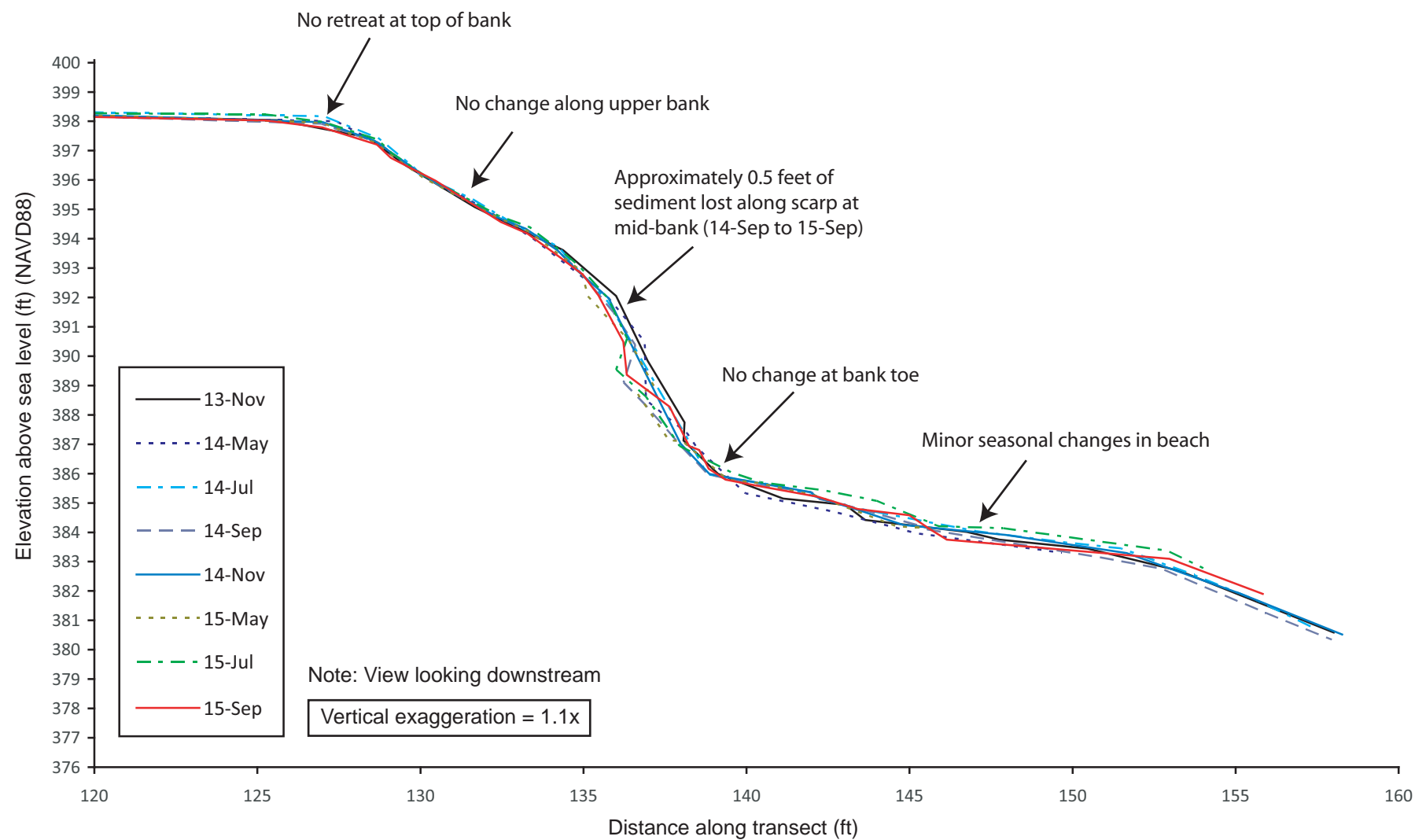


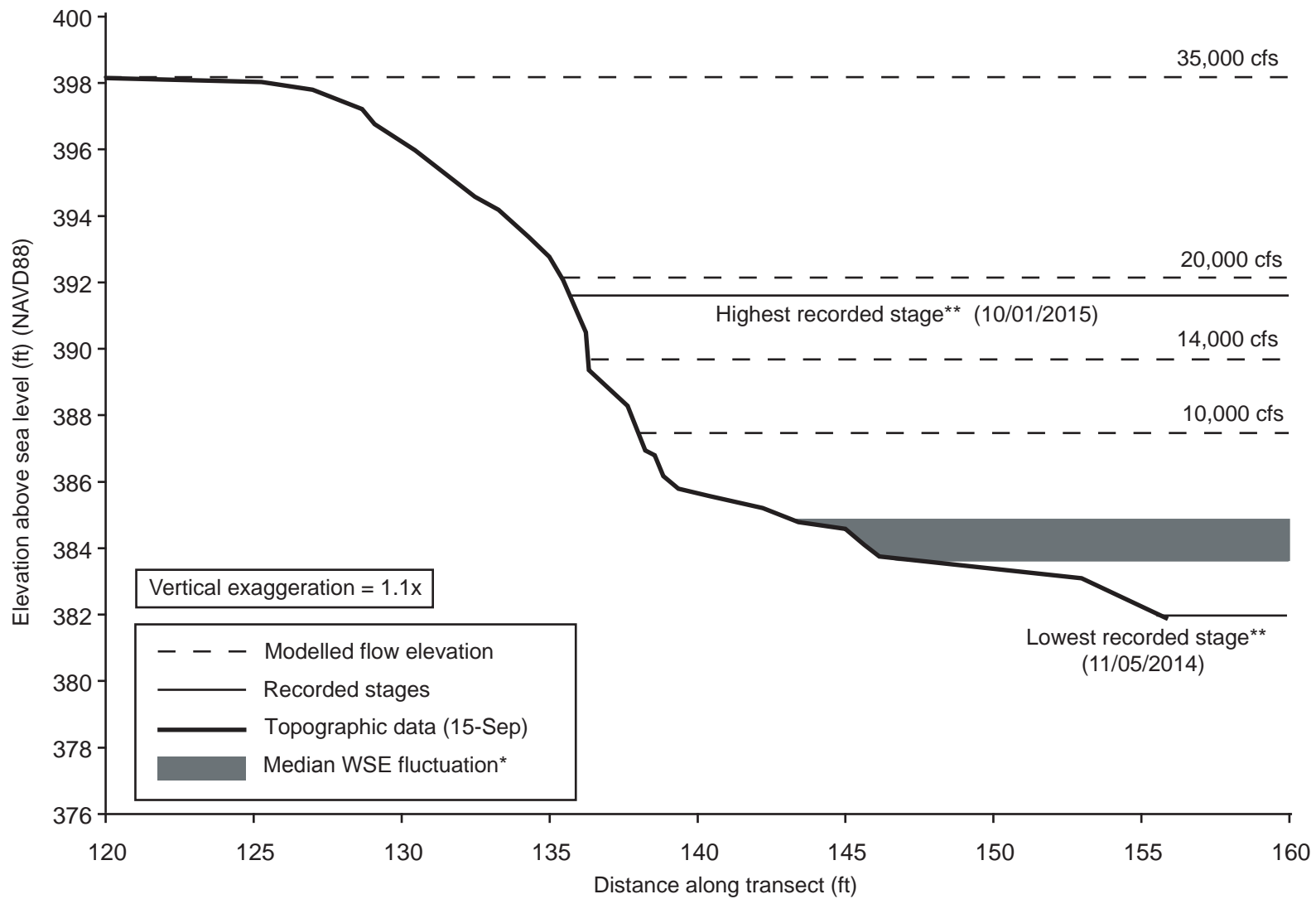
Site map for 02-W02 (Bedell Bridge Site).



Erosion monitoring transect for 02-W02 (Bedell Bridge Site).

Time period	Observed changes
Summary	No changes at top or toe of bank. Approximately 0.5 feet of sediment has been lost from 14-Sep to 15-Sep in mid-bank scarp further exposing roots of box elder tree growing on slope. Minor seasonal changes to beach.
Initial survey (Nov-13)	Noted bare soil / sediment in scarp around roots of box elder tree.
November 2013 to May 2014	No observed changes.
May to July 2014	No observed changes.
July to September 2014	No observed changes.
September to November 2014	Minor soil / sediment loss from mid-bank.
November 2014 to May 2015	Minor soil / sediment loss from mid-bank.
May to July 2015	Unconsolidated silt and fine sand deposition on beach.
July to September 2015	Minor soil / sediment loss from mid-bank.

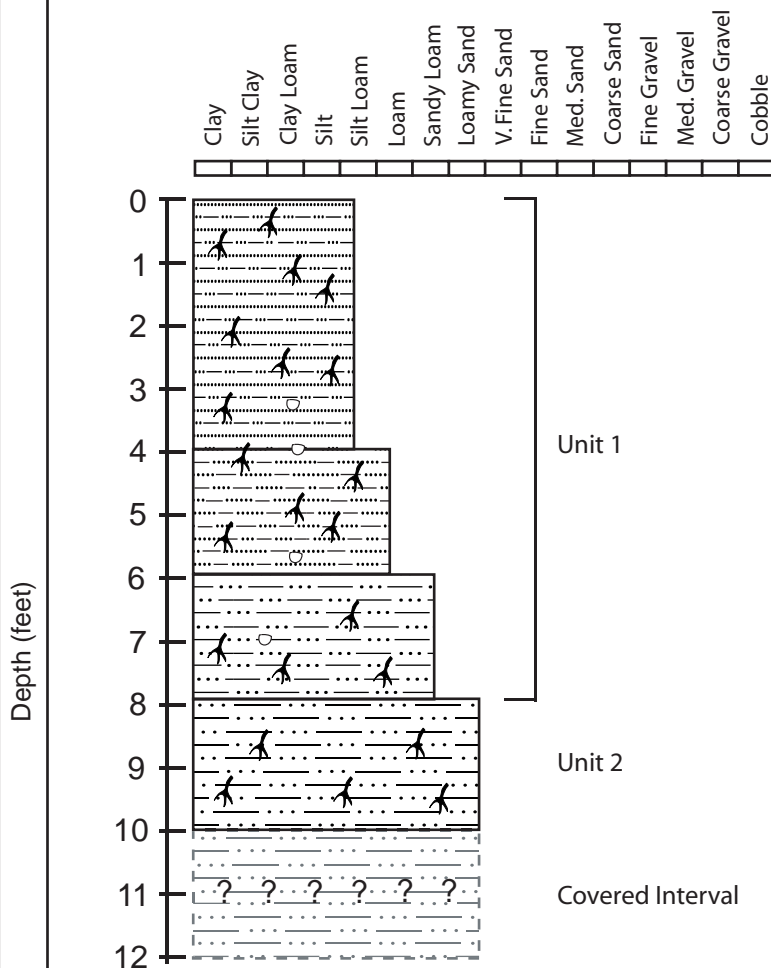
Narrative of observed changes at 02-W02 (Bedell Bridge Site).



*Note: Median WSE fluctuation at site equals 1.22 feet under no-spill conditions

**Note: Flow stage recorded at site from 06/2014 - 11/2014 and 07/2015 - 11/2015

Selected river stages at Site 02-W02 (Bedell Bridge Site).



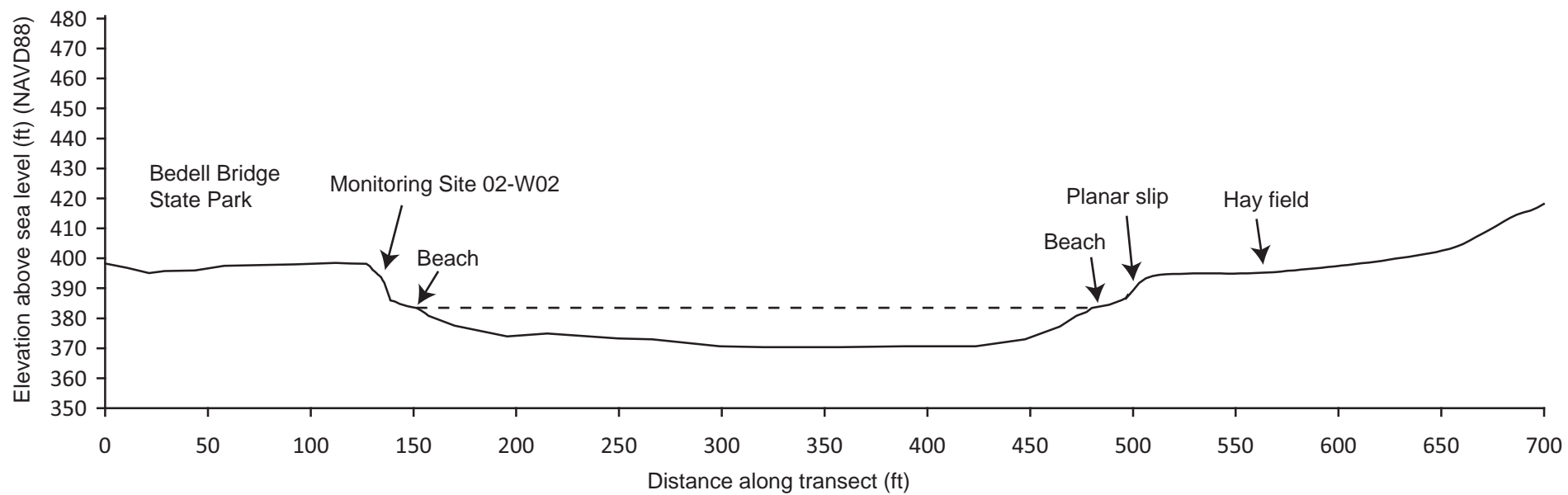
Top elevation = 397.8 feet above sea level (NAVD88)

Unit 1: [8 ft thick] (2.5Y 4/3 dry 2.5Y 3/2 wet) medium to large blocky, medium structural strength, fining upward loamy sand to silt loam with fine sand, no buried soils evident, voids at 3.3ft, 3.5ft, 4ft, 5.8ft and 7ft below surface. Roots present. Diffuse gradational contact with Unit 2.

Unit 2: [2 ft thick] (5Y 4/2 dry, 5Y3/2 wet) medium, weak platy, loamy sand. Fines upward into Unit 1. Roots present.

Covered interval: [2 ft thick] Assumed loamy sand, continuation of Unit 2.

Stratigraphic column of 02-W02 (Bedell Bridge Site).



Note: View looking downstream

Vertical exaggeration = 1.4x

- - - Water surface at time of survey
— Topographic data (14-Jul)

Full river transect for 02-W02 (Bedell Bridge Site).

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-W02	1	44.0452333	-72.0733900	141	Portrait view of mid and upper bank from end of transect
02-W02	2	44.0451033	-72.0734950	123	Toe of bank at transect
02-W02	3	44.0452233	-72.0734500	225	DS view from end of transect
02-W02	4	44.0452222	-72.0734500	63	US view from end of transect
02-W02	5	44.0452000	-72.0734000	349	View vertically down along transect from top of bank

Ground photograph locations at 02-W02 (Bedell Bridge Site).



