# Pilots Guide to River Ice

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## RIVER ICE PILOT REPORT REMARKS

**River Watch is a voluntary program asking pilots to report observed river conditions.**

- **Requesting observations that can be obtained without deviation from the normal route or flight level.**
- **Purpose of program is to assist the NWS in providing accurate forecasts, warnings, and navigation information.**
- **Standard method of reporting is to submit pilot report to FAA's Flight Service Stations by radio. In addition to reporting location and other standard pilot report elements, provide the river name and ice condition using standard remarks below. For example...**

***FAI UA/OV GAL270013/TM 2355/FL060/TP C207/RM YUKON RIV BISHOP ROCK APPARENT ICE JAM***

### STANDARD REMARKS

**PRE-BREAKUP**
UNBKN ICE
ARCHED ICE
LIFTED ICE
SHIFTED ICE
OPEN REACH
HARD *OR* ROTTEN ICE
SNOW *OR* WATER ON ICE
OPEN HOLES *OR* LEADS
FLOW IN SIDE CHANNEL
FLOW ON ICE

**ICE JAM CONDITIONS**
APPARENT ICE JAM
ICE JAM
VILLAGE AND/OR RUNWAY FLOODING
(PRECEEDED WITH LOCATION NAME)
WIDESPREAD FLOODING
LOW LYING FLOODING

**MOVING ICE**
BREAKUP (BU) FRONT
ICE RUN…
-MIXED-
-SHEETS-
-PANS-
-CHUNKS-
X MILE LONG ICE RUN
(DISTANCE = X)
ICE RUN DENSITY…
-HVY (75-100%)-
-MOD (25-75%)-
-LGT (1-25%)-

**POST-BREAKUP**
STRANDED ICE
OPEN CHANNEL
ICE OR DEBRIS RUN
-HVY (75-100%)-
-MOD (25-75%)-
-LGT (1-25%)-

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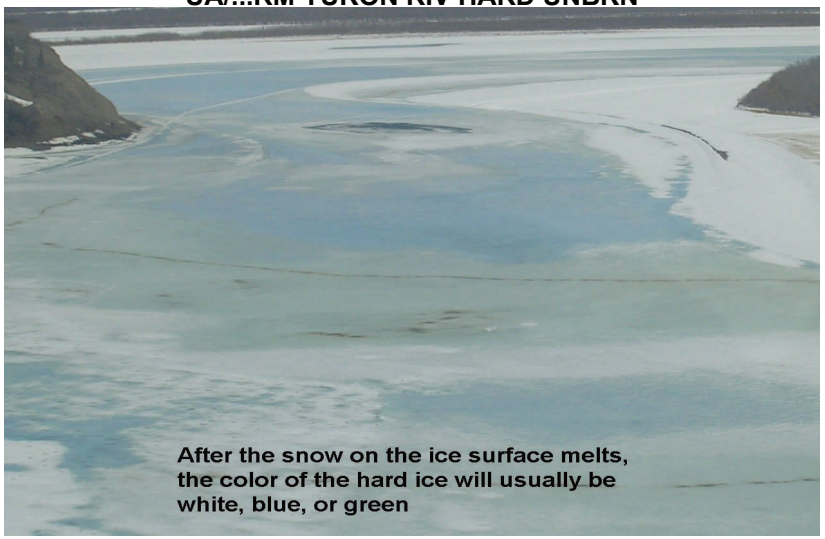
**For more on the River Watch Program, go to http://aprfc.arh.noaa.gov/rivwatch.php**

