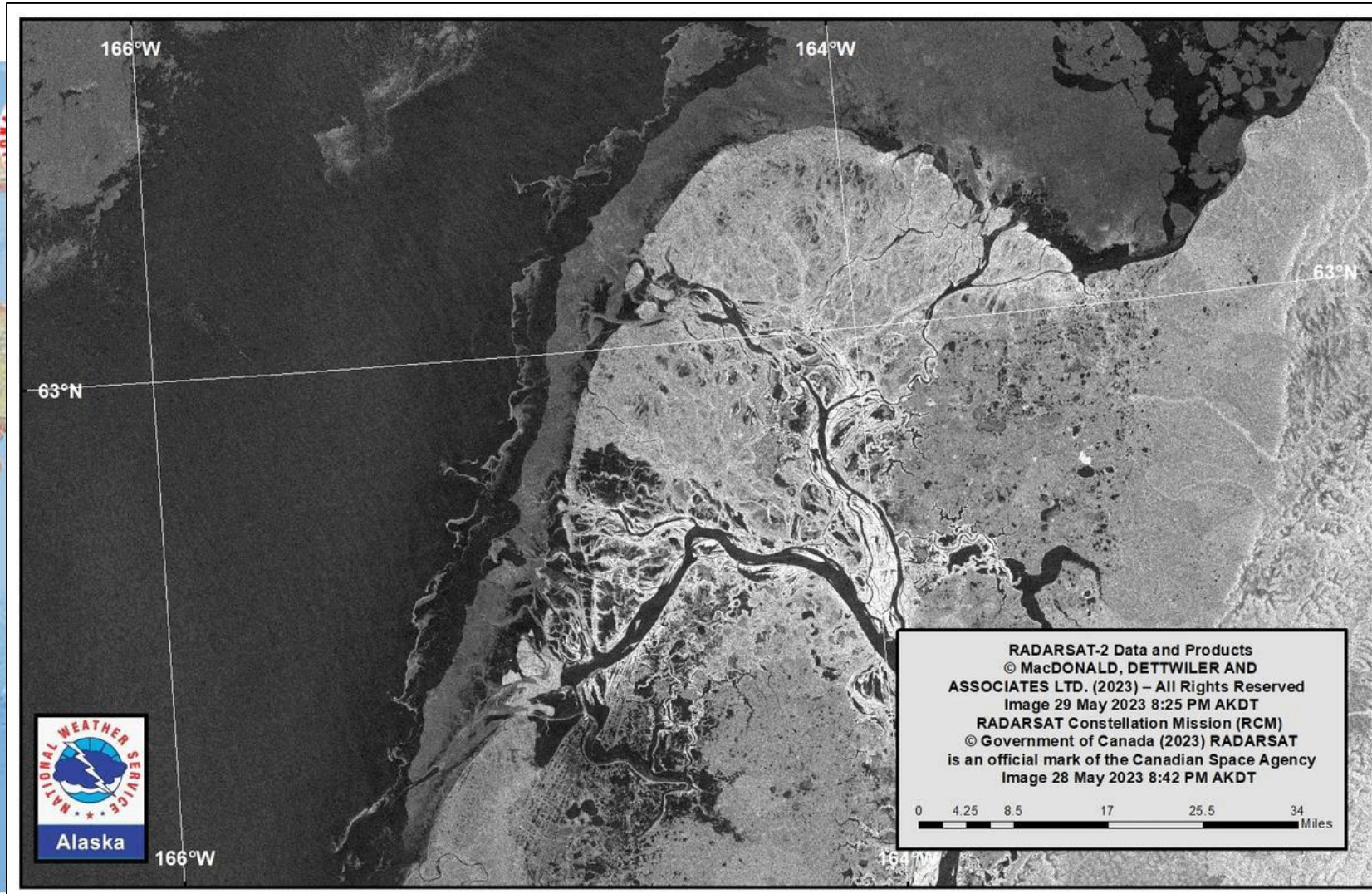


# Timeline of Events

May 30



NWS Alaska Region



View the  
rivers.