Photo 1: 2013-11-06 16:09



Photo 1: 2014-05-21 13:57



Photo 1: 2014-09-24 13:01



Photo 1: 2014-11-14 11:56



Photo 1: 2015-05-06 13:41



Photo 1: 2015-07-10 11:59



Photo 1: 2015-09-15 11:51



Photo 1: 2015-11-18 11:54



Photo 2: 2014-05-21 13:57



Photo 2: 2014-08-08 11:20



Photo 2: 2014-11-14 12:17



Photo 2: 2015-05-06 13:43



Photo 2: 2015-07-10 11:58



Photo 2: 2015-09-15 11:52



Photo 2: 2015-11-18 11:50



Photo 3: 2013-11-06 16:12



Photo 3: 2014-08-08 11:15



Photo 3: 2014-05-21 13:56



Photo 3: 2014-11-14 11:55



Photo 3: 2015-05-06 13:44



Photo 3: 2015-09-15 11:53



Photo 3: 2015-07-10 12:00



Photo 3: 2015-11-18 11:51



Photo 4: 2014-08-08 11:18



Photo 4: 2014-11-14 12:15



Photo 4: 2015-05-06 13:45



Photo 4: 2015-09-15 11:54



Photo 4: 2015-07-10 11:59



Photo 4: 2015-11-18 11:53



Photo 5: 2013-11-06 16:29



Photo 5: 2014-08-08 10:16



Photo 5: 2014-11-14 11:51



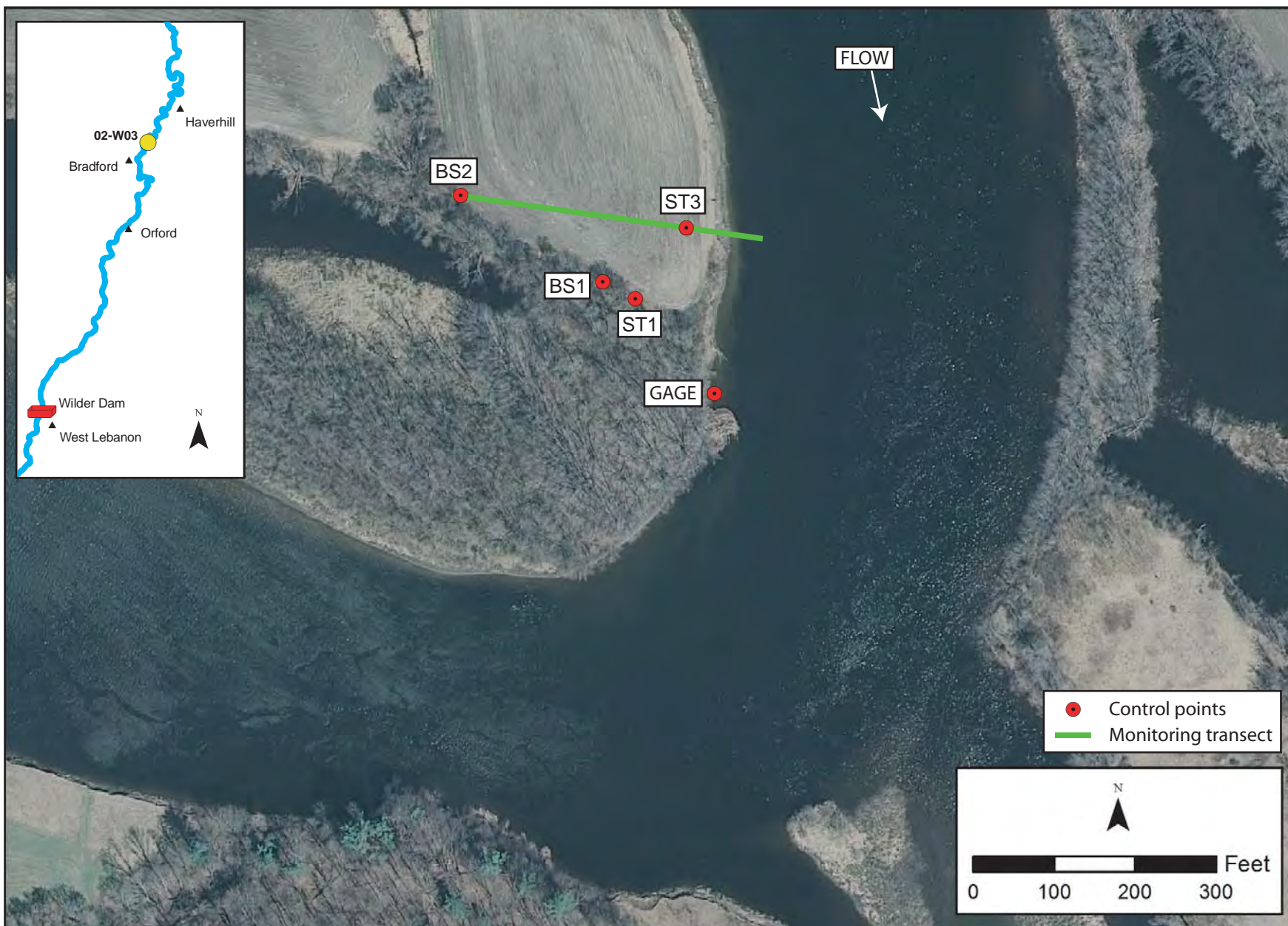
Photo 5: 2015-05-06 13:50



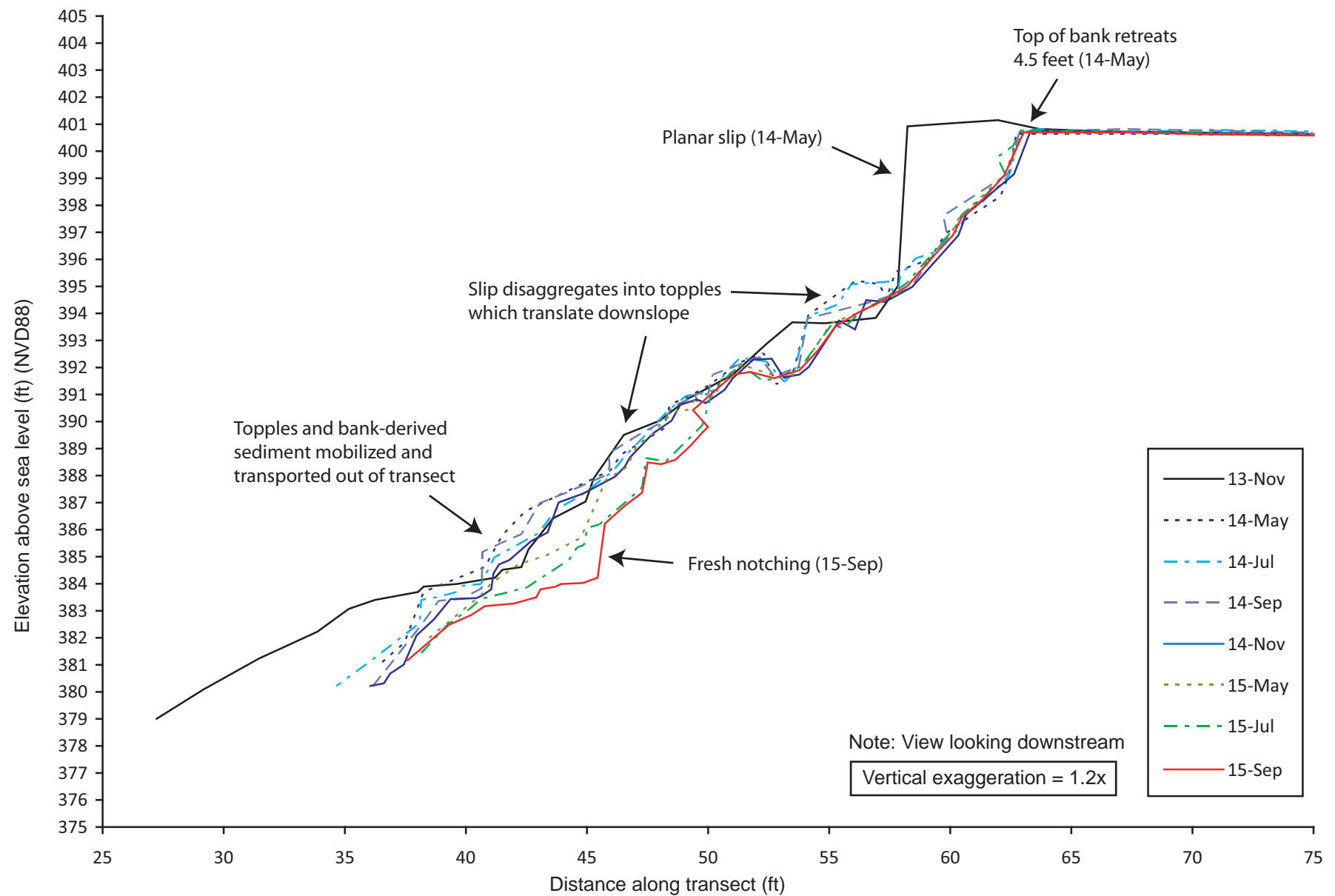
Photo 5: 2015-07-10 12:16



Photo 5: 2015-09-15 11:56

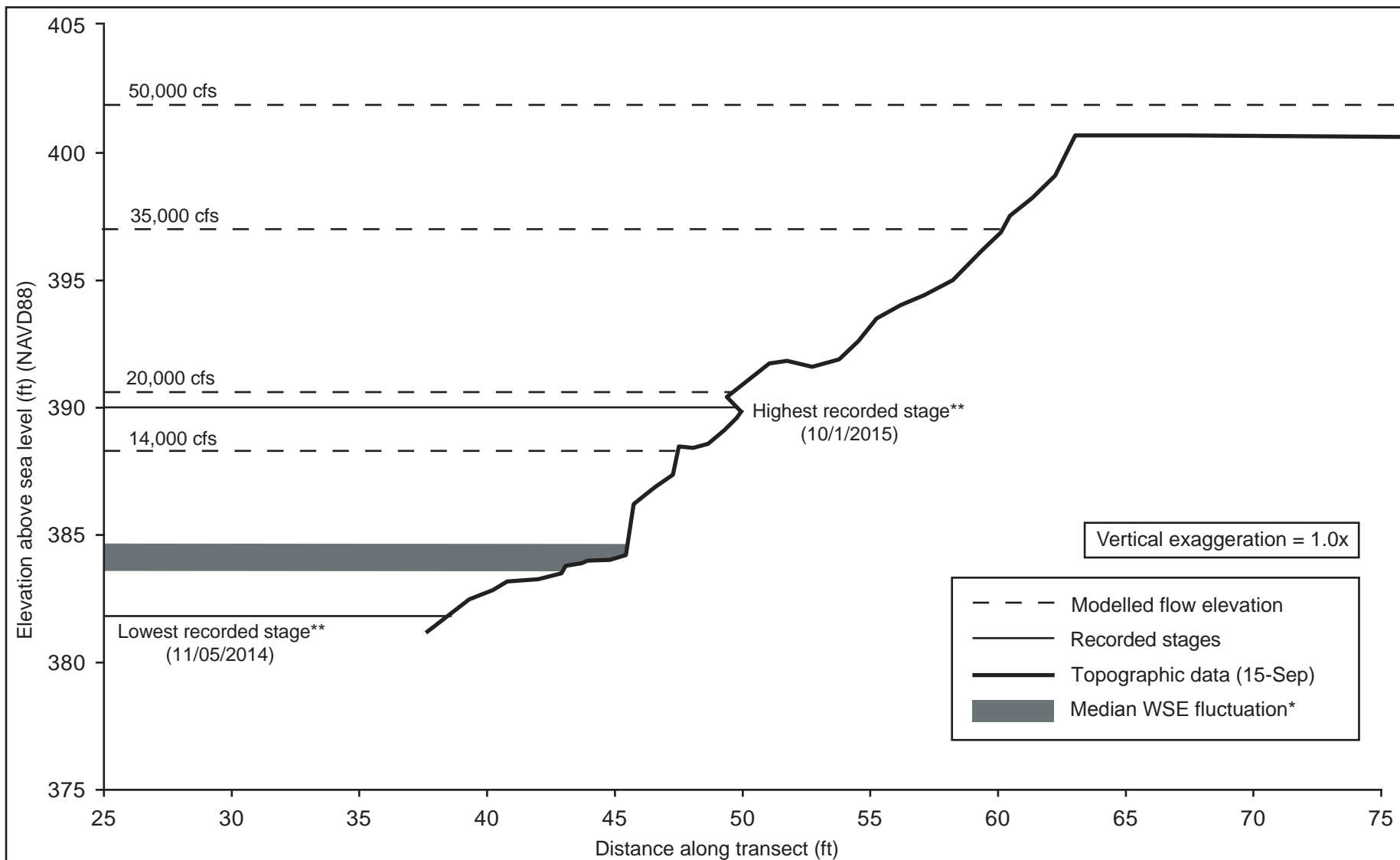


Site map for 02-W03 (Bellavance Site).



Time period	Observed changes
Summary	Planar slip of upper bank resulted in 4.5 ft of retreat at top of bank. Slip block disaggregated into smaller topple blocks which have migrated downslope as material has been removed from the bank toe. This material has largely been removed through notching during the summer field season and by tractive forces at higher flows.
Initial survey (Nov-13)	Noted presence of near vertical scarp along upper bank and topple blocks on mid-bank and lower bank surface.
November 2013 to May 2014	Planar slip of near vertical upper bank; top of bank retreats 4.5 ft. Sumac buffer is gone. New tension crack on floodplain surface at transect. Slip material has disaggregated into large topple blocks on the mid-bank slope. Colluvial material deposited as silt flow at toe of bank.
May to July 2014	No change in upper or mid-bank. Mobilization of colluvial material at bank toe has removed 1 to 1.5 ft of slumped material.
July to September 2014	Minor disaggregation of topple blocks in mid-bank.
September to November 2014	Series of small notches developed at lower bank. Topple blocks rotated and tension cracks developed in colluvial material at mid-bank.
November 2014 to May 2015	Mobilization of colluvial material at bank toe has removed 1.5 ft of slumped material. Rotation of large topple block at mid-bank as block moves downslope. Tension cracks developed in colluvial material at mid-bank.
May to July 2015	1 to 2 ft of colluvial material removed from lower bank below elevation 391 ft. Development of small notches and minor grain flow on lower bank.
July to September 2015	Fresh notching at toe of bank, removal of 1.5 ft of material. Continued downslope movement of disaggregated topple blocks at mid-bank.

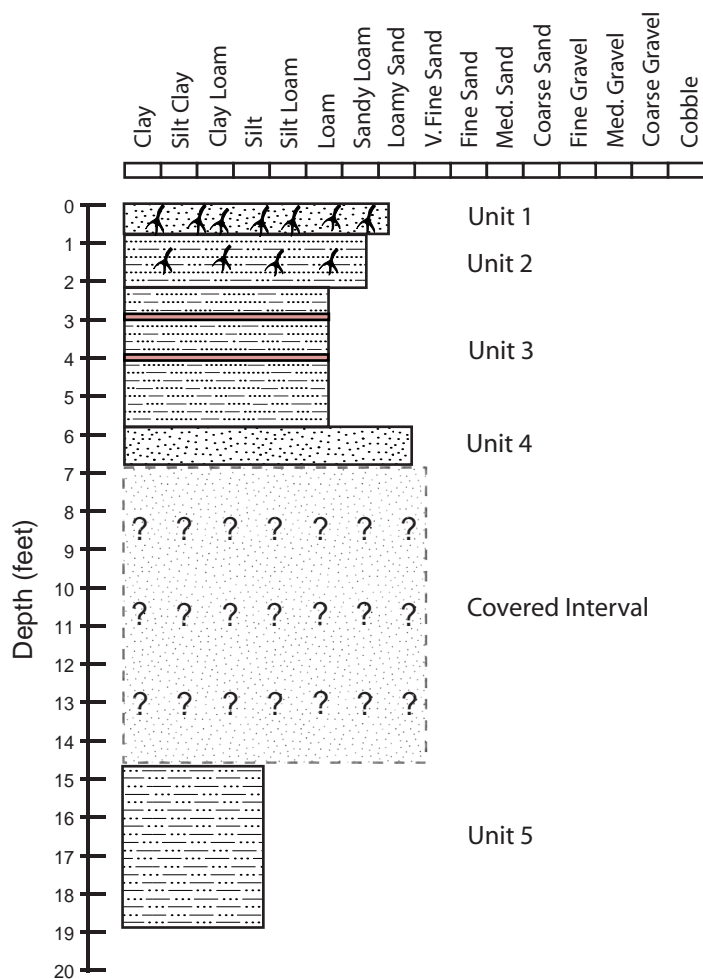
Narrative of observed changes at 02-W03 (Bellavance Site).



*Note: Median WSE fluctuation at site equals 1.05 feet under no-spill conditions

**Note: Flow stage recorded at site from 06/2014 - 11/2014 and 07/2015 - 11/2015

Selected river stages at 02-W03 (Bellavance Site).



Top elevation = 399.6 feet above sea level (NAVD88)

Unit 1: [0.8 ft thick] (10YR 4/3), coarse weak granular, well-sorted fine slightly silty sand with abundant fine vertical roots and coarse horizontal roots, no stratification; sharp contact with Unit 2.

Unit 2: [1.4 ft thick] (10YR 3/3 moist), coarse moderate granular, silty sand with common roots, mottled color-darker brown and buff tan brown, gradational contact with Unit 3.

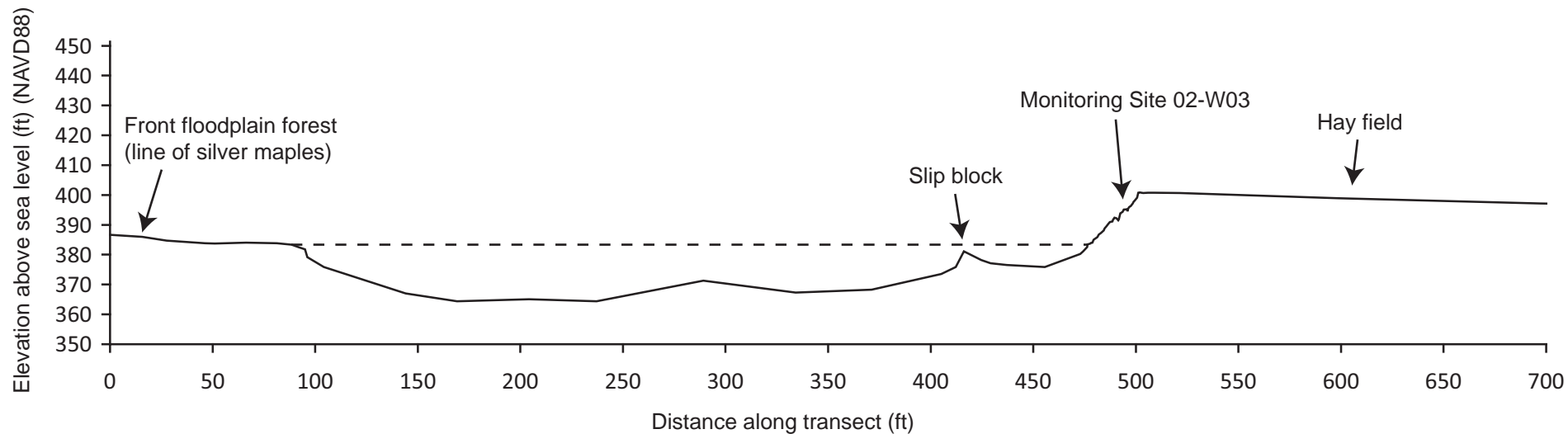
Unit 3: [3.7 ft thick] (10YR 3/4), coarse weak granular, finer silty sand with common roots, mottled slightly darker brown, bioturbated in upper 0.25 ft, A Horizons at 2.9 and 4 ft (shown in red), gradational contact with Unit 4.

Unit 4: [1.0 ft thick] (10YR 3/3), coarse weak granular, slightly silty sand, slightly coarser than Unit 1.

Covered Interval: [7.8 ft thick] Possibly sandier layer, thinly layered.

Unit 5: [4.2 ft thick minimum] (2.5Y 6/1-mottled grey, 10YR 3/4-darker brown), shelf-forming competent layer at toe of bank, medium moderate blocky, very silty sand with minor clay component, occasional red mottling (10R 3/6) due to oxidation and wet/dry cycles.

Stratigraphic column of 02-W03 (Bellavance Site).



Note: View looking downstream

Vertical exaggeration = 1.4x

- - - Water surface at time of survey
— Topographic data (14-Jul)

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-W03	1	44.0149883	-72.0954617	21	US portrait view of bank transect from top of bank
02-W03	2	44.0150633	-72.0955383	30	US landscape view of rebar and eroding bank from top of bank
02-W03	3	44.0151333	-72.0955050	159	DS view from middle of transect
02-W03	4	44.0151517	-72.0955600	97	Portrait view vertically down at transect from top of bank
02-W03	5	44.0151417	-72.0955150	273	Portrait view of top of bank and upper scarp from mid bank
02-W03	6	44.0151183	-72.0955183	99	Portrait view vertically down at lower bank from middle of transect
02-W03	7	44.0151333	-72.0954933	92	Portrait view vertically down at toe of bank from lower portion of transect
02-W03	8	44.0150550	-72.0954650	355	US view from water's edge at transect
02-W03	9	44.0151783	-72.0954250	156	DS portrait view from top of bank

Ground photograph locations at 02-W03 (Bellavance Site).