**Aerial photographs courtesy of APRFC staff, partner agencies, and participating commercial and private pilots**

## UA/...RM YUKON RIV HARD UNBKN




**Unbroken ice** - continuous ice surface that has few if any cracks
**Location format** - point or segment

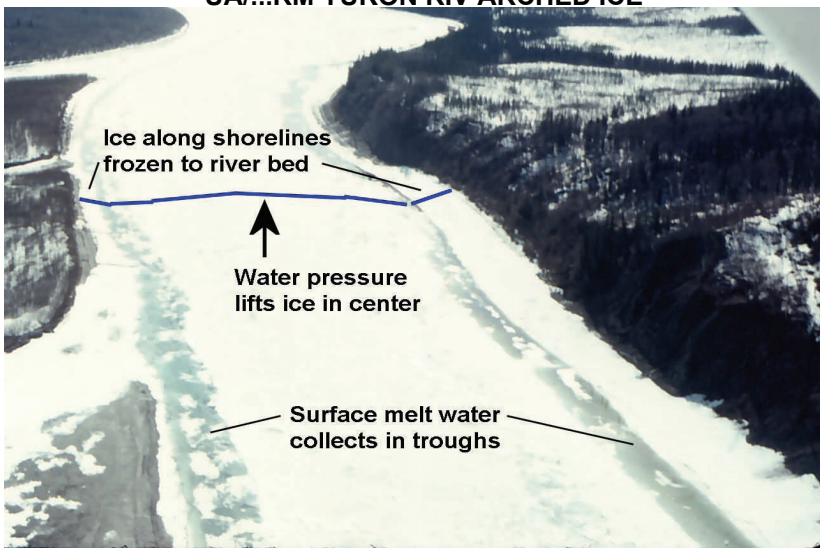
## UA/...RM YUKON RIV UNBKN MOSTLY ROTTEN ICE

**Rotten ice** - weak ice that appears black or brown
**Location format** - point or segment





## UA/...RM YUKON RIV ARCHED ICE




**Arched ice** - ice that is attached to the banks, which rises in the center of the channel due to increased flow beneath the ice causing melt water to collect in channels along banks
**Location format** - point or segment

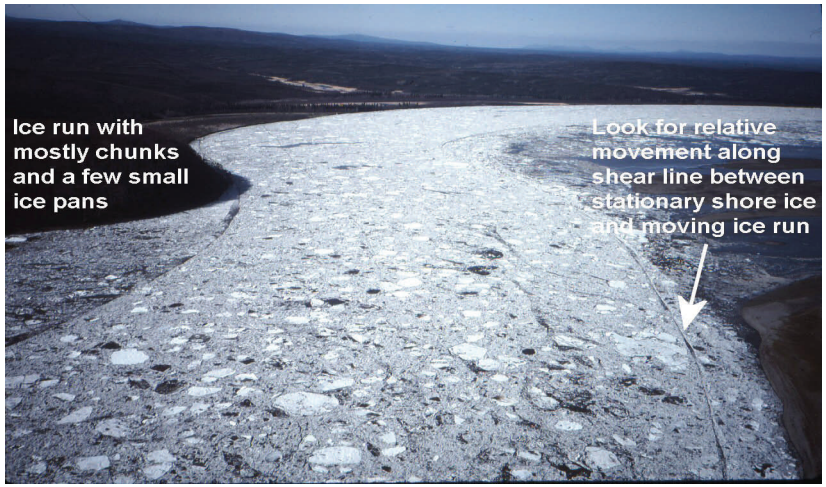
## UA/...RM YUKON RIV HARD LIFTED AND SHIFTED SHEETS

**Shifted ice** - large ice sheets that have moved short distances from their original locations as rising water levels create wider areas of open water into which the ice can move
**Location format** - point or segment

