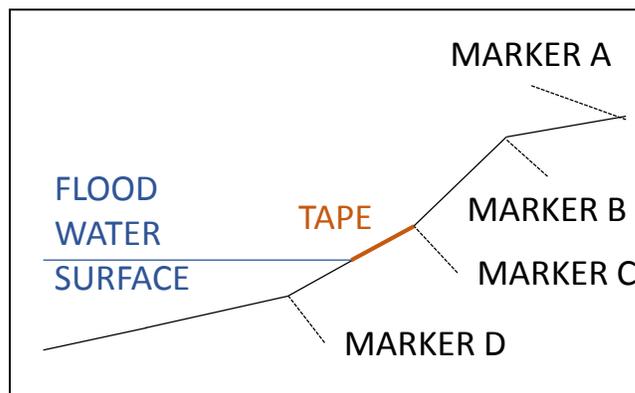


## SLOPE PROFILE GAGE

A slope profile gage consists of a marker or series of markers anchored in the bank above the level that can be damaged by ice movement. Markers are usually rods driven into the bank with a brass cap benchmark attached to the top of the rod. The profile of the bank is surveyed to establish ground elevations corresponding to distance measurements from the markers. The surveying data are used in the River Forecast Center office to calculate water stages from the slope distances measured by the observer.

### Slope Gage Observations

1. Hook your measure tape to the marker closest to the water surface.
2. The tape measure is pulled taught to the edge of the water surface while staying on line with the other markers. In order to repeat the same line during each measurement, identify a distinct feature that lines up with the tape when it is on the correct alignment.
3. Read the tape value at the edge of the water and record this on the NWS form. Note that the tape is in feet and 10ths of feet, not feet and inches. This allows the value to be entered on your sheet and into the computer as one number (e.g. 15.7 ft) that is more easily used in computations.



### Observation Form

Observer	Location	Profile Name	Marker measured from	Date and time of observation	Observation (ft)

### Example Observation Form

Observer	Location	Profile Name	Marker measured from	Date and time of observation	Observation (ft)
Jane Smith 907-xxx-xxxx	Anchorage	Profile #52	Marker C	11/5/2017, 10:50 AM	3.2 feet

Send to: [jacquelyn.overbeck@alaska.gov](mailto:jacquelyn.overbeck@alaska.gov)



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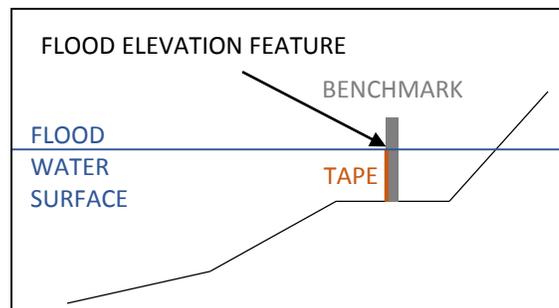
# BENCHMARK HIGH WATER MARK

A benchmark consists of a marker or identifiable feature (e.g. power pole, building, other) that is solidly placed in a zone of past flooding. The benchmark must be surveyed to determine the height of the ground level from which flood elevations will be measured. Once a survey elevation is collected, high water marks can be measured from the ground to the flood elevation on the benchmark. The resulting value is used to calculate the maximum elevation of flooding from a specific event.



### Benchmark High Water Mark Observation

1. Identify the flood elevation feature above your benchmark, such as a silt line.
2. Use measure tape to measure from ground level to feature, keep as level and straight as possible.
3. Report flood height in the observation form.
4. Send in observation form and any pictures or other information about the flooding.



### Observation Form

Observer	Location	Benchmark Name	Date and time of observation	Observation (ft)

### Example Observation Form

Observer and Contact Information	Location	Benchmark Name	Date and time of observation	Observation (ft)
<i>Jane Smith 907-xxx-xxxx</i>	<i>Anchorage</i>	<i>Downtown power pole #1</i>	<i>11/5/2017, 10:50 AM</i>	<i>5.4 ft above ground level</i>

Send to: [jacquelyn.overbeck@alaska.gov](mailto:jacquelyn.overbeck@alaska.gov)

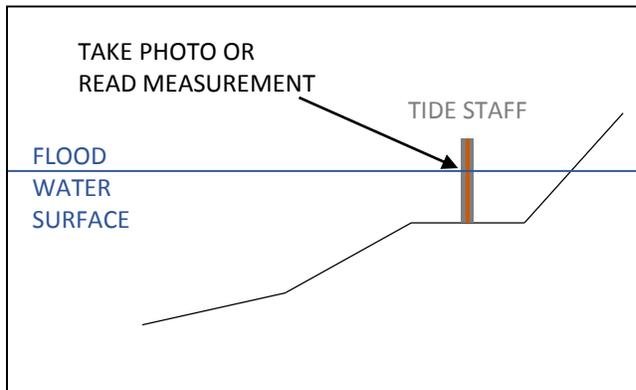


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# TIDE STAFF HIGH WATER MARK