Photo 1: 2013-11-13 13:39



Photo 1: 2014-05-21 11:52



Photo 1: 2014-08-08 12:16



Photo 1: 2014-11-14 14:28



Photo 1: 2015-05-06 14:13



Photo 1: 2015-07-10 14:02



Photo 1: 2015-09-15 13:03



Photo 1: 2015-11-18 10:33



Photo 2: 2014-05-21 12:18



Photo 2: 2014-09-24 15:15



Photo 2: 2015-05-06 14:15



Photo 2: 2015-07-10 14:03



Photo 2: 2015-09-15 13:04



Photo 2: 2015-11-18 10:34



Photo 3: 2013-11-13 13:28



Photo 3: 2014-09-24 15:18



Photo 3: 2014-05-21 11:57



Photo 3: 2014-11-14 14:32



Photo 3: 2015-05-06 14:23



Photo 3: 2015-07-10 14:07



Photo 3: 2015-09-15 13:07



Photo 3: 2015-11-18 10:40



Photo 4: 2013-11-13 13:11



Photo 4: 2014-05-21 11:50



Photo 4: 2014-08-08 12:13



Photo 4: 2014-11-14 14:26



Photo 4: 2015-05-06 14:17



Photo 4: 2015-07-10 14:04



Photo 4: 2015-09-15 13:05



Photo 4: 2015-11-18 10:35



Photo 5: 2013-11-13 13:23



Photo 5: 2014-05-21 11:56



Photo 5: 2014-08-08 12:21



Photo 5: 2014-11-14 14:31



Photo 5: 2015-05-06 14:23



Photo 5: 2015-07-10 14:09



Photo 5: 2015-09-15 13:13



Photo 5: 2015-11-18 10:40



Photo 6: 2013-11-13 13:21



Photo 6: 2014-05-21 11:51



Photo 6: 2014-08-08 12:14



Photo 6: 2014-11-14 14:30



Photo 6: 2015-05-06 14:24



Photo 6: 2015-07-10 14:11



Photo 6: 2015-09-15 13:15



Photo 6: 2015-11-18 10:41



Photo 7: 2013-11-13 13:26



Photo 7: 2014-05-21 11:56



Photo 7: 2014-08-08 12:19



Photo 7: 2014-09-24 15:16

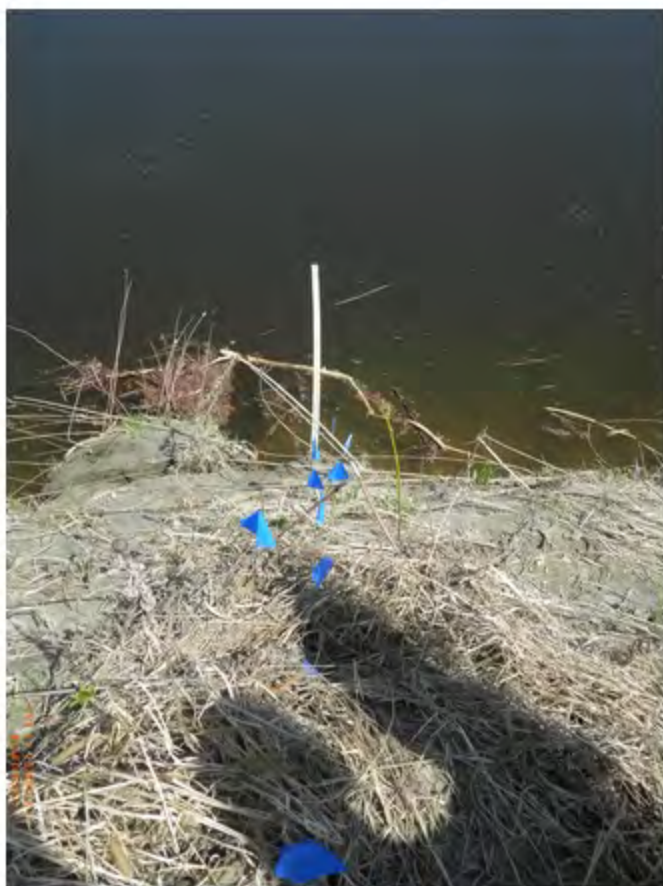


Photo 7: 2015-05-06 14:22



Photo 7: 2015-07-10 14:12



Photo 7: 2015-09-15 13:14



Photo 7: 2015-11-18 10:38



Photo 8: 2014-05-21 11:59



Photo 8: 2014-09-24 15:18



Photo 8: 2015-05-06 14:25



Photo 8: 2015-09-15 13:10



Photo 8: 2015-07-10 14:16



Photo 8: 2015-11-18 10:45



Photo 9: 2014-08-08 12:15



Photo 9: 2014-11-14 14:27



Photo 9: 2015-05-06 14:19



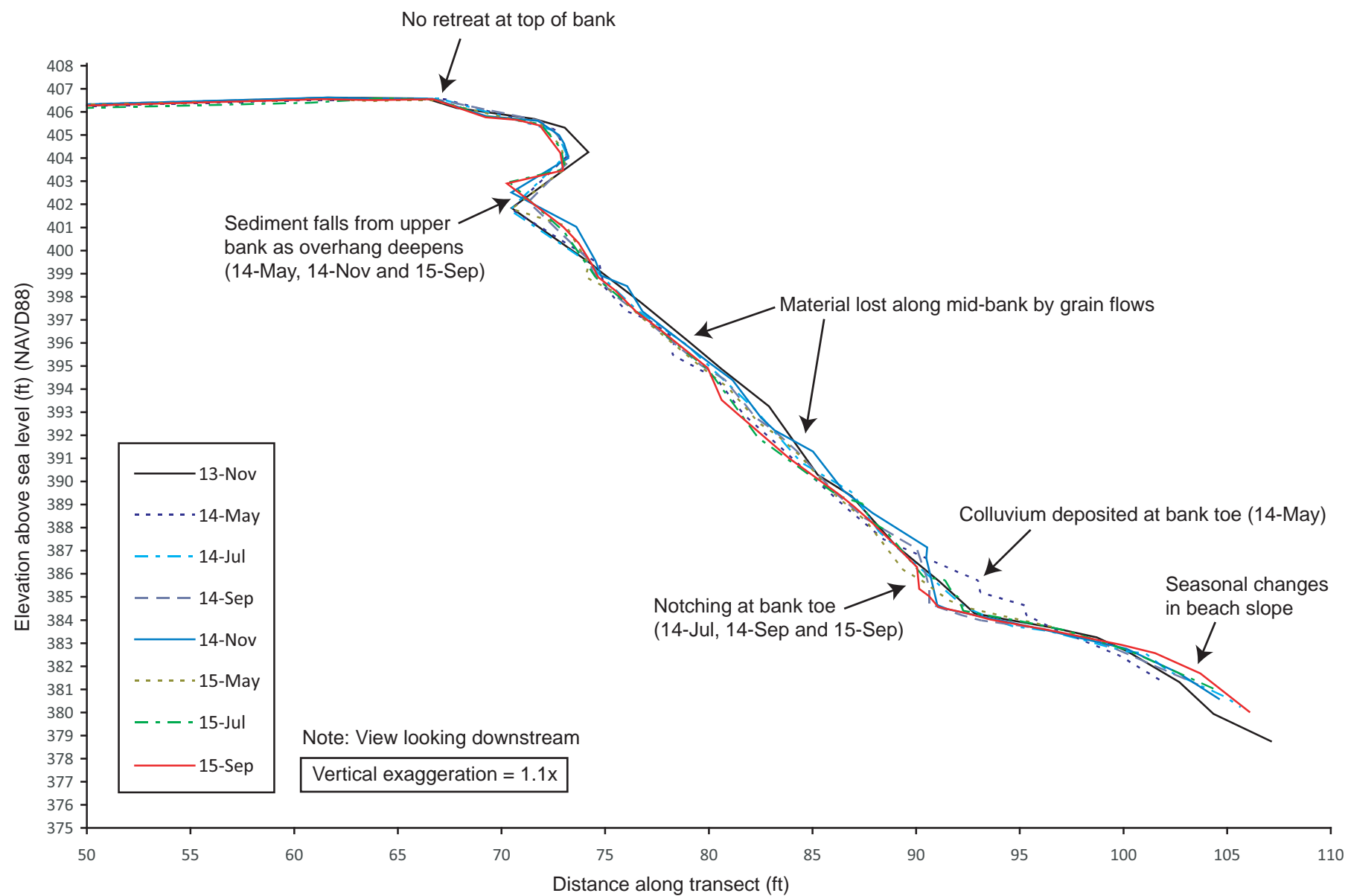
Photo 9: 2015-07-10 14:06



Photo 9: 2015-11-18 10:47



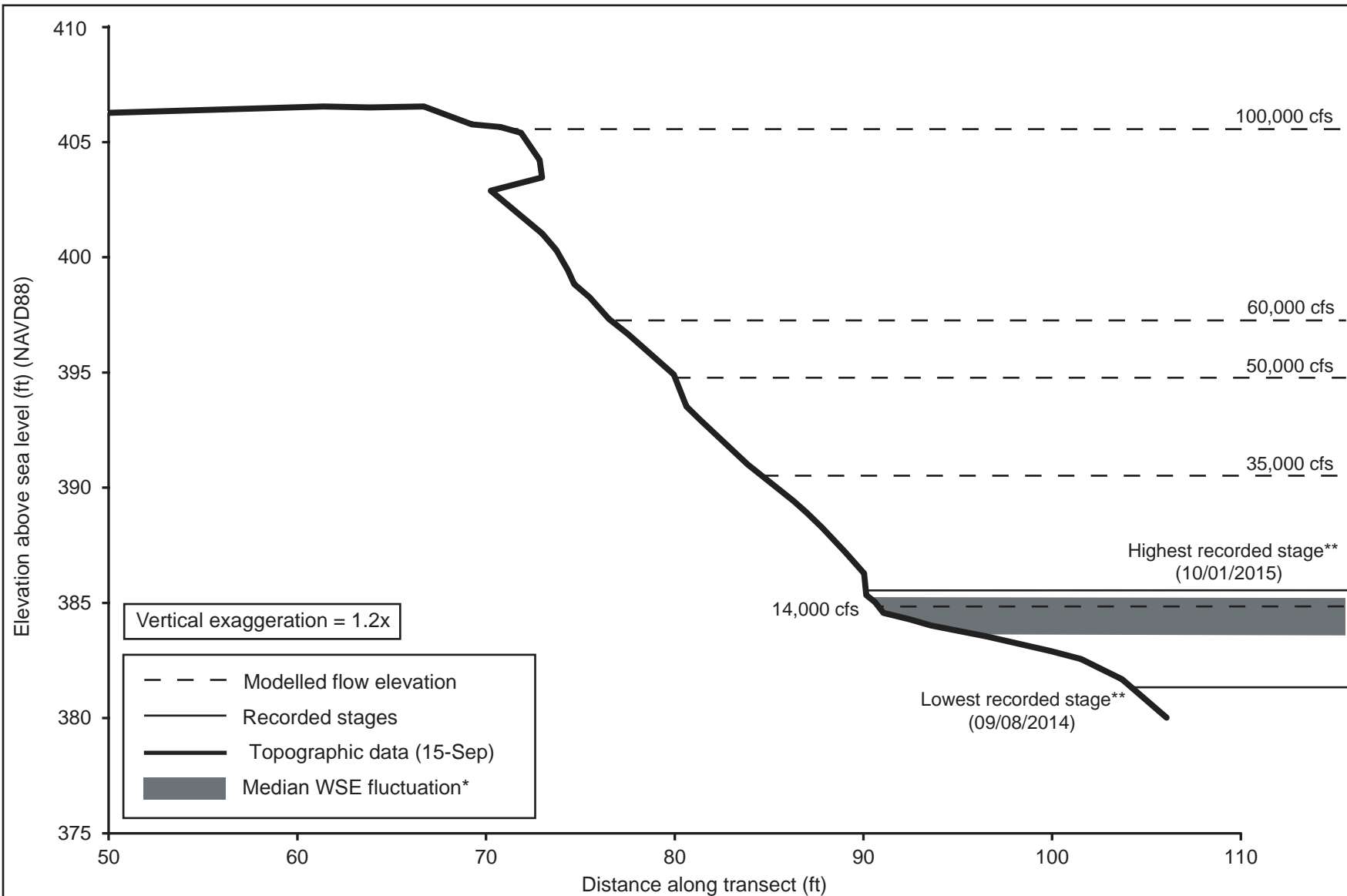
Site map for 02-W07 (Tullando Site).



Erosion monitoring transect for 02-W07 (Tullando Site).

Time period	Observed changes
Summary	No changes at top of bank through study period. Sediment falling from overhanging upper bank as overhang deepens. Material lost through grain flows at mid and lower bank deposited as colluvium at the toe of bank. This sediment is removed and mobilized out of the transect by notching along the bank toe. As sediment is added and removed from bank toe, slope adjusts by returning to angle of repose.
Initial survey (Nov-13)	Noted overhanging soil apron and large active grainflow surface on bank slope extending down to water's edge.
November 2013 to May 2014	Front of soil apron has collapsed, . Sand lost from mid-bank as grain flow has been deposited on lower bank. Winter deposition of sand and colluvium along toe of bank reduces bank slope.
May to July 2014	Significant notching and removal of sediment from bank toe. Slope adjusts through deflation of grainflow surface.
July to September 2014	Continued notching of bank toe and sediment loss through grain flows.
September to November 2014	Colluvium has fallen from undercut upper bank, deposited as unconsolidated fine loamy sand on upper mid-bank. Some of this material has moved downslope where it has been deposited at the bank toe.
November 2014 to May 2015	Sand has continued to move down grain flow slope. Modest deposition at bank toe.
May to July 2015	Sand has continued to move down grain flow slope. Minor notching at bank toe.
July to September 2015	Soil apron has slumped and rotated as overhang deepens. Fine loamy sand deposited on upper mid-bank below undercut. Further notching and removal of sediment from bank toe.

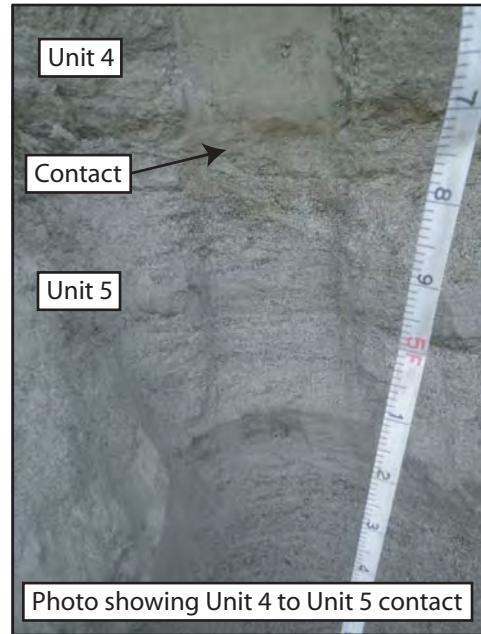
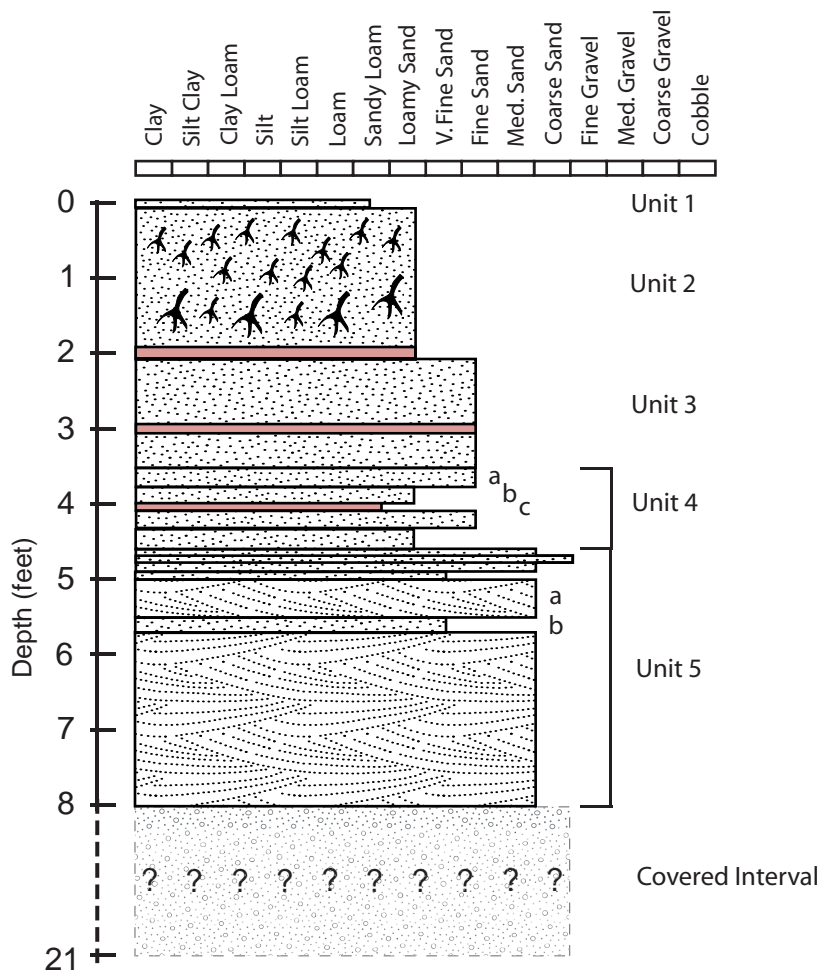
Narrative of observed changes at 02-W07 (Tullando Site).



* Note: Median WSE fluctuation at site equals 1.1 feet under no-spill conditions

**Note: Flow stage recorded at site from 06/2014 - 11/2014 and 07/2015 - 11/2015

Selected river stages at 02-W07 (Tullando Site).



Top elevation = 405.4 feet above sea level (NAVD88)

Unit 1: [0.1ft thick] (2.5Y 5/3 dry, 2.5Y 2.5/1 wet), A Horizon, medium strength, medium granular, fine sandy loam with abundant organics.

Unit 2: [2 ft thick] (2.5Y 5/3 dry, 2.5Y 4/3 wet), B Horizon small granular weak structure, loamy fine sand and abundant small roots at top and woody roots at bottom, gradational contact with Unit 3.

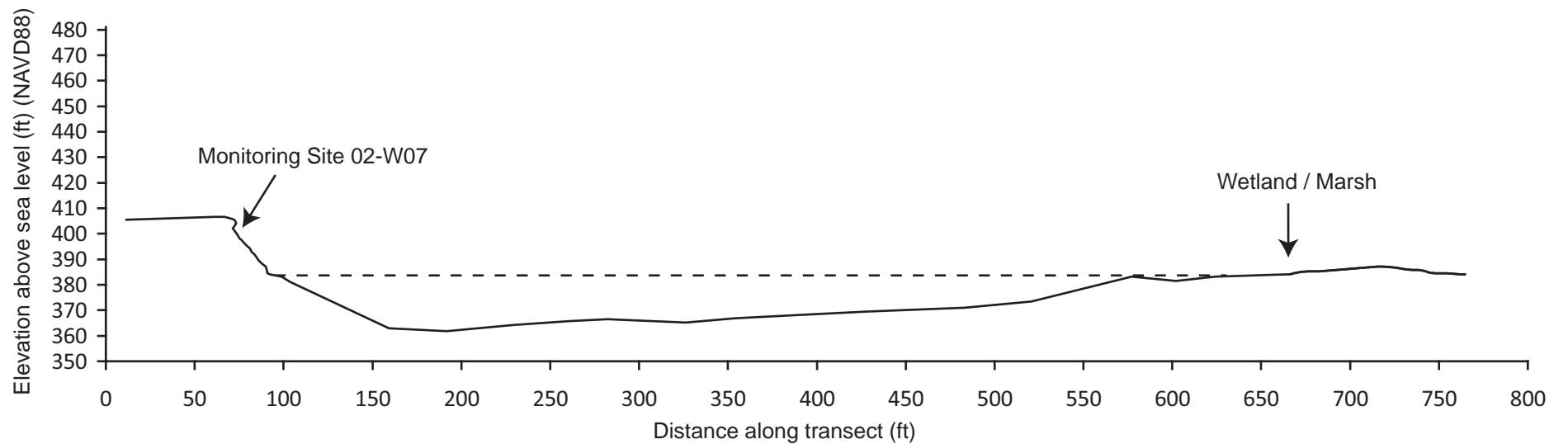
Unit 3: [1.4 ft thick] (2.5Y 6/3 dry, 2.5Y 4/2 wet), weak medium platy, fine sand.

Unit 4: [1.1 ft thick] Interbedded unit consisting of: a) [0.25 ft thick] (2.5Y 6/3 dry, 2.5Y 4/2 wet), weak medium platy, fine sand, b) [0.25 ft thick] (2.5Y 5/3 dry, 2.5Y 4/3 wet), weak small granular, loamy fine sand and c) [0.05 ft thick] (10 YR 4/4 dry, 10 YR 3/6 wet), weak small granular red layer, loamy sand with minor clay.

Unit 5: [3.4 ft thick] Interbedded unit consisting of: a) [0.3-2.3 ft thick], cross-bedded, coarse to medium coarse sand with very coarse sand lens 0.05 ft thick at 4.85ft with gradual contact with b) [0.1-0.2 ft thick] (2.5Y 5/3 dry, 2.5Y 4/2 wet), medium weak platy, medium to fine sand with some silt.

Covered Interval: [13 ft thick] Presumed coarse sand with minor fine gravel.

Stratigraphic column of 02-W07 (Tullando Site).



Note: View looking downstream

Vertical exaggeration = 1.4x

- - - Water surface at time of survey
— Topographic data (14-Jul)

Full river transect for 02-W07 (Tullando Site).

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-W07	1	43.8847450	-72.1678083	162	Portrait bank overview from toe
02-W07	2	43.8847500	-72.1676056	27	Looking down at waters edge from lower bank
02-W07	3	43.8849233	-72.1675850	173	Upper Bank of transect from mid bank
02-W07	4	43.8847500	-72.1676067	110	Looking US along bank from mid bank at XS
02-W07	5	43.8847700	-72.1676083	243	DS view of bank from mid bank in Transect
02-W07	6	43.8847483	-72.1675450	227	DS view of undercut portion of cross section
02-W07	7	43.8848483	-72.1676200	319	View of cross section vertically down from top of bank

Ground photograph locations at 02-W07 (Tullando Site).



