

STN HIGH WATER MARK FORM

(Section 1) Site Visit Summary

STN SITE ID: (Auto generated by STN) Check if sensor(s) are not appropriate here

LATITUDE: SITE DESCRIPTION: (Address, intersection, etc.)

LONGITUDE:

HORIZONTAL DATUM: ? HORIZONTAL COLLECTION METHOD:

USGS SITE ID: STATE: COUNTY: WATERBODY:

Site Visit Tasks

Check here if flagging HWM(s) only Objective Points Installed Levels Ran Site Sketch Pictures Taken

(Section 2) Datum (skip if flagging only)

Base Reference Mark: Type: Description:

NGS PID: NGS DES: Elevation ft

Vertical Datum: Vertical Collection Method: Survey Uncertainty: (+/-) ft cm

Quality: Date Established: Unquantified

(Section 3) HIGH WATER MARKS

HWM Type	Marker	Label	Coastal	Riverine	Uncertainty (+/-)	ft
Quality:	Height abv land:	ft Location				
Tranquil/Still HWM: YES	NO	Description:				
Elevation:	ft					

HWM Type	Marker	Label	Coastal	Riverine	Uncertainty (+/-)	ft
Quality:	Height abv land:	ft Location				
Tranquil/Still HWM: YES	NO	Description:				
Elevation:	ft					

(Section 4) Guidance from HWM Field Manual (<https://pubs.er.usgs.gov/publication/ofr20171105>)

Finding HWMs

- Time is of the essence, best to flag first and survey later
- Avoid swift water areas, produces poor marks
- Go for low-velocity areas, produces better marks
- Avoid small bushes and trees that may bend in velocity and stand back up after the flood (Fig. 6)
- Go for fences or window screens
- Building interiors act as stilling wells, verify inside and outside levels equalized
- More is better than fewer, especially if marks are poor or the slope is steep



Figure 12. A hydrographer surveying the landward edge of a debris line. Photograph by Christopher Wilkowske.

Location of HWMs

- Label in a systematic fashion, left (L) and right (R) bank of a stream. Upstream (U) or downstream (D) of a "permanent" landmark. UL1, UL2 (upstream of bridge, left bank)
- Flag more than you need
- Be aware of pile up and drawdown. Use top of seed lines and ground at landward edge of drift lines

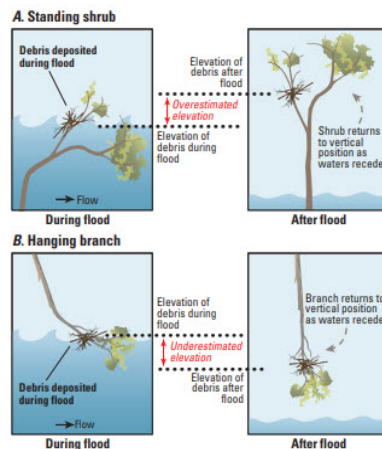


Figure 6. Diagrams illustrating how debris is deposited. A, on bendable shrubs; or B, on hanging branches during a flood can result in misleading high-water marks when the shrub or branch returns to its original position after floodwaters recede. Tree illustrations modified from Kraeer and others (2015).

Flagging and Documenting HWMs

- Write label on the marker used (UL1 written on wooden stake)
- Use additional flagging to help identify general proximity of the mark to assist recovery efforts
- Obtain land owners permission for any markers
- If mark will be difficult to survey transfer it to an accessible location (Fig. 10)
- After HWMs have been surveyed, nails and stakes should be removed along with flagging.

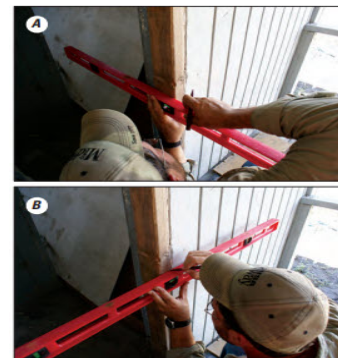


Figure 10. Field personnel using a carpenter's level to transfer high-water marks. A, from inside a structure; and B, to the outside to facilitate easier surveying of the mark.