A tide staff consists of a marker or identifiable feature (e.g. power pole, building, other) that is solidly placed in a zone of past flooding with a built in measure tape. The tide staff must be surveyed to determine the height of the ground level from which flood elevations will be measured. Once a survey elevation is collected, high water marks can be collected from the tide staff. The resulting value is used to calculate the maximum elevation of flooding from a specific event.



### Tide Staff Observation

1. Identify the flood elevation on the tide staff, such as a silt line, and read the measurement
2. Report flood height in the observation form.
3. Send in observation form and any pictures or other information about the flooding.

### Observation Form

Observer	Location	Tide Staff Name	Date and time of observation	Observation (ft)

### Example Observation Form

Observer and Contact Information	Location	Tide Staff Name	Date and time of observation	Observation (ft)
<i>Jane Smith 907-xxx-xxxx</i>	<i>Anchorage</i>	<i>Anchorage Beach Staff</i>	<i>11/5/2017, 10:50 AM</i>	<i>5.4 ft</i>

Send to: [jacquelyn.overbeck@alaska.gov](mailto:jacquelyn.overbeck@alaska.gov)



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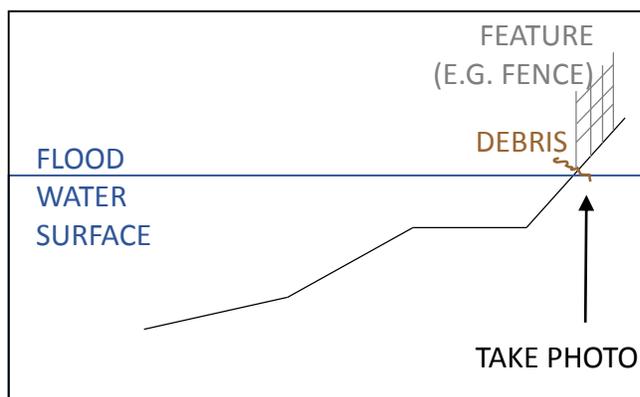


# FEATURE PHOTO OBSERVATION

Photos can be used to document water levels if they are taken relative to identifiable features, and if an elevation survey has been completed at that location. If there is a continuous elevation survey (e.g. a Digital Elevation Model), photos can be collected at multiple locations around town. Photos are used to identify locations on a map that are co-registered to elevations. Elevations are then extracted to compute maximum water levels from specific events. If the local user has a Global Positioning System (GPS), the flood extent can be collected using the GPS and elevations extracted at those locations.

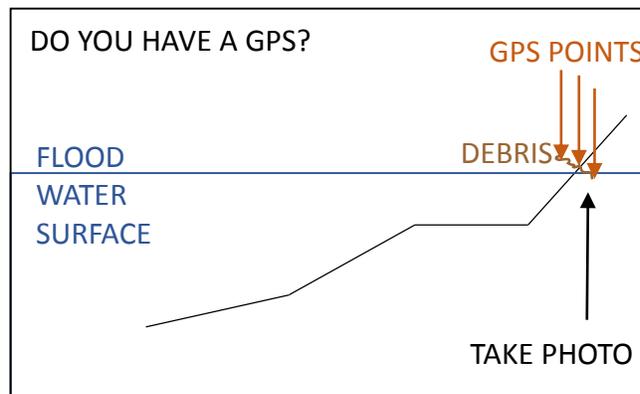
## Feature Photo Observation

1. Identify the flood feature (i.e. slush line, snow/ice melt line, debris/wrack line, or water line).
2. Take a photo of the flood feature that represents where water was at its maximum.
3. Send the photo, when it was collected, and what it represents to:  
[jacquelyn.overbeck@alaska.gov](mailto:jacquelyn.overbeck@alaska.gov)



## Do you have a GPS?

1. Identify the flood feature.
2. Collect GPS points directly on the flood feature.
3. Take photographs.
4. Send photos and GPS shapefile (i.e. .kml, .shx, or as stored on GPS) to:  
[jacquelyn.overbeck@alaska.gov](mailto:jacquelyn.overbeck@alaska.gov)



## Observation Form

Observer	Location	Date and time of photograph



Slush Line



Snow/Ice Melt Line



Debris/Wrack Line



Water Line



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