Photo 1: 2013-11-13 16:29



Photo 1: 2014-05-29 16:15



Photo 1: 2014-07-22 10:32



Photo 1: 2014-11-18 12:18



Photo 1: 2015-05-07 10:16



Photo 1: 2015-07-14 14:38



Photo 1: 2015-09-23 12:03



Photo 1: 2015-11-18 13:14



Photo 2: 2013-11-13 16:39



Photo 2: 2014-07-22 10:45



Photo 2: 2014-09-18 14:42



Photo 2: 2014-11-18 12:23



Photo 2: 2015-05-07 10:13



Photo 2: 2015-09-23 12:06



Photo 2: 2015-07-14 15:15



Photo 2: 2015-11-18 13:07



Photo 3: 2013-11-13 16:39



Photo 3: 2014-05-29 16:26



Photo 3: 2014-09-18 14:42



Photo 3: 2014-11-18 12:22



Photo 3: 2015-05-07 10:11



Photo 3: 2015-07-14 15:16



Photo 3: 2015-09-23 12:05



Photo 3: 2015-11-18 13:09



Photo 4: 2013-11-13 16:41



Photo 4: 2014-05-29 16:27



Photo 4: 2014-09-18 14:42



Photo 4: 2014-11-18 12:28



Photo 4: 2015-05-07 10:12



Photo 4: 2015-09-23 12:07



Photo 4: 2015-07-14 15:14



Photo 4: 2015-11-18 13:05



Photo 5: 2013-11-13 16:41



Photo 5: 2014-05-29 16:27



Photo 5: 2014-07-22 10:45



Photo 5: 2014-09-18 14:42



Photo 5: 2015-05-07 10:10



Photo 5: 2015-09-23 12:07



Photo 5: 2015-07-14 15:14



Photo 5: 2015-11-18 13:28



Photo 6: 2013-11-13 16:45



Photo 6: 2014-05-29 16:37



Photo 6: 2014-07-22 10:52



Photo 6: 2014-11-18 12:26



Photo 6: 2015-05-07 10:08



Photo 6: 2015-07-14 14:40



Photo 6: 2015-09-23 12:05



Photo 6: 2015-11-18 13:29



Photo 7: 2013-11-13 16:58



Photo 7: 2014-05-29 16:26



Photo 7: 2014-09-18 14:39



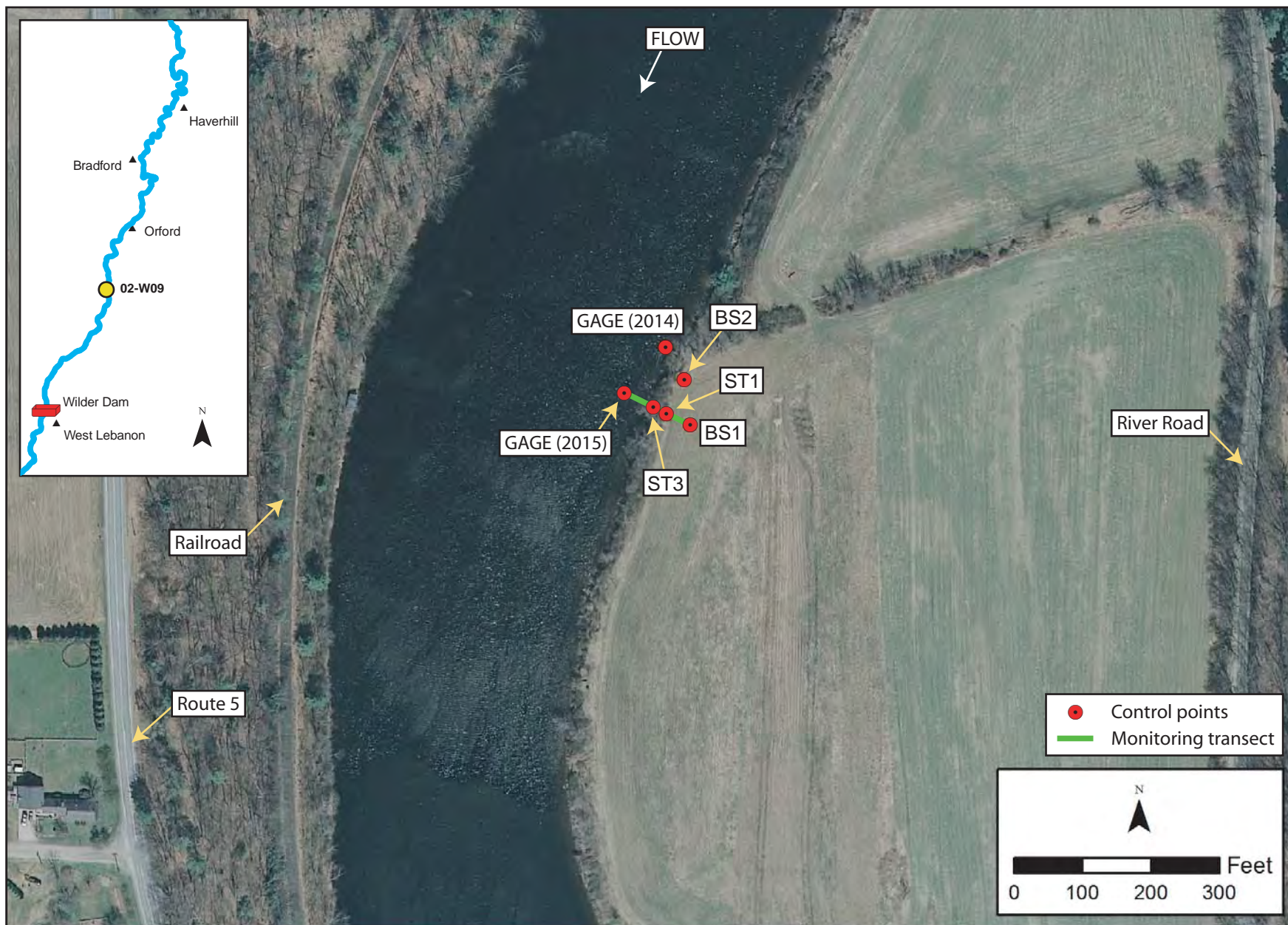
Photo 7: 2015-05-07 10:02



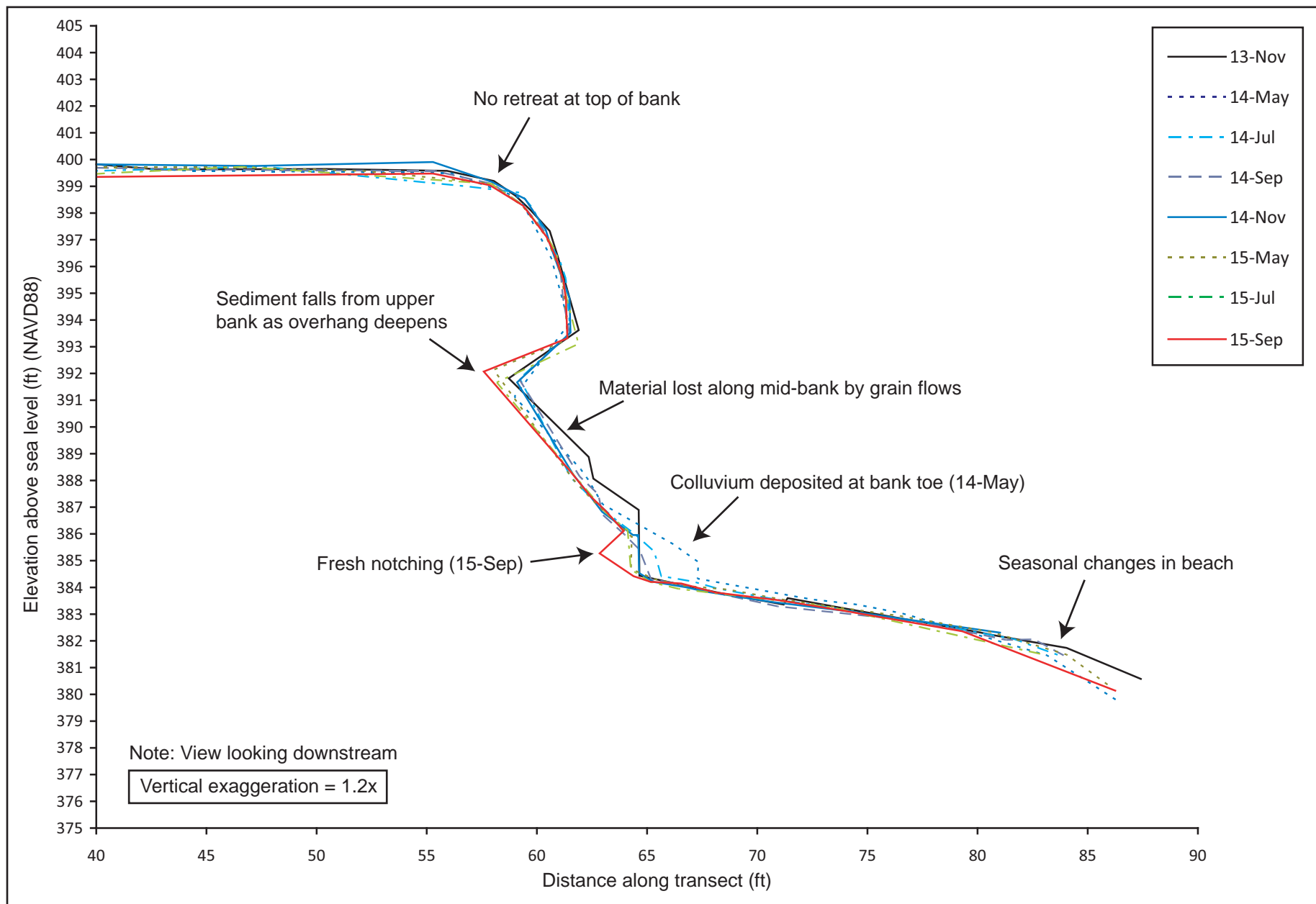
Photo 7: 2015-07-14 14:34



Photo 7: 2015-11-18 12:57



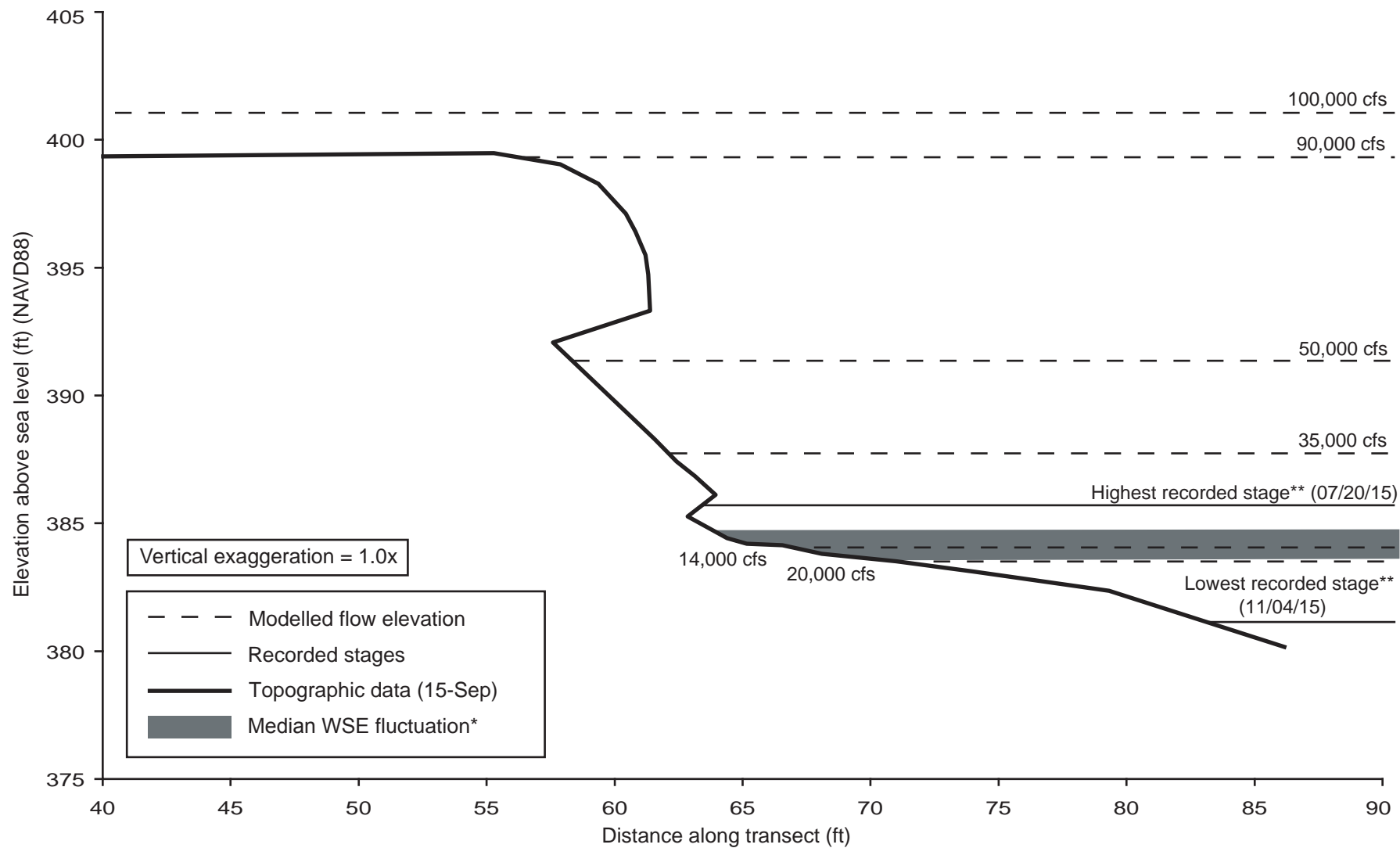
Site map for 02-W09 (Mudge Site).



Erosion monitoring transect for 02-W09 (Mudge Site).

Time period	Observed changes
Summary	No changes at top of bank through study period. Sediment falling from overhanging upper bank as overhang deepens. Material lost through grain flows at mid and lower bank deposited as colluvium at the toe of bank. This sediment is removed and mobilized out of the transect by notching along the bank toe.
Initial survey (Nov-13)	Noted overhanging soil apron adjacent to leaning silver maple and vertical scarp at toe of bank.
November 2013 to May 2014	Sand lost from mid and lower bank as grain flow. Winter deposition of sand along toe of bank reduces bank slope.
May to July 2014	Additional sediment lost from mid, lower and toe of bank. Notching into winter-deposited sand has removed approximately half of deposited material.
July to September 2014	Further sediment lost at mid-bank (grain flow) and notching and removal of sediment from bank toe.
September to November 2014	Further notching and removal of sediment from bank toe.
November 2014 to May 2015	Sediment falls from overhanging upper bank, deepening overhang. Minor deflation of mid-bank grain flow surface. Minor notching at bank toe.
May to July 2015	No observed changes.
July to September 2015	Fresh notching at bank toe removes significant quantity of sediment, steepening bank slope. Additional sediment falls from upper bank overhang. Minor deflation of mid-bank grain flow surface.

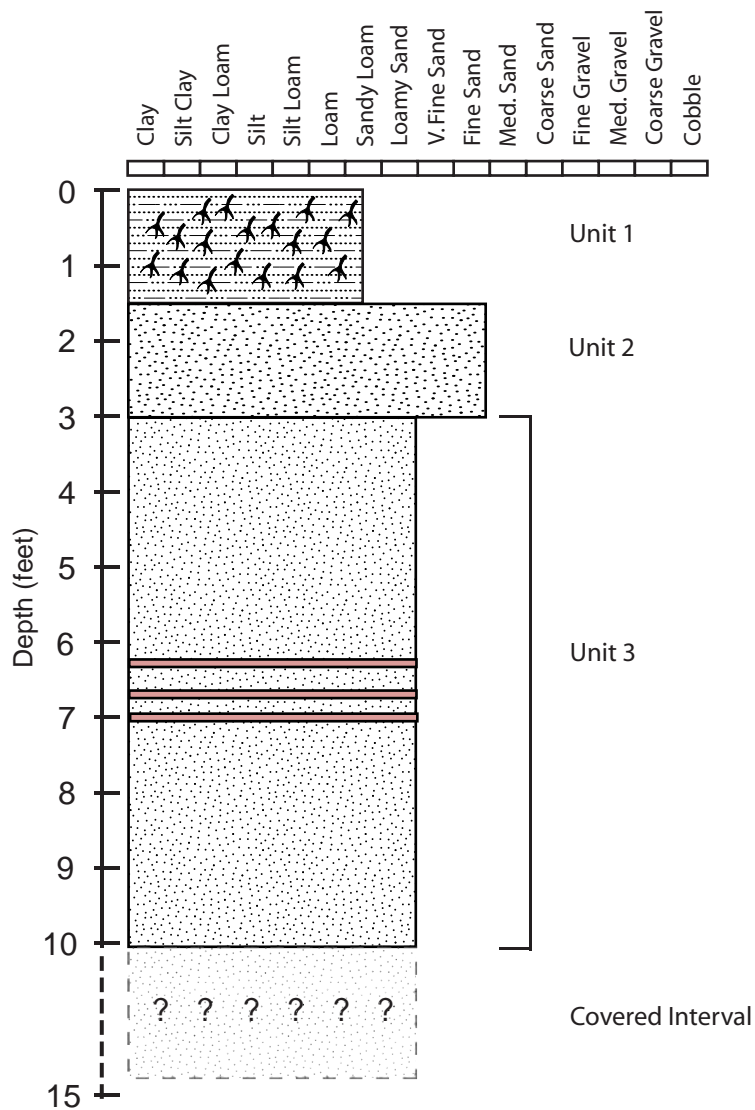
Narrative of observed changes at 02-W09 (Mudge Site).



*Note: Median WSE fluctuation at site equals 1.12 feet under no-spill conditions

**Note: Flow stage recorded at site from 06/2014 - 11/2014 and 07/2015 - 11/2015

Selected river stages at 02-W09 (Mudge Site).



Top elevation = 398.9 feet above sea level (NAVD88)

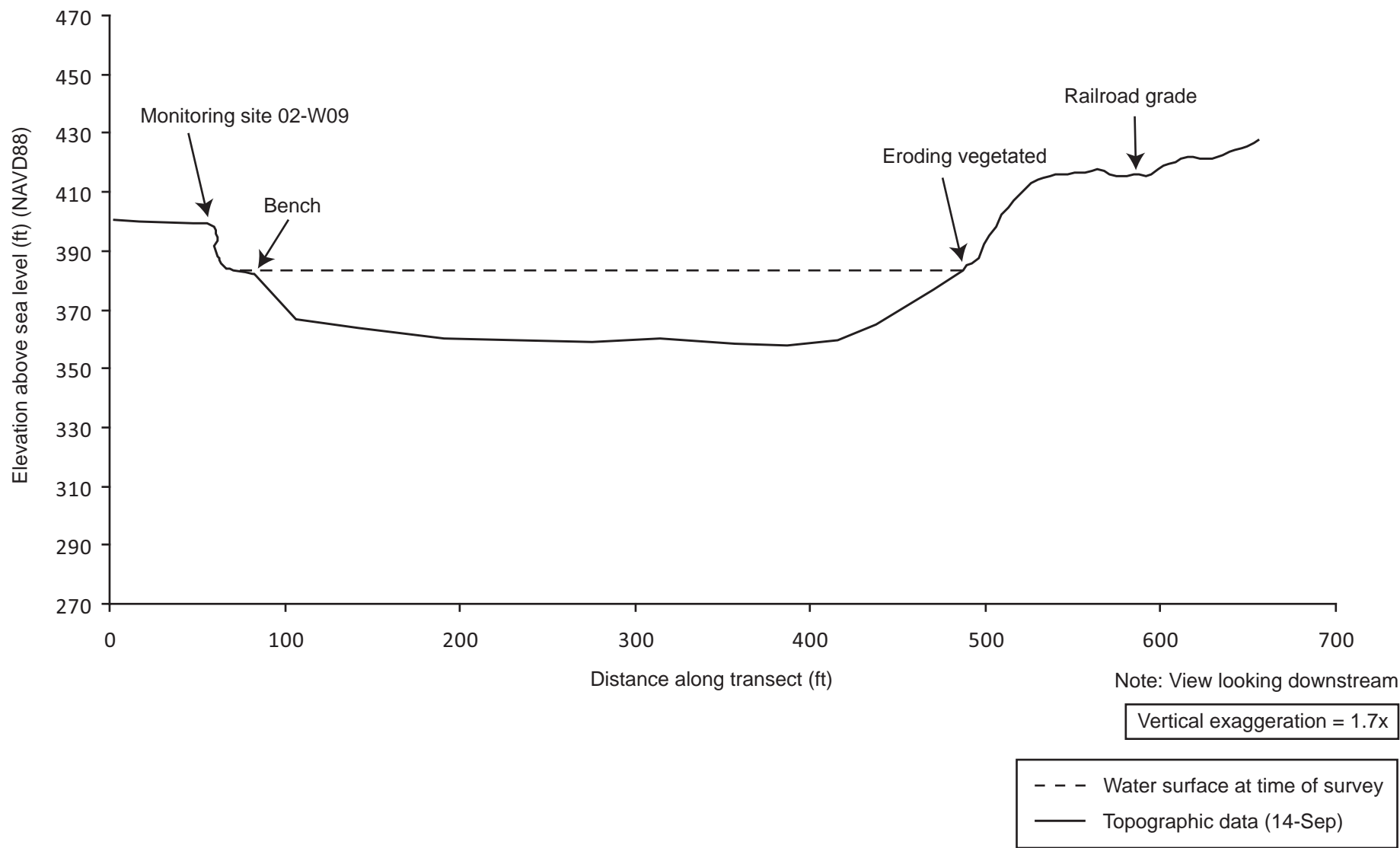
Unit 1: [1.5 ft thick] (10YR 4/3 dry, 10YR 3/2 wet), A Horizon small weak granular, fine sandy loam with silt and organics, abundant small woody roots, gradational contact with Unit 2.

Unit 2: [1.5 ft thick] (2.5Y 5/6 dry, 2.5Y 3/3 wet), small blocky weak, medium to fine sand with some silt, gradational poorly exposed contact with Unit 3.

Unit 3: [7 ft thick] (2.5Y 5/3 dry, 2.5Y 4/3 wet), medium platy weak, mainly whitish fine sand with minor silt, buried soil horizons at 6.3, 6.7 and 7.0 ft (shown in red).

Covered Interval: [4.5 ft thick] Presumed same as Unit 3.

Stratigraphic column of 02-W09 (Mudge Site).



Full cross-section Wc02-W09 1 > f UXV DAVZ

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-W09	1	43.8228950	-72.1872067	145	Bank overview, ladder at XS
02-W09	2	43.8228617	-72.1871683	179	DS view from beach US of cross section
02-W09	3	43.8228667	-72.1871317	106	Straight on landscape view of bank from 30 ft US of XS
02-W09	4	43.8228200	-72.1872367	111	Straight on view of transect bank from end of cross section
02-W09	5	43.8228383	-72.1872017	61	US view of bank 25 ft US of XS
02-W09	6	43.8228467	-72.1871633	134	Close up of upper overhang and slumping bank
02-W09	7	43.8228500	-72.1871783	108	Close up of wave cut scarp on bank toe at cross section

Ground photograph locations at 02-W09 (Mudge Site).