## UA/...RM YUKON RIV HVY MXD RUN

**Ice run** - a continuous length of moving ice
**Location format** - point or segment

## UA/...RM YUKON RIV HVY RUN MOSTLY CHUNKS

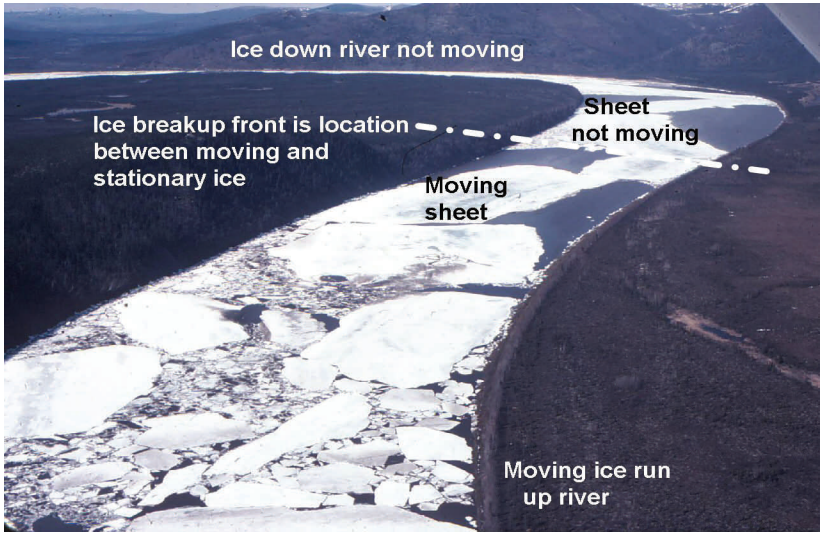



**Ice run** - a continuous length of moving ice
**Location format** - point or segment





## UA/...RM YUKON RIV BREAKUP FRONT



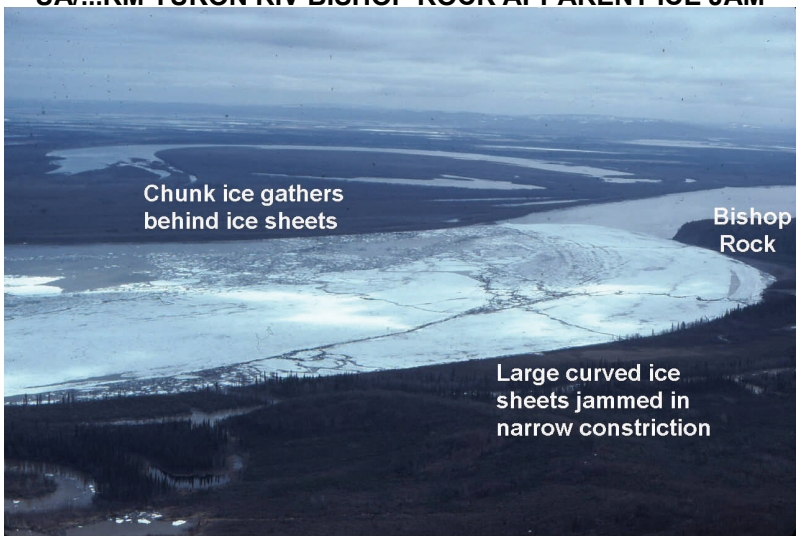

**Breakup front** - location along river where ice is moving upstream and not moving downstream
**Location format** - point only

- **Breakup date and time is when breakup front passes a location**
- **Flood threat due to an ice jam is greatest just after breakup front passes village**
- **Can be difficult to differentiate between breakup front and an ice jam**

**The ice breakup front can move down river like an inch-worm...the front may stall out temporarily to wait for the back end to catch up...this would not be called an ice jam**

**Look for a significant amount of the ice run packing in up river from the location where the breakup front stopped...this would be an indication of an ice jam**

### UA/...RM YUKON RIV BISHOP ROCK APPARENT ICE JAM




**Ice jam** - an ice run that has stopped moving due to any of a variety of reasons; characterized by a long reach of tightly packed chunk ice
**Location format** - point or segment

## ICE JAM THREAT LOCATIONS

- **Ice jams can occur at any location**
- **Historic ice jam problems at Bishop Rock on the Yukon River and below Aniak on the Kuskokwim River**
- **Threats also associated with ice conditions at and up to 10 miles down river from…**