5



Yukon breakup front exits into the Bering Sea, residual high water persists through the end of May

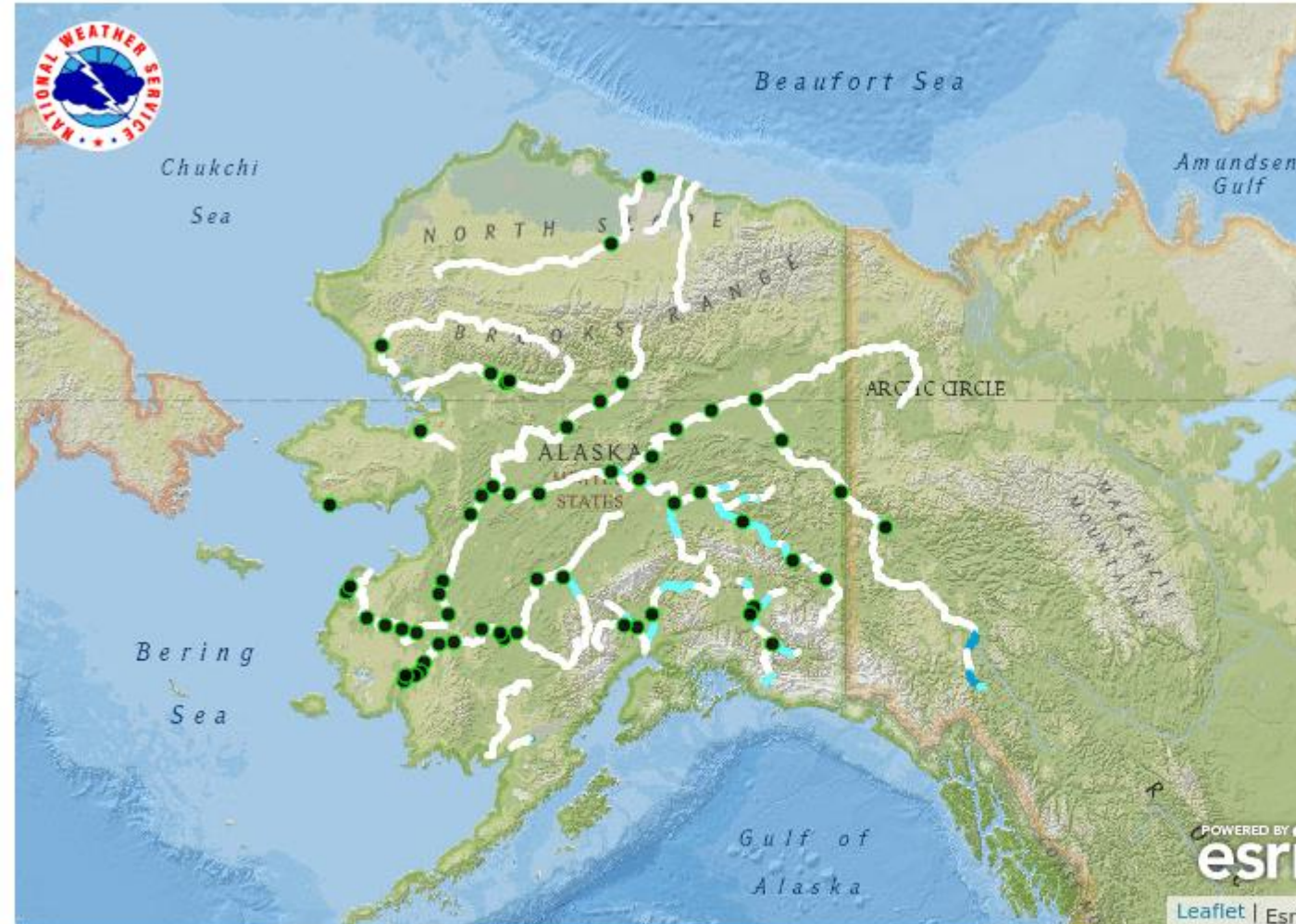
# Timeline of Events

## Breakup 2023 Animation



NWS Alaska Region

### APRFC Breakup Map - 3 May 2023 7:37:06 AM AKDT



This map allows you to view the breakup status of major rivers.

#### River Status

- Unknown
- Mostly Ice
- Some Open
- Mostly Open
- Open

#### Community Status

- No Warning
- Flood Advisory
- Flood Watch
- Flood Warning

\*\*\*\*\*  
\* EVEN THOUGH A PARTICULAR RIVER OR REACH MAY BE DESCRIBED AS MOSTLY \*  
\* OPEN OR OPEN... IT IS STILL POSSIBLE FOR RUNS OF ICE AND DEBRIS TO \*  
\*\*\*\*\*