Photo 1: 2013-11-07 15:40



Photo 1: 2014-05-21 15:38



Photo 1: 2014-11-19 12:08



Photo 1: 2015-05-06 15:46



Photo 1: 2015-07-16 11:18



Photo 1: 2015-09-15 16:14



Photo 1: 2015-11-18 14:06



Photo 2: 2013-11-07 15:42



Photo 2: 2014-05-21 15:39



Photo 2: 2014-11-19 12:09



Photo 2: 2015-05-06 15:48

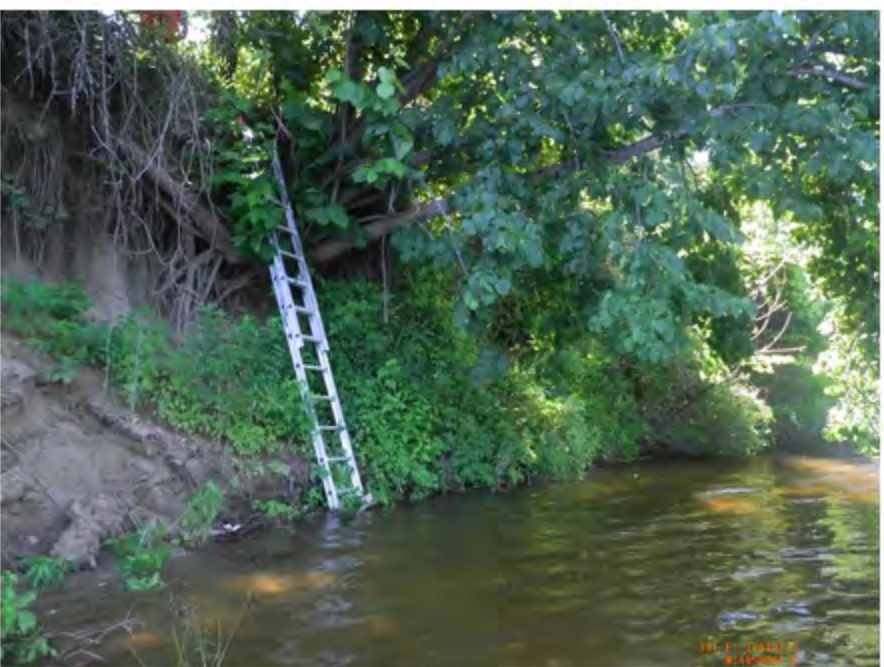


Photo 2: 2015-07-16 11:19



Photo 2: 2015-09-15 16:16



Photo 2: 2015-11-18 14:07



Photo 3: 2013-11-07 15:43



Photo 3: 2014-05-21 15:37



Photo 3: 2014-11-19 12:08



Photo 3: 2015-05-06 15:56



Photo 3: 2015-09-15 16:17



Photo 3: 2015-07-16 11:19



Photo 3: 2015-11-18 14:08



Photo 4: 2013-11-07 15:44



Photo 4: 2014-05-21 15:39



Photo 4: 2014-09-18 16:20



Photo 4: 2014-11-19 12:06



Photo 4: 2015-05-06 15:50



Photo 4: 2015-09-15 16:18



Photo 4: 2015-07-16 11:20



Photo 4: 2015-11-18 14:08



Photo 5: 2013-11-07 15:45



Photo 5: 2014-07-22 13:32



Photo 5: 2014-05-21 15:42



Photo 5: 2014-11-19 12:10



Photo 5: 2015-05-06 15:55



Photo 5: 2015-07-16 11:21



Photo 5: 2015-09-15 16:19



Photo 5: 2015-11-18 14:09



Photo 6: 2013-11-07 15:47



Photo 6: 2014-05-21 15:41



Photo 6: 2014-07-22 13:33



Photo 6: 2014-11-19 12:11



Photo 6: 2015-05-06 15:51



Photo 6: 2015-07-16 11:22



Photo 6: 2015-09-15 16:20



Photo 6: 2015-11-18 14:10



Photo 7: 2014-05-21 15:45



Photo 7: 2014-07-22 13:52



Photo 7: 2015-05-06 15:52



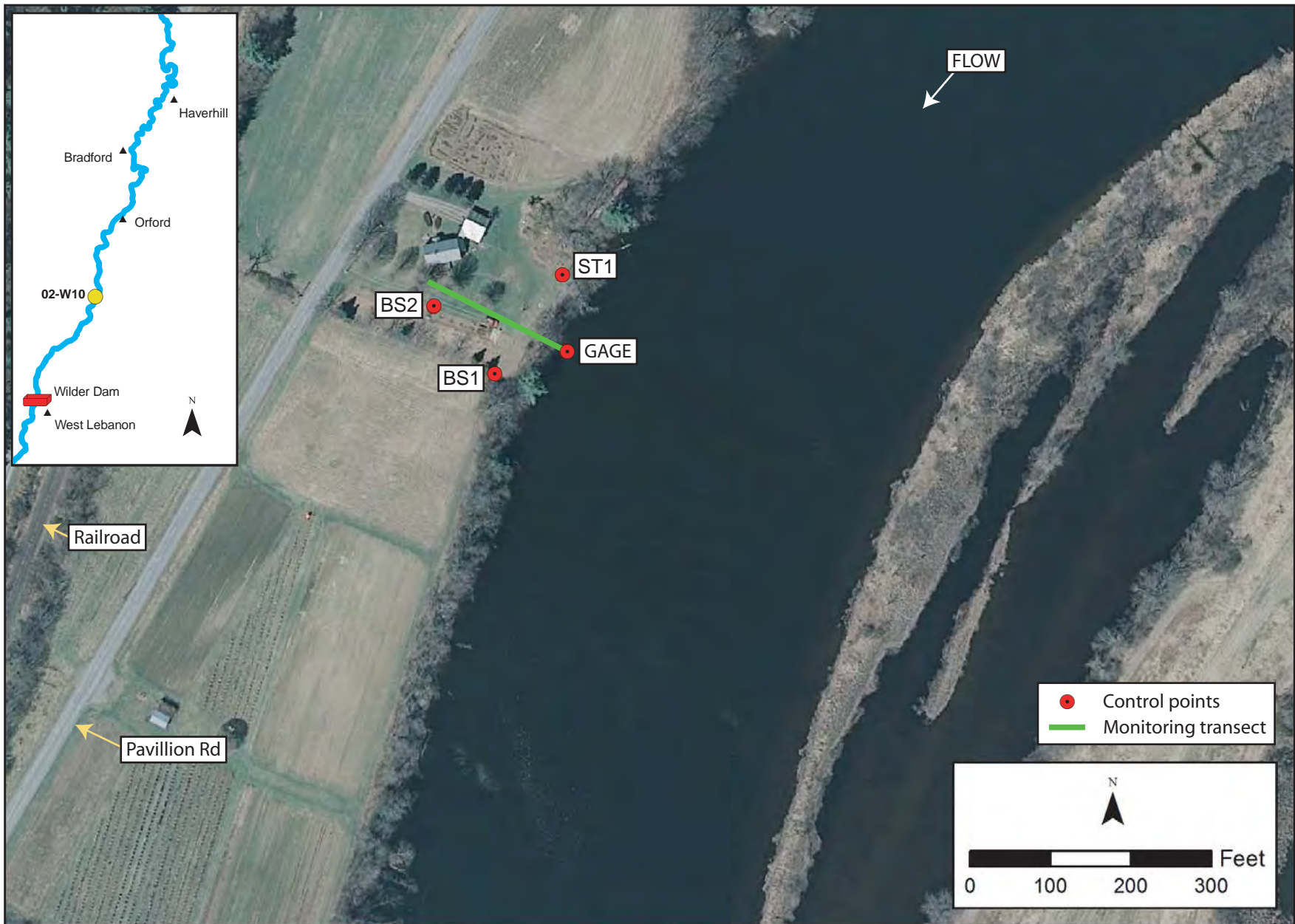
Photo 7: 2015-07-16 11:22



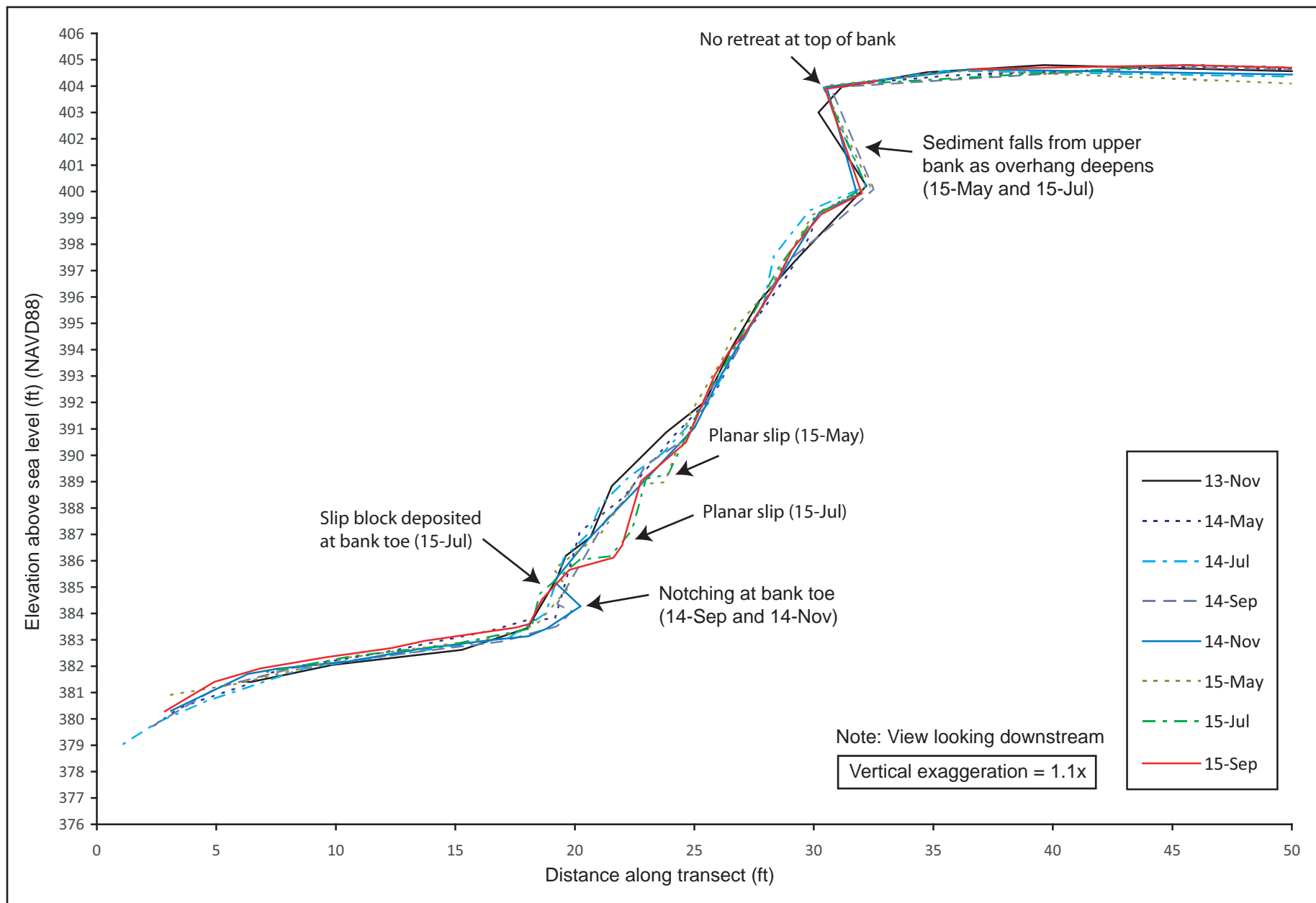
Photo 7: 2015-11-18 14:13



Photo 7: 2015-09-15 16:21

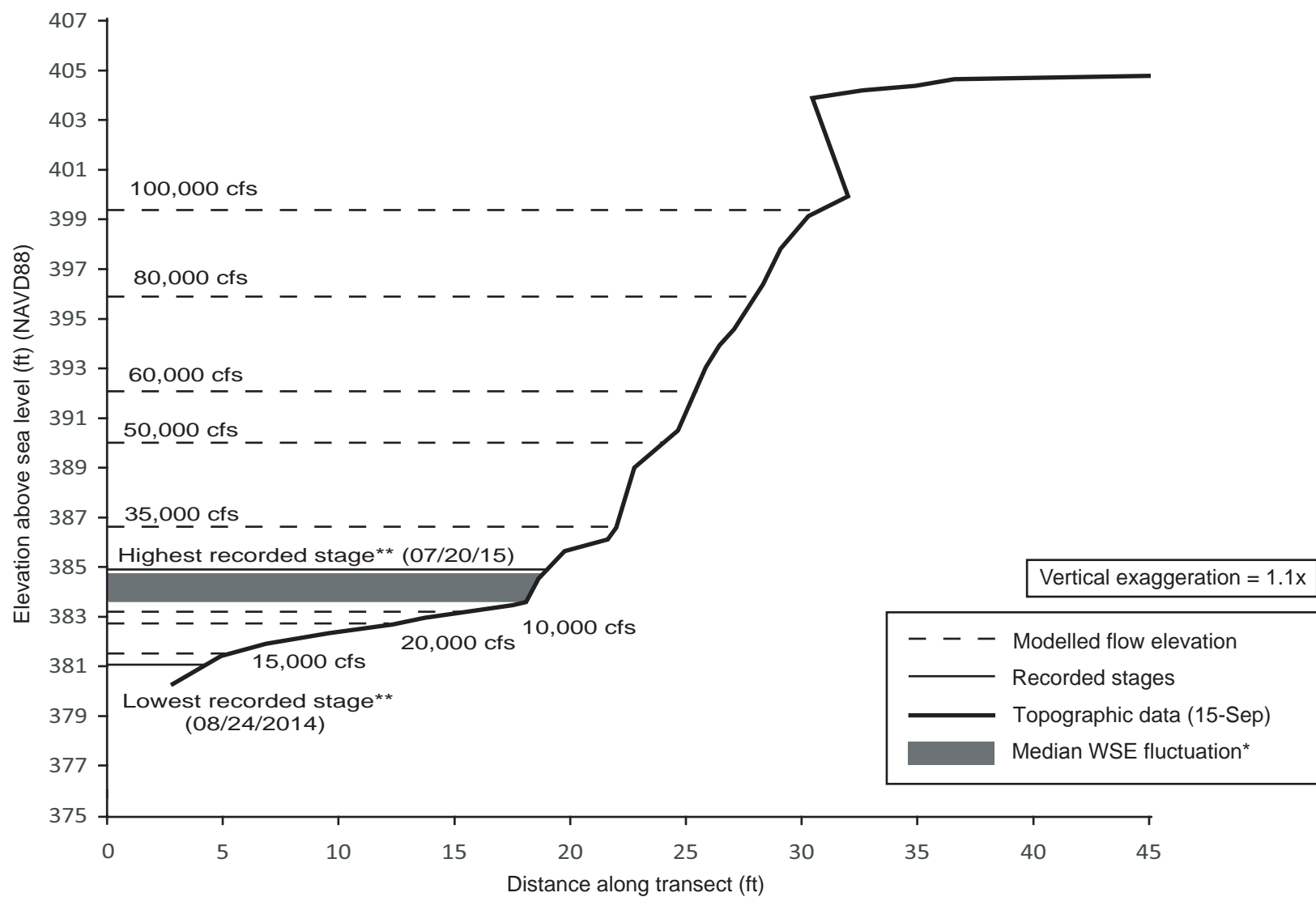


Site map for 02-W10 (Vaughn Site).



Time period	Observed changes
Summary	No changes at top of bank through study period. Sediment falling from overhanging upper bank as overhang deepens. Planar slips develop in lower bank during 2015 with colluvium deposited at base of bank. Notching into bank toe at contact between glaciofluvial sand and glaciolacustrine varved clays.
Initial survey (Nov-13)	Near vertical bank is largely obscured by oak leaves and organic detritus that has accumulated on the bank slope.
November 2013 to May 2014	No observed changes.
May to July 2014	No observed changes.
July to September 2014	Notching at toe of bank at contact between glaciofluvial sand and glaciolacustrine varved clays.
September to November 2014	Further notching and removal of sediment from bank toe has exposed more varves.
November 2014 to May 2015	Sediment falls from overhanging upper bank, deepening overhang. Planar slip in lower bank.
May to July 2015	Sediment falls from overhanging upper bank, deepening overhang. Larger planar slip in lower bank. Slip block deposited at bank toe.
July to September 2015	No observed changes.

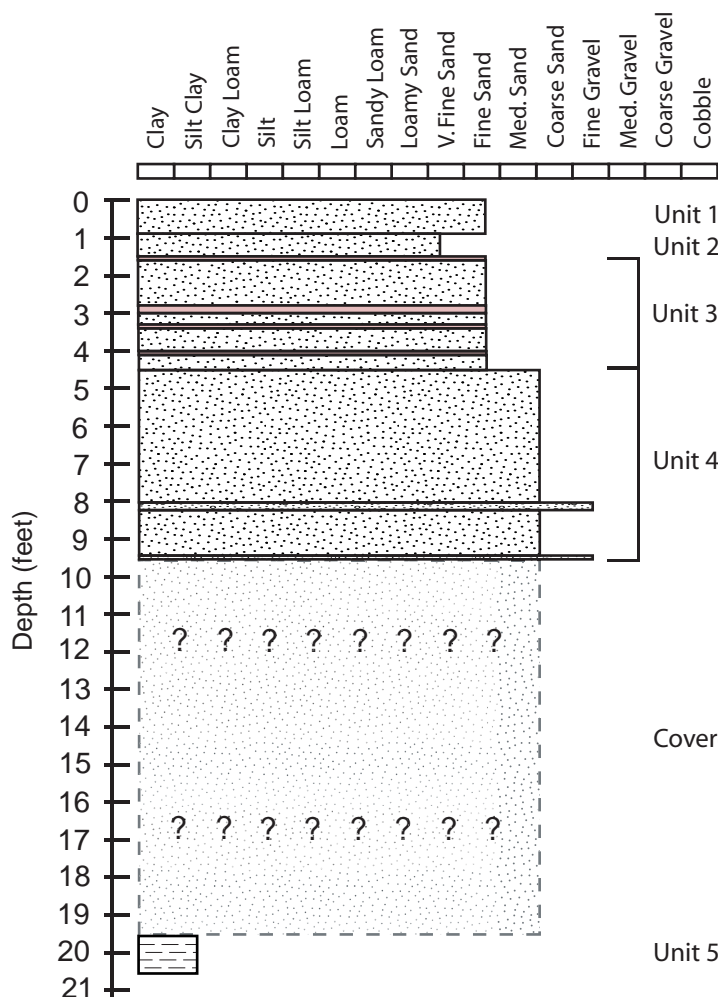
Narrative of observed changes at 02-W10 (Vaughn Site).



*Note: Median WSE fluctuation at site equals 1.11 feet under no-spill conditions

**Note: Flow stage recorded at site from 06/2014 - 11/2014 and 07/2015 - 11/2015

Selected river stages at 02-W10 (Vaughn Site).



Top elevation = 403.9 feet above sea level (NAVD88)

Unit 1: [0.9 ft thick] (2.5Y 4/4 dry, 2.5Y 3/2 wet), A horizon, weak, small granular, silty fine sand with abundant organics, gradational contact with unit 2.

Unit 2: [0.6 ft thick] (2.5Y 6/4 dry, 2.5Y 4/4 wet), B horizon, medium, weak blocky, silty very fine sand, gradational contact with unit 3.

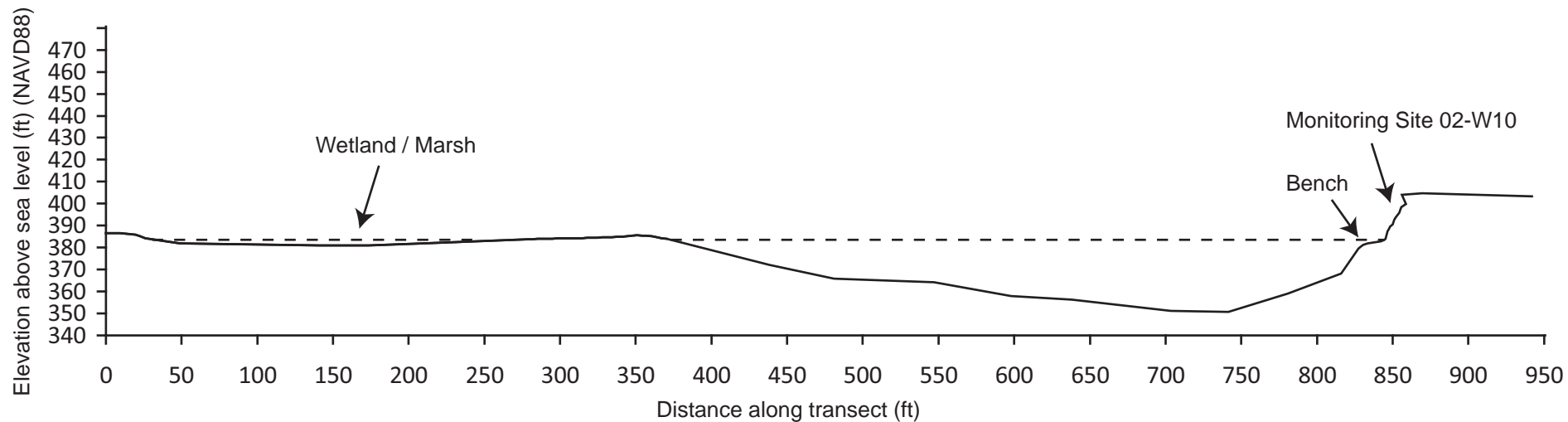
Unit 3: [3 ft thick] (2.5Y 6/3 dry, 2.5Y 4/3 wet), medium, very weak blocky, fine sand, with 4 reddish layers at 1.5ft, 2.8ft, 3.3ft and 4ft between 0.1 and 0.2 ft thick, sharp contact with unit 4.