**-Eagle, Circle, Fort Yukon, Galena, Koyukuk, Nulato, Russian Mission, Pilot Station, and delta villages on the Yukon**

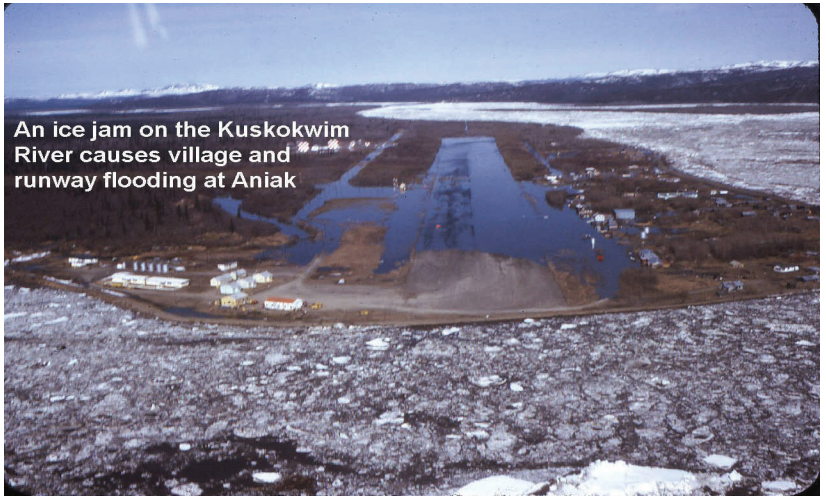
**-McGrath, Sleetmute, Red Devil, Crooked Creek, Akiak, Kwethluk, and Bethel on the Kuskokwim**

**-Kobuk on the Kobuk and Buckland on the Buckland**





### UA/...RM KUSKO RIV ANI VILLAGE AND RWY (10% USABLE) FLOODING

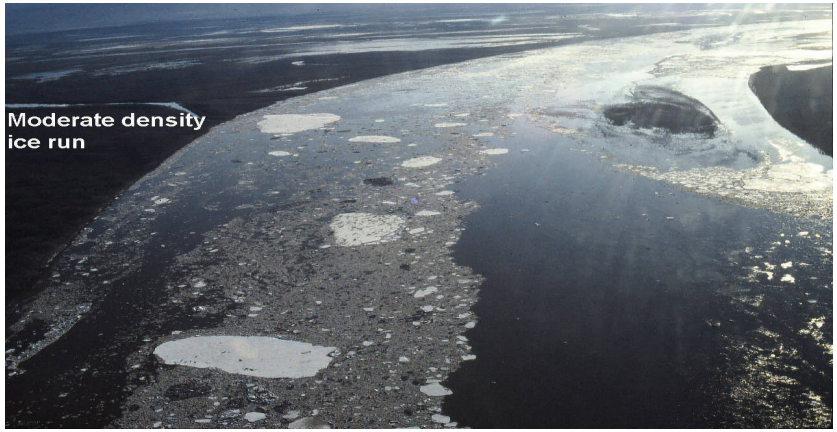



**Village flood** - water spreading into a village that covers roads or threatens buildings
**Location format** - point or segment

### UA/...RM YUKON RIV WIDESPREAD FLOODING

**Widespread flooding** - water that has gone over the banks and covered vast areas of land that are normally dry
**Location format** - point or segment

### UA/...RM YUKON RIV MOD ICE RUN




**Ice or debris run** - a length of river channel containing moving ice or debris (trees, brush, etc.)
**Location format** - point or segment

### UA/...RM KOYUKUK RIV OPEN HVY STRANDED ICE ON SHORE

**Stranded ice** - ice pushed onto the banks or into side channels that is left behind after the ice has cleared out of the main channel
**Location format** - point or segment



## Pilot Report Format

**Nearest VOR/Airport**

**Time**

**Altitude**

**Aircraft type and Equipment**

**Cloud type**

Cirrus, Cumulus, Stratus

**Cloud coverage**

Clear, Few, Scattered, Broken, Overcast

**Cloud Height**

**Visibility**

**Restrictions to Visibility**

Haze, Smoke, Dust, Other

**Precipitation Type**

Rain, Snow, Virga

**Precipitation Intensity**

Light, Moderate, Heavy

**Temperature (Celsius)**

**Wind Direction**

**Wind Speed**

**Turbulence**

Light, Moderate, Severe, Extreme

**Icing**

Trace, Light, Moderate, Severe

**Remarks**

**Provide remarks on river or lake ice conditions**