Unit 4: [5 ft thick] coarse medium sand, well sorted, containing 30-40% lithics, 60-70% quartz, lenses of fine gravel at 8ft and 9.4ft.

Covered interval: [9.9 ft thick] Presumed coarse medium sand, sharp contact with Unit 5.

Unit 5: [1 ft thick] (Gley 2 6/10BG), glaciolacustrine clay varves, representing annual laminations, grey.

Stratigraphic column of 02-W10 (Vaughn Site).



Note: View looking downstream

Vertical exaggeration = 1.4x

- - - Water surface at time of survey
— Topographic data (14-Sep)

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-W10	1	43.8000733	-72.1914467	147	Looking down on transect with ladder and TOB
02-W10	2	43.8001633	-72.1916900	123	Portrait view looking down on transect from TOB
02-W10	3	43.8011817	-72.1929667	320	Portrait view straight on of entire bank from end of transect
02-W10	4	43.8014367	-72.1932933	349	US view from end of transect
02-W10	5	43.8011100	-72.1928617	265	View of bank toe and clay varves exposed
02-W10	6	43.8013317	-72.1932183	230	DSV from end of transect
02-W10	7	43.8000517	-72.1913517	332	US view
02-W10	8	43.8014017	-72.1931733	287	From end of cross section, toe of bank transect

Ground photograph locations at 02-W10 (Vaughn Site).



Photo 1: 2013-11-08 14:15



Photo 1: 2014-11-18 16:48



Photo 1: 2015-05-07 12:19



Photo 1: 2015-09-15 15:13



Photo 1: 2015-11-18 15:10



Photo 2: 2014-05-29 14:37

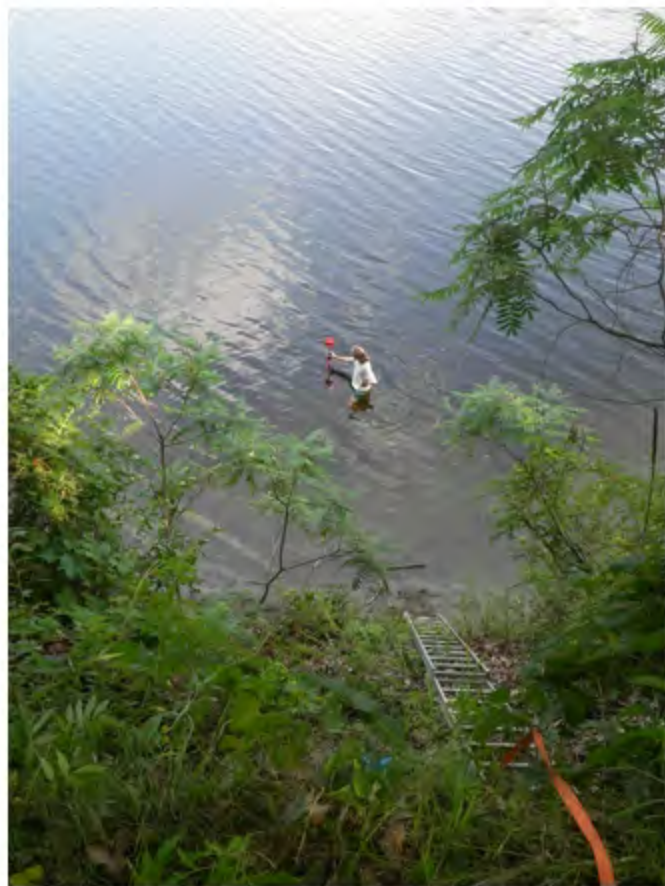


Photo 2: 2014-07-22 16:06

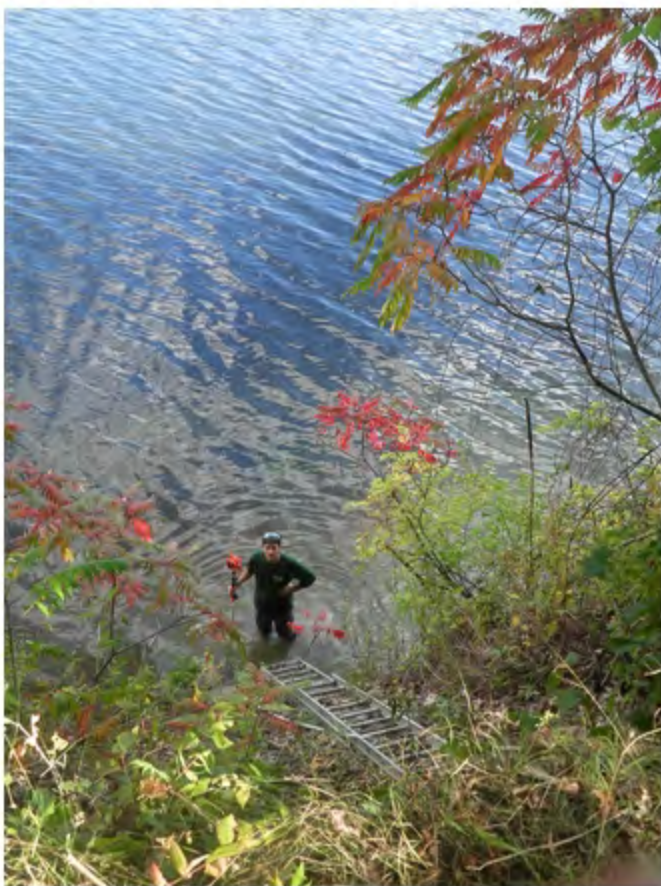


Photo 2: 2014-09-23 15:31



Photo 2: 2015-05-07 12:20



Photo 3: 2013-11-08 14:18



Photo 3: 2014-05-29 13:58



Photo 3: 2014-07-22 16:33



Photo 3: 2014-11-18 16:58



Photo 3: 2015-05-07 12:30



Photo 3: 2015-07-16 10:02



Photo 3: 2015-09-15 15:07



Photo 3: 2015-11-18 15:28



Photo 4: 2013-11-08 14:20



Photo 4: 2014-05-29 13:57



Photo 4: 2014-07-22 16:33



Photo 4: 2015-05-07 12:31



Photo 4: 2015-09-15 15:07



Photo 4: 2015-07-16 10:03



Photo 4: 2015-11-18 15:29



Photo 5: 2013-11-08 14:21



Photo 5: 2014-07-22 16:33



Photo 5: 2014-05-29 13:58



Photo 5: 2014-11-18 16:59



Photo 5: 2015-05-07 12:32



Photo 5: 2015-07-16 10:03



Photo 5: 2015-09-15 15:08



Photo 5: 2015-11-18 15:30



Photo 6: 2014-05-29 13:57



Photo 6: 2014-07-22 16:33



Photo 6: 2014-09-23 15:40



Photo 6: 2015-05-07 12:33



Photo 6: 2015-07-16 10:04



Photo 6: 2015-09-15 15:08

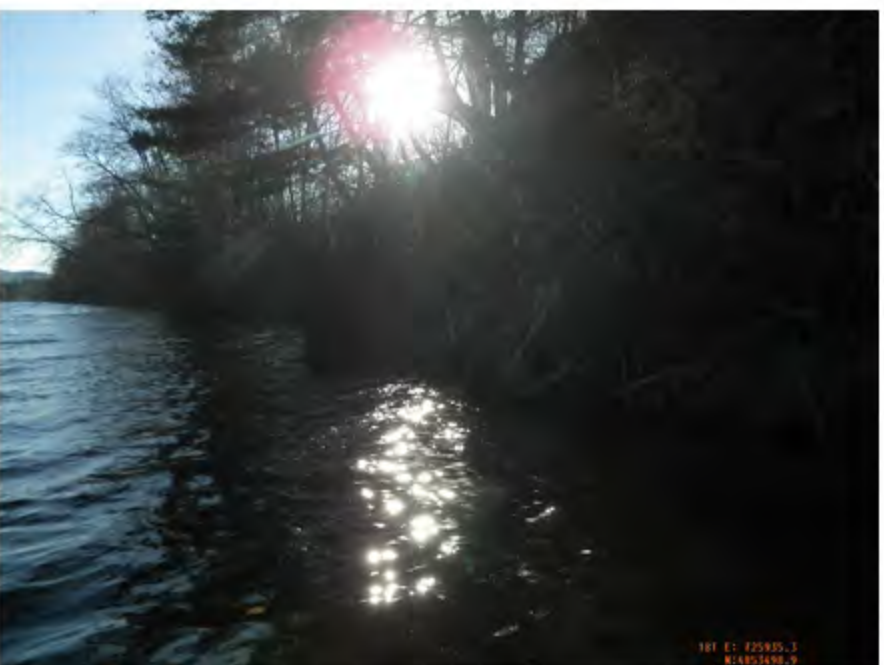


Photo 6: 2015-11-18 15:31



Photo 7: 2014-09-23 15:40



Photo 7: 2014-11-18 16:57



Photo 7: 2015-05-07 12:34



Photo 7: 2015-07-16 10:05



Photo 7: 2015-09-15 15:09



Photo 7: 2015-11-18 15:30



Photo 8: 2013-11-08 14:18



Photo 8: 2014-05-29 13:56



Photo 8: 2014-11-18 16:57



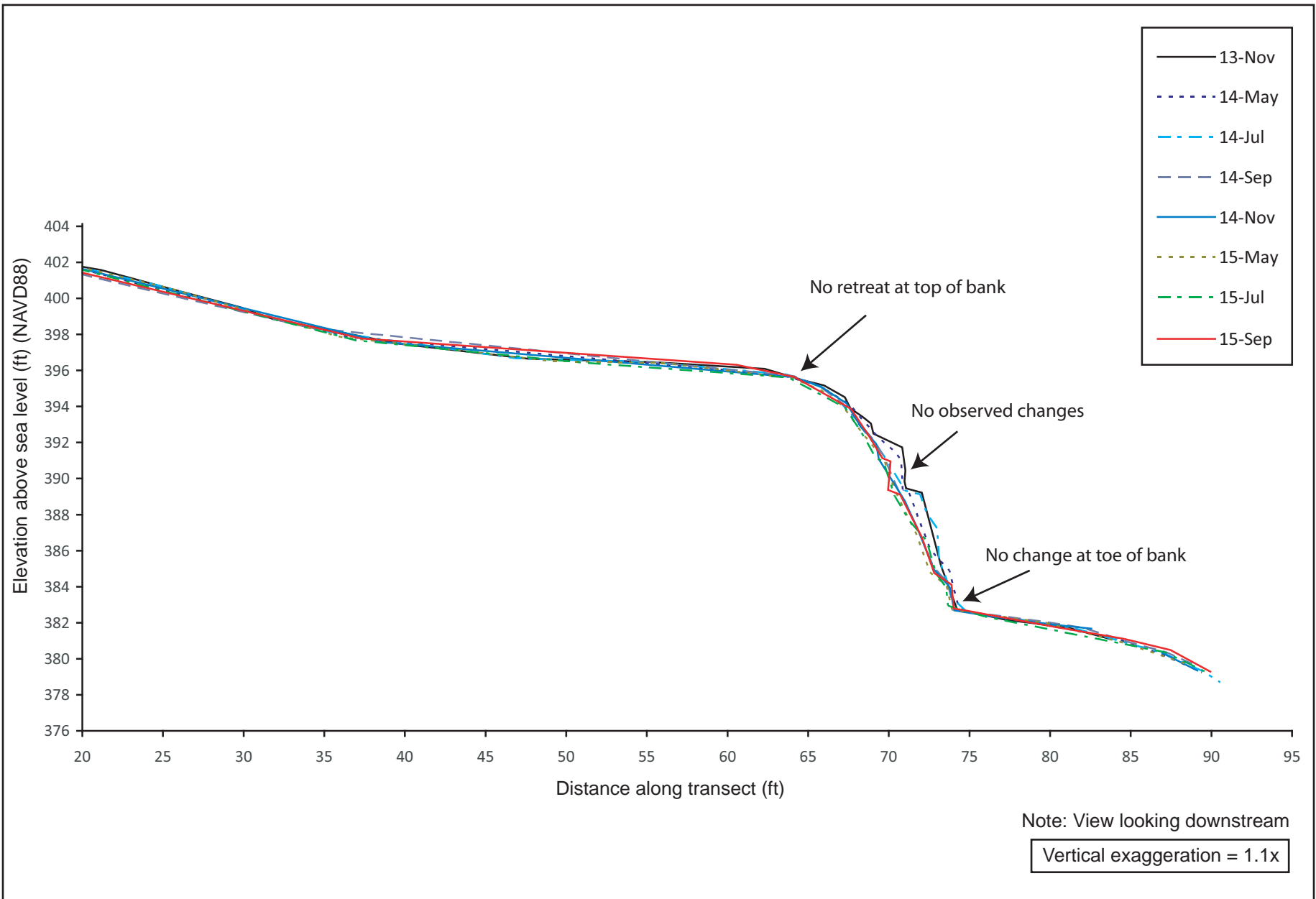
Photo 8: 2015-05-07 12:35



Photo 8: 2015-09-15 15:09



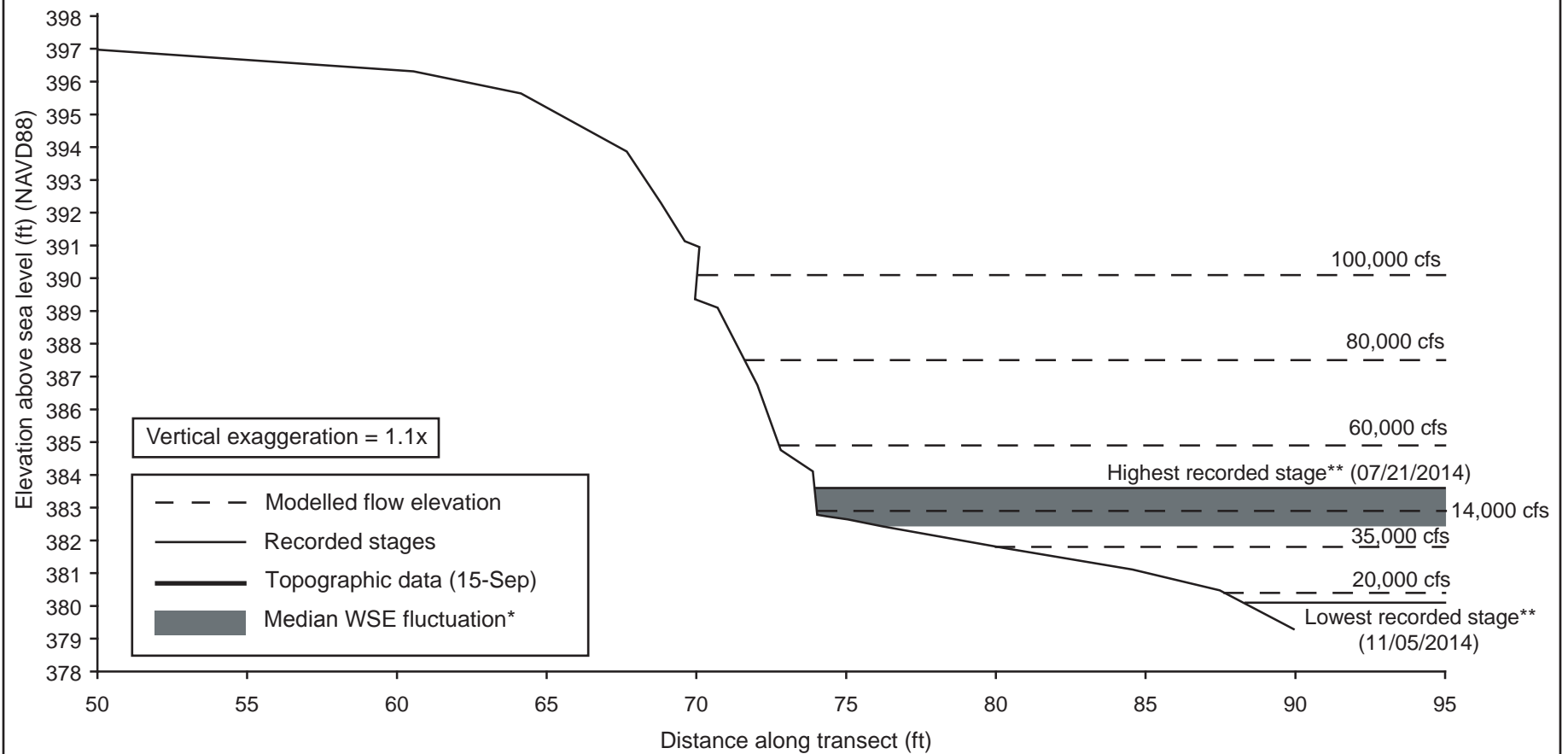
Site map for 02-W12 (Pine Park Site).



Erosion monitoring transect for 02-W12 (Pine Park Site).

Time period	Observed changes
Summary	No retreat at top of bank. No changes observed during study period.
Initial survey (Nov-13)	Transect across mossy soil apron in coniferous forest just upstream of riprap bank armor. Leaning trees growing on bank indicate previous bank movement.
November 2013 to May 2014	No observed changes.
May to July 2014	No observed changes.
July to September 2014	No observed changes.
September to November 2014	No observed changes.
November 2014 to May 2015	No observed changes.
May to July 2015	No observed changes.
July to September 2015	No observed changes.

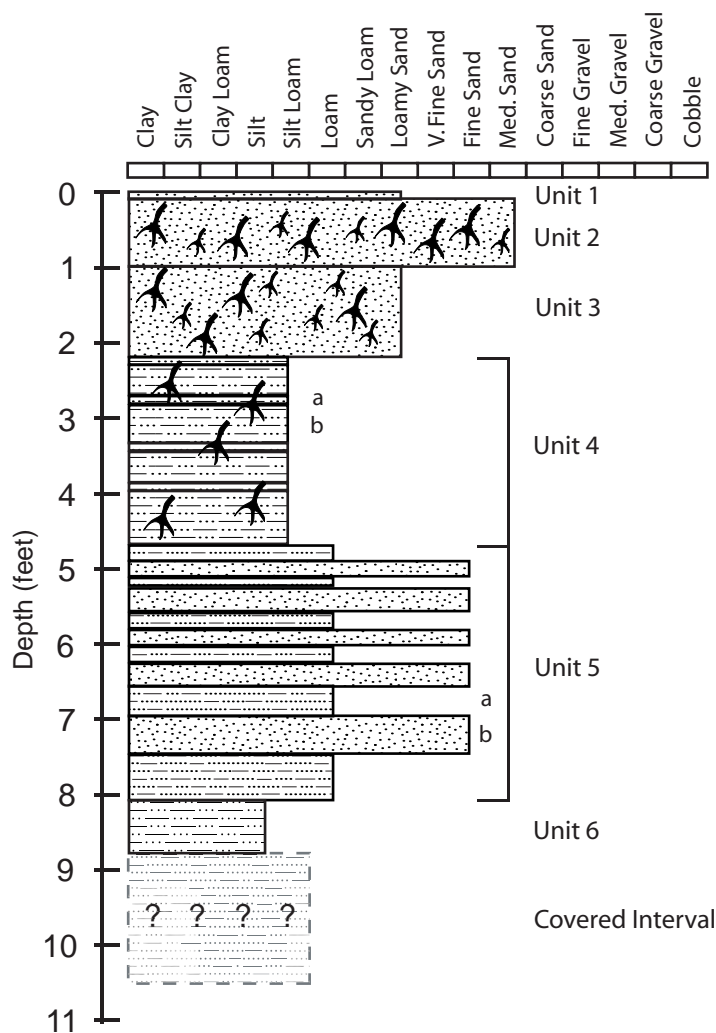
Narrative of observed changes at 02-W12 (Pine Park Site).



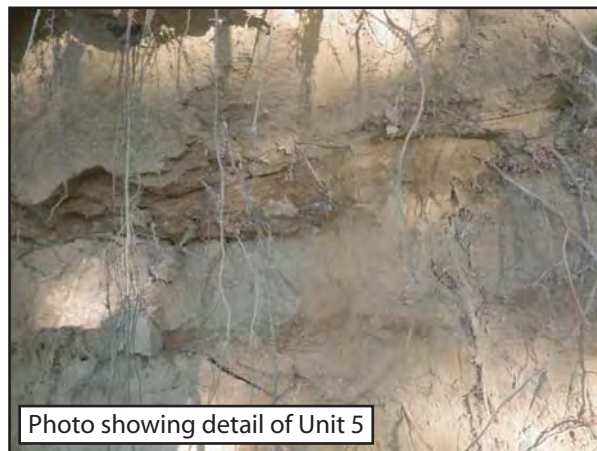
*Note: Median WSE fluctuation at site equals 1.14 feet under no-spill conditions

**Note: flow stage recorded at site from 06/2014 - 11/2014

Selected river stages at 02-W12 (Pine Park Site).



Top elevation = 395.1 feet above sea level (NAVD88)



Unit 1: [0.1 ft thick] A Horizon (10YR 3/3), finely laminated moderate medium granular, slightly silty sand with fair amount of organic matter and significant roots; sharp contact with Unit 2.

Unit 2: [0.9 ft thick] Oxidized (2.5Y 5/6 dry, 2.5Y 2/4 wet), finely laminated, weak small granular medium sand with abundant roots; gradational contact with Unit 3.

Unit 3: [1.2 ft thick] (2.5Y 5/4 dry, 2.5Y 4/4 wet), weak medium granular, slightly silty fine sand with abundant roots; sharp contact with Unit 4.

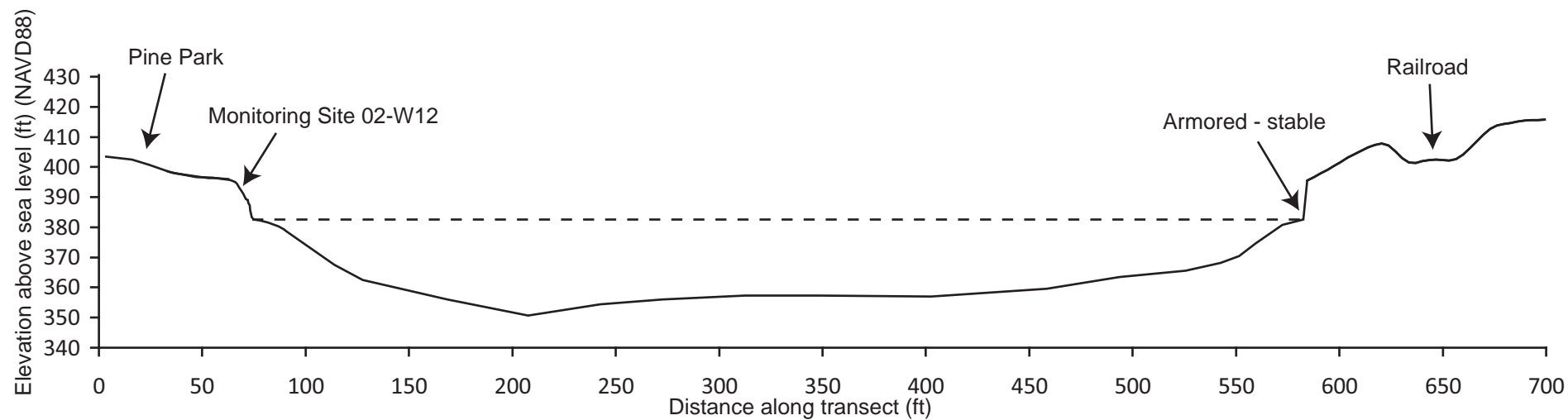
Unit 4: [2.5 ft thick] Interbedded unit consisting of: a) [0.1 ft thick] (2.5Y 5/4 dry, 2.5Y 4/3 wet), moderate platy granular, very fine sandy silt with moderate roots; sharp contact with b) [0.4-0.5 ft thick] (2.5Y 6/3 dry, 2.5Y 4/3 wet), moderate weak granular, very fine sandy silt with moderate roots.

Unit 5: [3.4 ft thick] Interbedded unit consisting of: a) [0.1-0.6 ft thick] (2.5Y 5/3 dry, 2.5Y 3/3 wet), weak medium granular, silty fine sand with no roots; diffuse contacts with b) [0.2-0.5 ft thick] (2.5Y 4/3 dry, 2.5Y 3/2 wet), weak medium granular, fine sand with no roots; diffuse contact with Unit 6.

Unit 6: [0.7 ft thick] (2.5Y 4/3 dry, 2.5Y 3/2 wet), weak medium granular, very silty fine sand.

Covered interval: [1.6 ft thick] Presumed to be silty sand.

Stratigraphic column of 02-W12 (Pine Park Site).



Note: View looking downstream

Vertical exaggeration = 1.5x

- - - Water surface at time of survey
— Topographic data (14-Aug)

Full River Transect - 02-W012 (Pine Park Site).

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-W12	1	43.7219611	-72.2815694	147	Portrait view bank at cross section
02-W12	2	43.7220300	-72.2815100	116	US view of bank adjacent to transect from end of transect
02-W12	3	43.7219611	-72.2815694	180	DS view of river bank from end of transect
02-W12	4	43.7219600	-72.2815683	147	Portrait view mid bank
02-W12	5	43.7222500	-72.2815700	79	US overview from end of cross section

Ground photograph locations at 02-W12 (Pine Park Site).



Photo 1: 2013-11-18 12:13



Photo 1: 2014-05-29 11:18



Photo 1: 2014-09-24 17:12



Photo 1: 2014-11-19 13:48



Photo 1: 2015-05-06 17:43



Photo 1: 2015-07-14 18:54



Photo 1: 2015-09-22 12:19



Photo 1: 2015-11-18 16:42



Photo 2: 2013-11-18 12:13



Photo 2: 2014-09-24 17:14



Photo 2: 2014-05-29 11:21



Photo 2: 2014-11-19 13:46



Photo 2: 2015-05-06 17:45

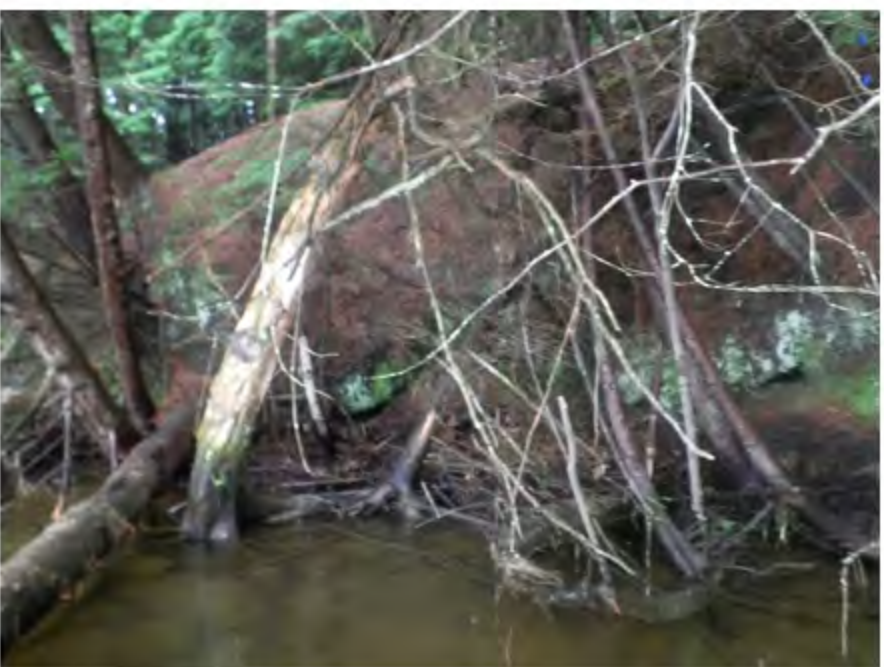


Photo 2: 2015-07-14 18:54



Photo 2: 2015-09-22 12:19



Photo 2: 2015-11-18 16:43



Photo 3: 2013-11-18 12:14



Photo 3: 2014-05-29 11:19



Photo 3: 2014-08-08 15:56



Photo 3: 2014-11-19 13:48



Photo 3: 2015-05-06 17:45



Photo 3: 2015-07-14 18:55



Photo 3: 2015-09-22 12:20



Photo 3: 2015-11-18 16:43



Photo 4: 2013-11-18 12:21



Photo 4: 2014-05-29 11:31



Photo 4: 2014-09-24 17:13



Photo 4: 2014-11-19 13:49



Photo 4: 2015-05-06 17:47



Photo 4: 2015-07-14 18:56



Photo 4: 2015-09-22 12:21



Photo 4: 2015-11-18 16:44



Photo 5: 2014-05-29 11:20



Photo 5: 2015-05-06 17:48



Photo 5: 2015-07-14 18:57



Photo 5: 2015-09-22 12:21

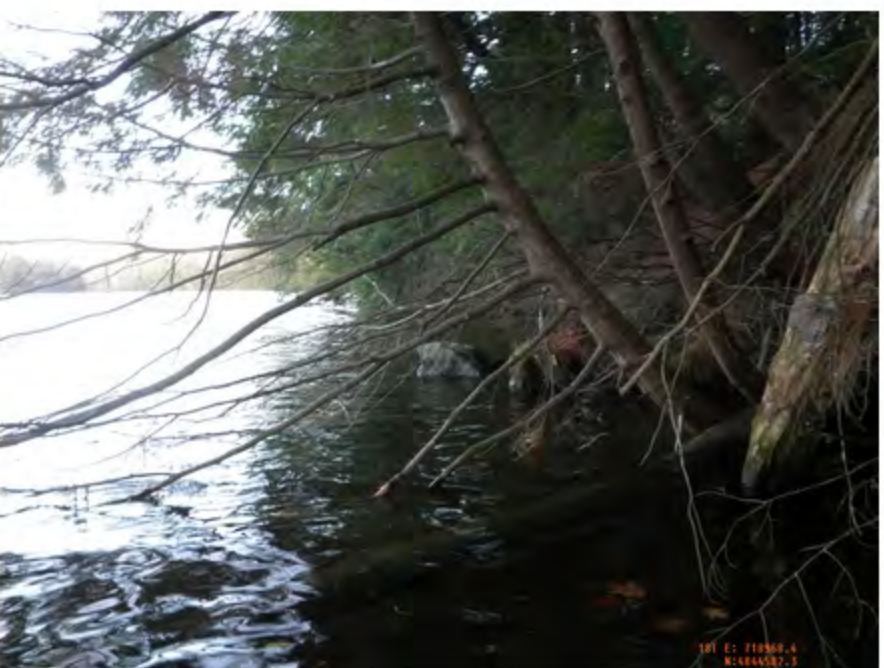
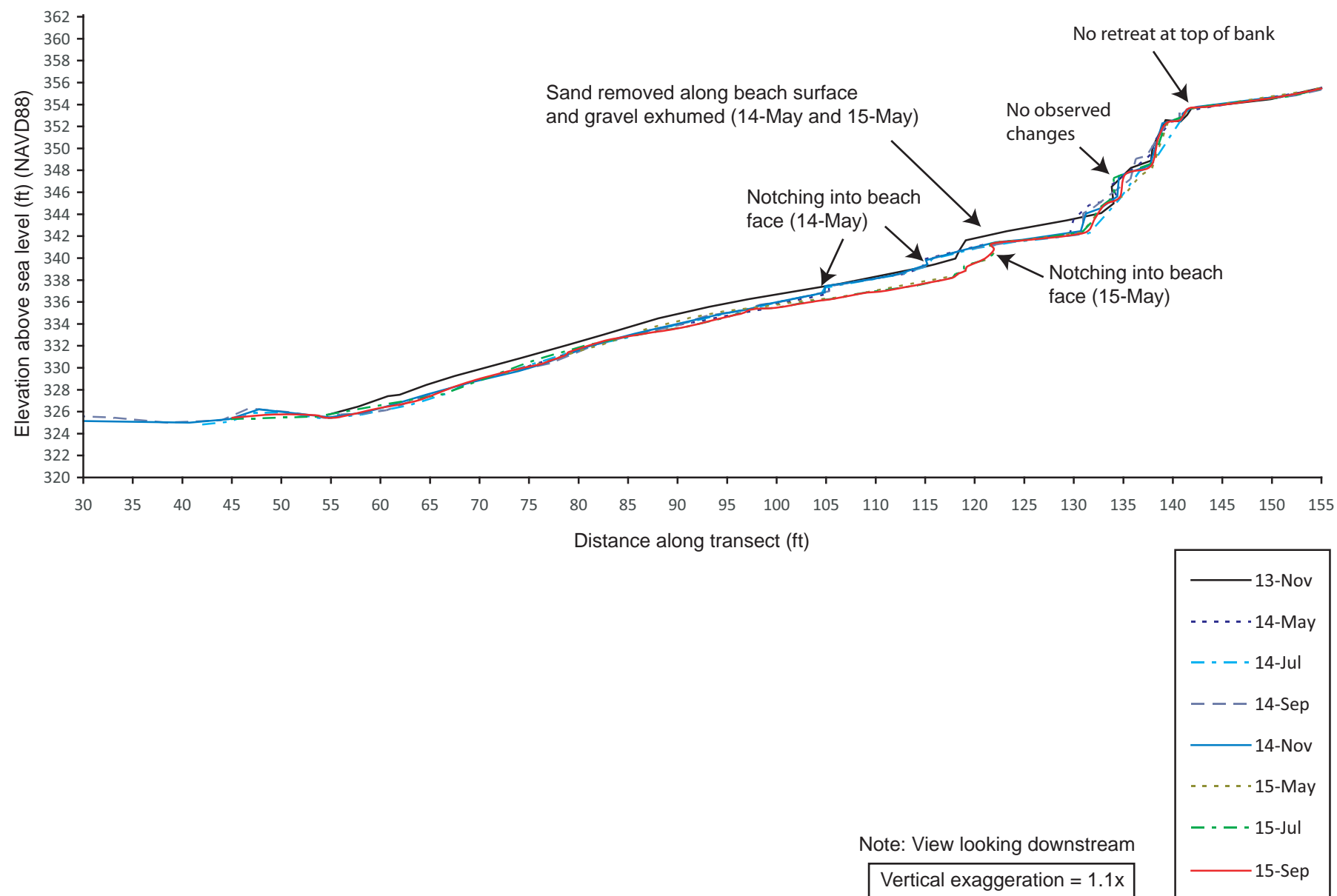


Photo 5: 2015-11-18 16:45



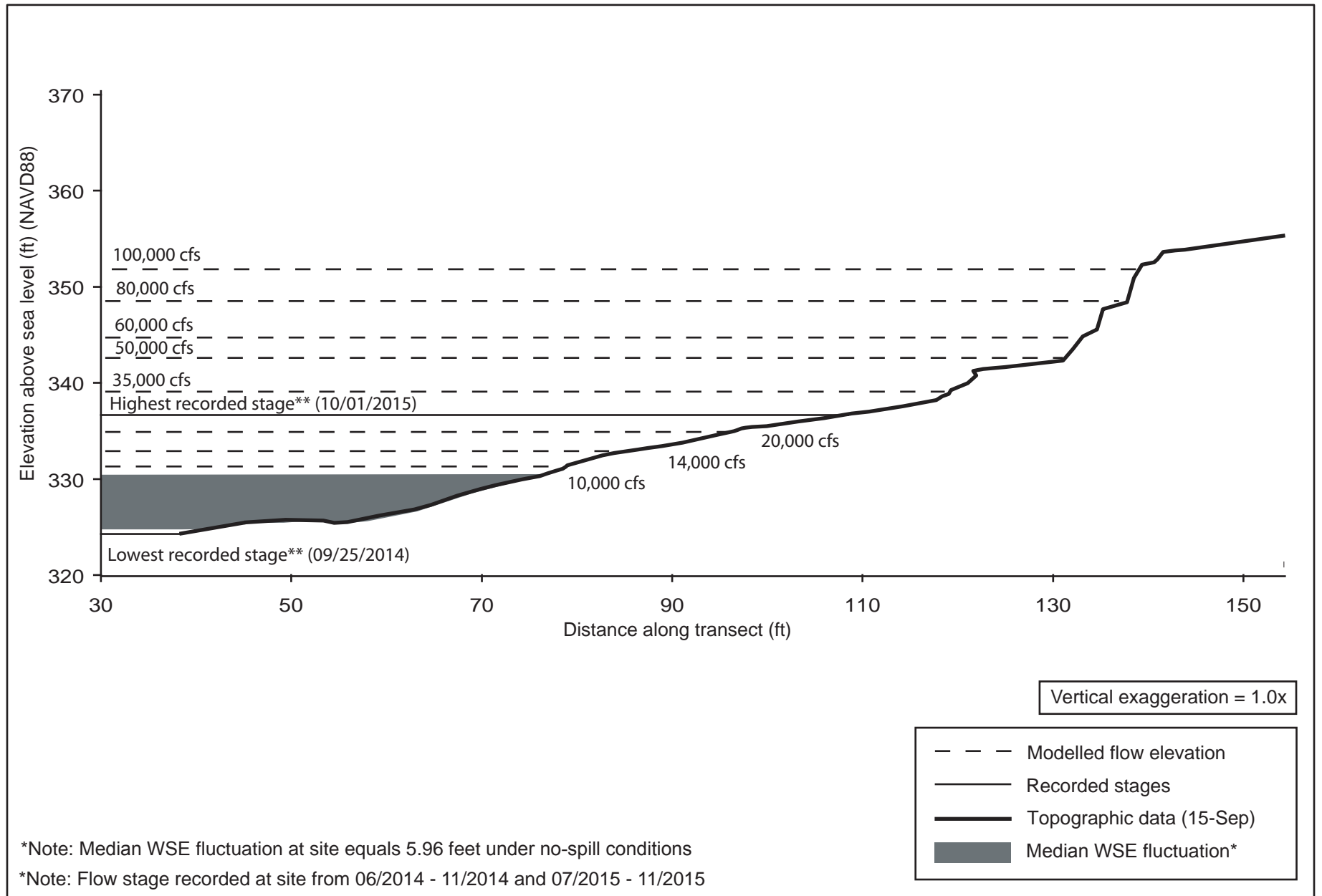
Site map for 02-WR01 (Hartford Site).

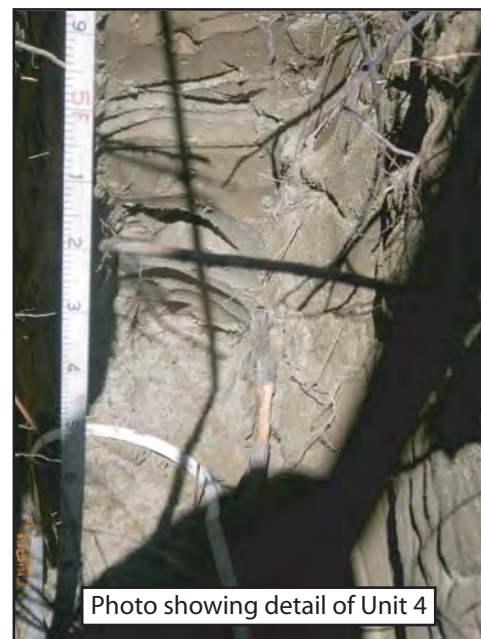
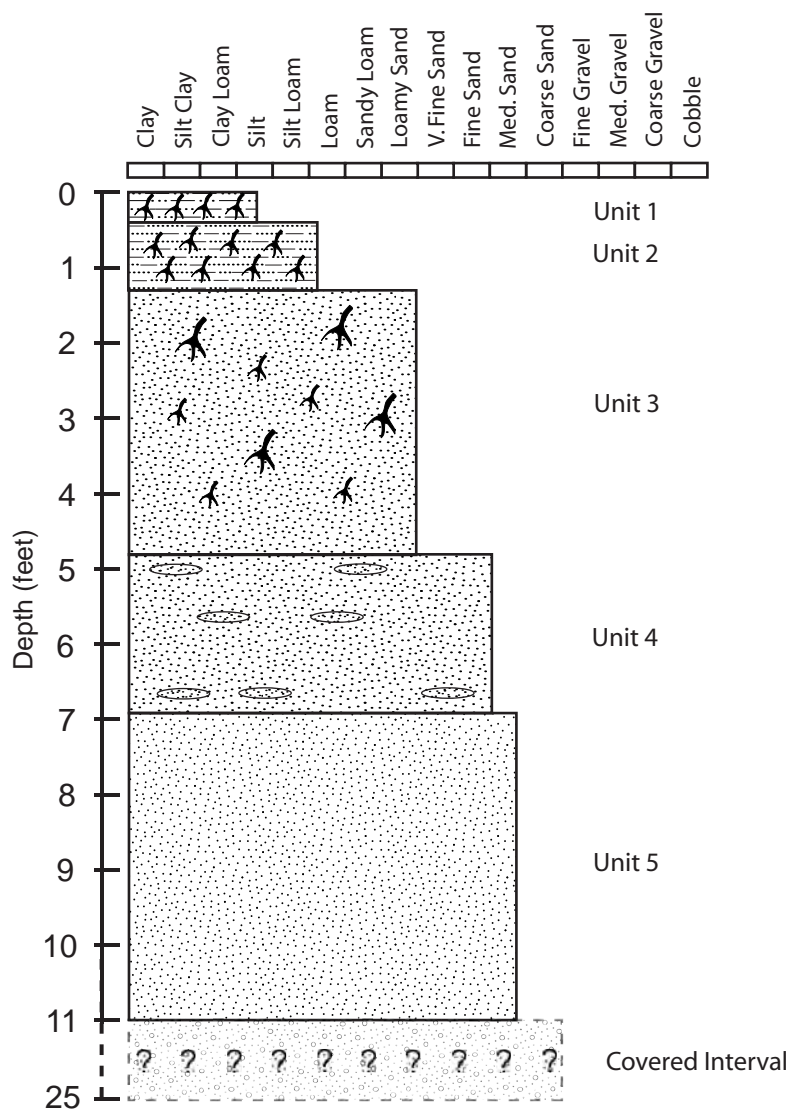


Erosion monitoring transect for 02-WR01 (Hartford Site).

Time period	Observed changes
Summary	No retreat at top or toe of bank and no observed changes along upper bank (terrace riser). Sand removed from wide beach face during winter of 2014 and 2015. Degradation of beach surface exhumes coarse gravel on beach.
Initial survey (Nov-13)	Noted low scarp on upper portion of wide beach that slopes up to steeper terrace riser composed of vegetated topple blocks.
November 2013 to May 2014	Entire beach surface has degraded as sand has been removed from the site. Two low notches cut into the beach face.
May to July 2014	No observed changes.
July to September 2014	No observed changes.
September to November 2014	No observed changes.
November 2014 to May 2015	Degradation of middle and higher beach surface. Upper notch has increased in height and cut back further towards toe of upper bank.
May to July 2015	No observed changes.
July to September 2015	No observed changes.

Narrative of observed changes at 02-WR01 (Hartford Site).





Top elevation = 353.6 feet above sea level (NAVD88)

Unit 1: [0.4 ft thick] (5Y 2.5/2 dry, 5Y 2.5/1 wet), small weak granular, mostly silt with some sand and organics and abundant small roots; sharp contact with Unit 2.

Unit 2: [0.9 ft thick] (2.5Y 4/4 dry, 2.5Y 3/3 wet), medium weak granular, silty fine sand with abundant small roots, orange in color; gradational contact with Unit 3.

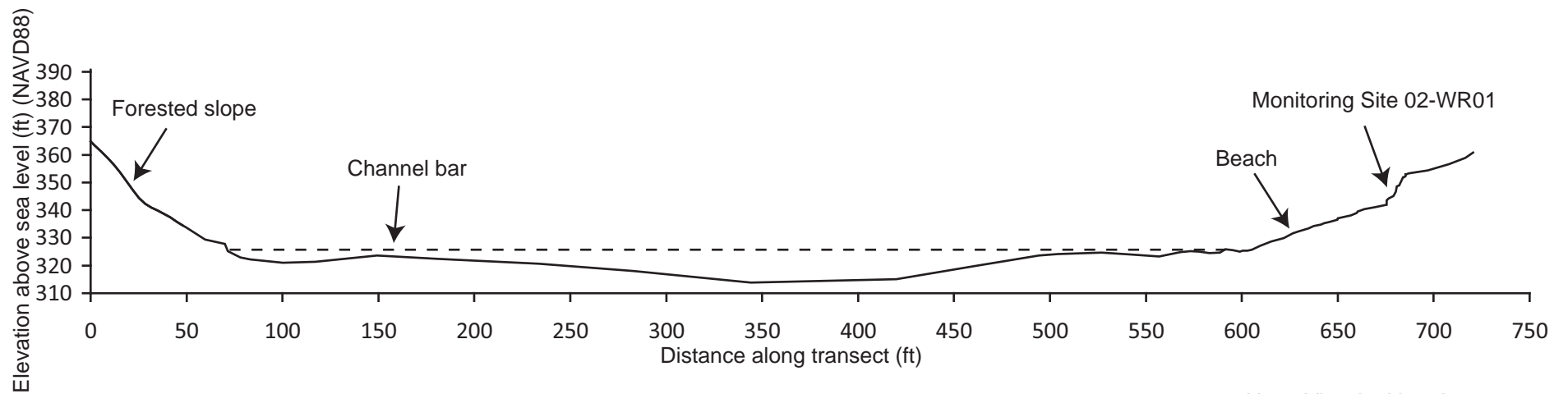
Unit 3: [3.5 ft thick] (2.5Y 5/4 dry, 2.5Y 4/3 wet), medium blocky weak granular, mostly fine sand with some silt and less abundant roots some large roots; gradational contact with Unit 4.

Unit 4: [2.1 ft thick] (2.5Y 5/3 dry, 2.5Y 4/2 wet), weak small platy, fine to medium sand, small lenses lighter in color present.

Unit 5: [4.1 ft thick] (5Y 5/3 dry, 2.5Y 4/2 wet), very weak medium platy, well-sorted medium sand, light tan color.

Covered Interval: [14 ft minimum] Sand and gravel beach deposits.

Stratigraphic column of 02-WR01 (Hartford Site).



Note: View looking downstream

Vertical exaggeration = 1.4x

- - - Water surface at time of survey
— Topographic data (14-Sept)

Full river transect for 02-WR01 (Hartford Site).

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-WR01	1	43.6644083	-72.3074067	116	Straight on view of beach from TOB
02-WR01	2	43.6644150	-72.3071083	314	Portrait view of upper bank from beach
02-WR01	3	43.6643483	-72.3072300	312	Close up of bank toe / upper beach from beach on transect
02-WR01	4	43.6643133	-72.3072867	352	US view of mid beach
02-WR01	5	43.6644000	-72.3071617	271	Bank DS of XS from beach on Transect
02-WR01	6	43.6643933	-72.3073517	289	DS view beach closeup
02-WR01	7	43.6643683	-72.3071067	336	US view from beach on Transect

Ground photograph locations at 02-WR01 (Hartford Site).



Photo 1: 2013-11-11 09:56



Photo 1: 2014-05-30 10:22



Photo 1: 2014-07-17 10:31



Photo 1: 2014-11-18 14:40



Photo 1: 2015-05-13 15:04



Photo 1: 2015-07-08 10:35



Photo 1: 2015-09-21 15:30



Photo 1: 2015-11-24 13:11



Photo 2: 2013-11-11 09:58



Photo 2: 2014-05-30 10:56



Photo 2: 2014-09-12 10:26



Photo 2: 2014-11-18 14:43



Photo 2: 2015-05-13 15:11



Photo 2: 2015-07-08 10:36



Photo 2: 2015-09-21 15:36



Photo 2: 2015-11-24 12:53



Photo 3: 2014-05-30 10:57



Photo 3: 2014-09-12 10:25



Photo 3: 2015-05-13 15:14



Photo 3: 2015-09-21 15:36



Photo 3: 2015-07-08 10:37



Photo 3: 2015-11-24 12:52



Photo 4: 2013-11-11 10:00



Photo 4: 2014-07-17 10:34



Photo 4: 2015-05-13 15:12



Photo 4: 2015-09-21 15:37



Photo 4: 2015-07-08 10:38



Photo 4: 2015-11-24 12:50



Photo 5: 2013-11-11 10:00



Photo 5: 2014-09-12 10:26



Photo 5: 2014-05-30 10:57



Photo 5: 2014-11-18 14:46



Photo 5: 2015-05-13 15:13



Photo 5: 2015-07-08 10:39



Photo 5: 2015-09-21 15:38



Photo 5: 2015-11-24 12:50



Photo 6: 2013-11-11 09:59



Photo 6: 2014-07-17 10:32



Photo 6: 2014-11-18 14:44



Photo 6: 2015-05-13 15:10



Photo 6: 2015-07-08 10:40



Photo 6: 2015-09-21 15:41



Photo 6: 2015-11-24 12:54



Photo 7: 2014-05-30 10:57



Photo 7: 2014-09-12 10:26



Photo 7: 2014-11-18 14:45



Photo 7: 2015-05-13 15:16



Photo 7: 2015-09-21 15:41



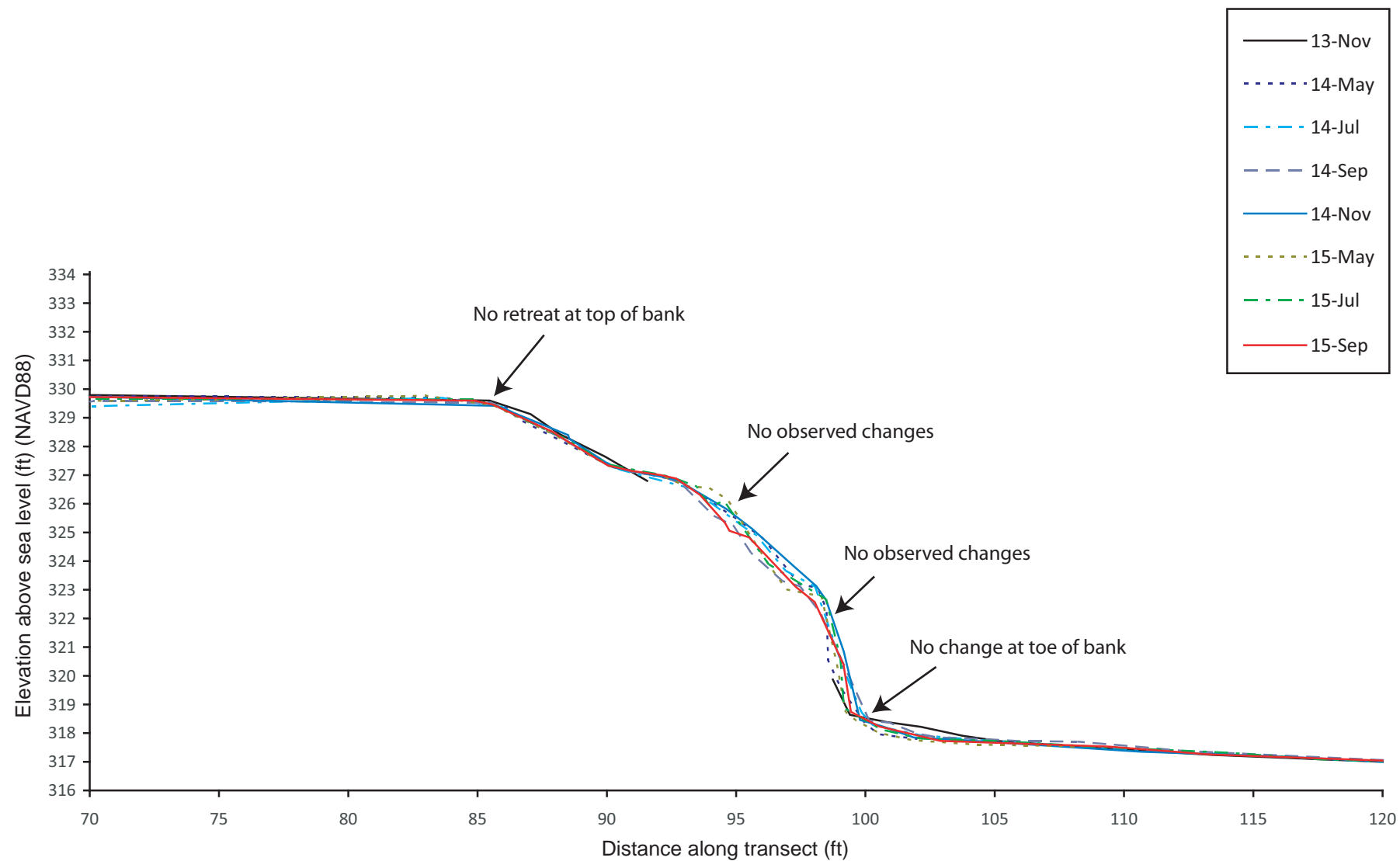
Photo 7: 2015-07-08 10:41



Photo 7: 2015-11-24 12:55



Site map for 02-WR05 (Edgewater Farm Site).



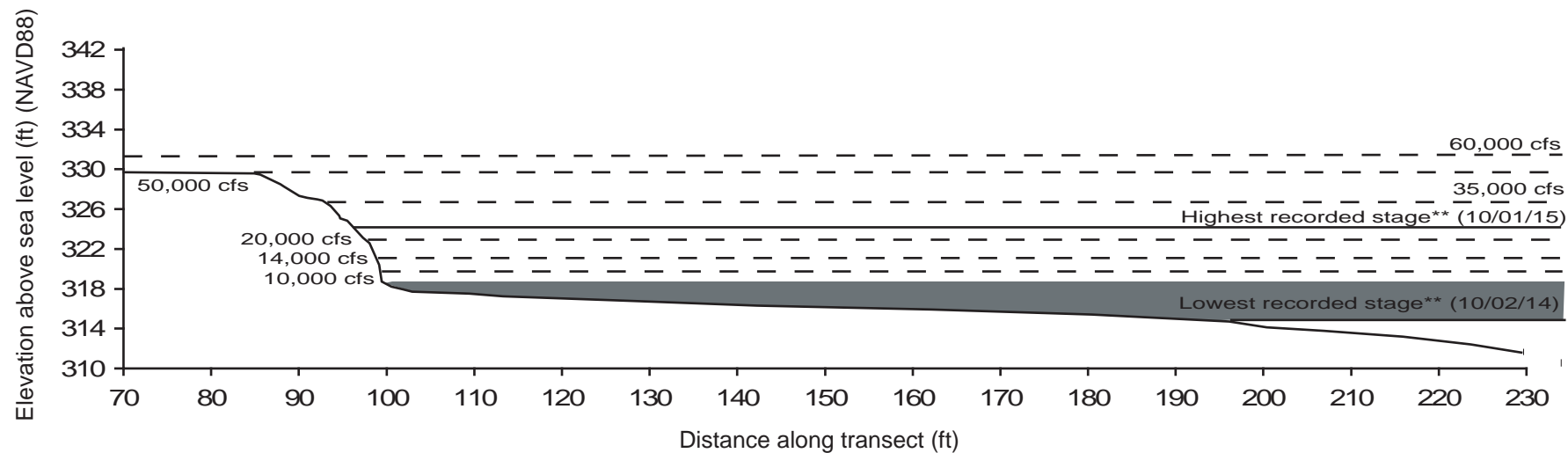
Note: View looking downstream

Vertical exaggeration = 1.1x

Erosion monitoring transects for 02-WR05 (Edgewater Farm Site).

Time period	Observed changes
Summary	No changes observed at site during study period, including no retreat at top of bank.
Initial survey (Nov-13)	Noted steep face on forested bank; piece of large woody debris in transect. Bank vegetated by a mix of shrubs and mature deciduous trees. Trees show ice scarring and exposed roots. Channel bed composed of coarse gravel.
November 2013 to May 2014	No observed changes.
May to July 2014	No observed changes.
July to September 2014	No observed changes.
September to November 2014	No observed changes.
November 2014 to May 2015	No observed changes.
May to July 2015	No observed changes.
July to September 2015	No observed changes.

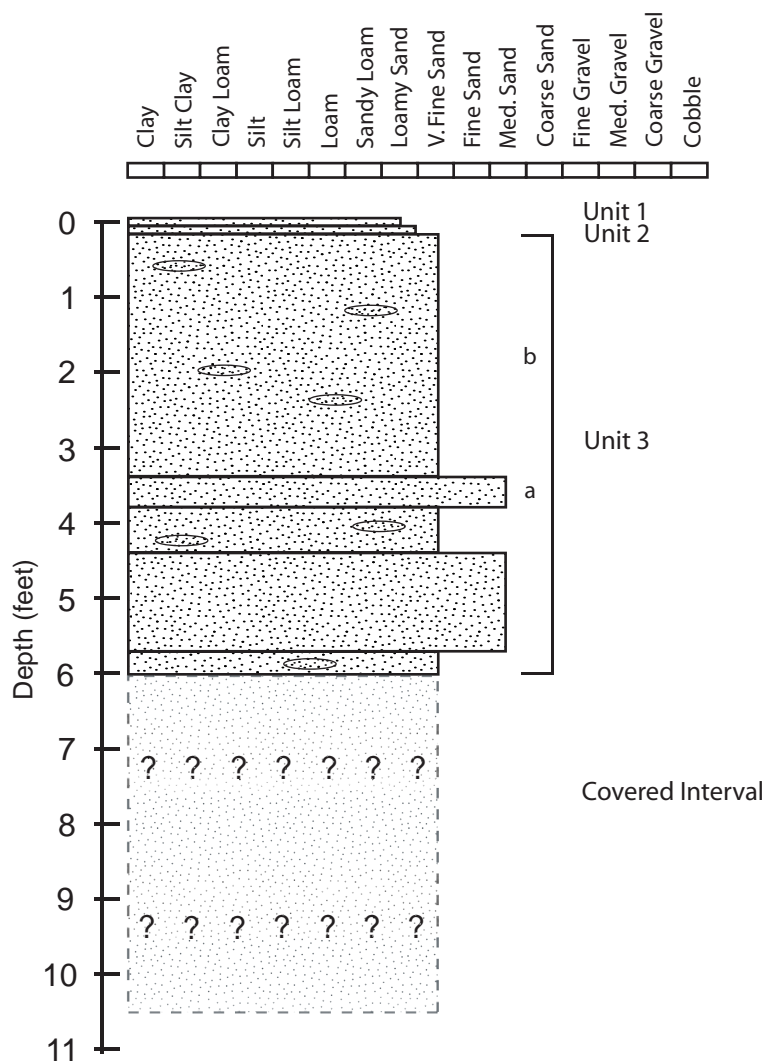
Narrative of observed changes at 02-WR05 (Edgewater Farm Site).



*Note: Median WSE fluctuation at site equals 5.2 feet under no-spill conditions

**Note: Flow stage recorded at site from 06/2014 - 11/2014 and 07/2015 - 11/2015

Selected river stages at 02-WR05 (Edgewater Farm Site).



Top elevation = 329.4 feet above sea level (NAVD88)

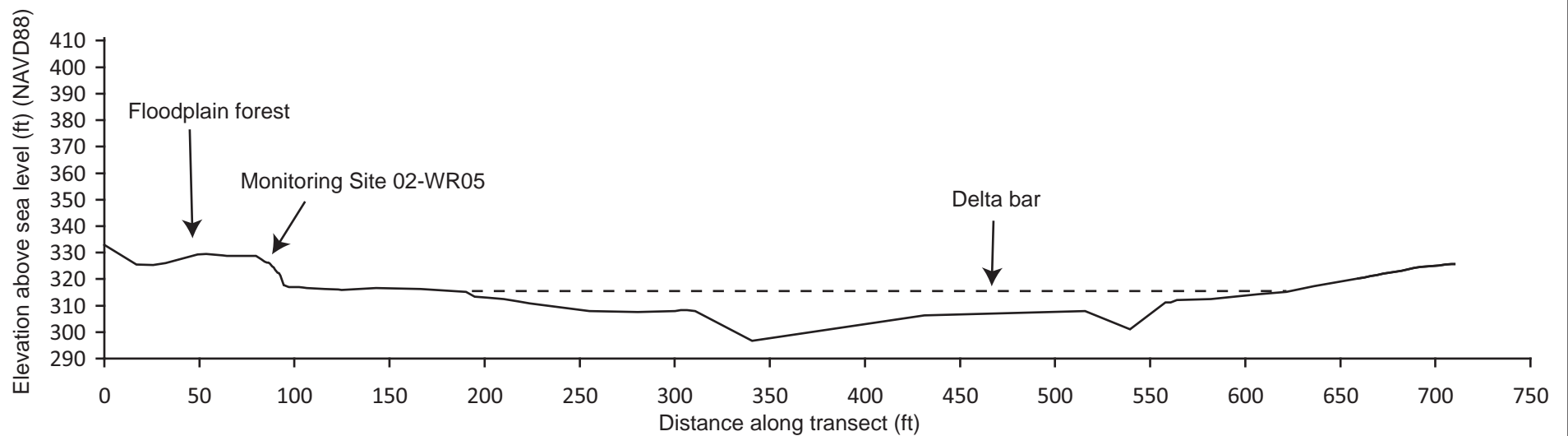
Unit 1: [0.1 ft thick] (2.5Y 3/1 dry, 5Y 2.5/1 wet), O Horizon, weak, small granular with organics.

Unit 2: [0.1 ft thick] (2.5Y 4/2 dry, 2.5Y 3/2 wet), weak, small blocky, fine unconsolidated sand with small amounts of silt and abundant roots, bioturbated soil.

Unit 3: [5.8 ft thick] Interbedded unit consisting of a) [0.4-1.3 ft thick] (2.5Y 4/1 dry, 2.5Y 3/2 wet) weak, small granular, lighter, medium sand with gradual and sharp contacts with b) [0.3-3.2 ft thick] (2.5Y 4/2 dry, 2.5Y 3/2 wet), fine silty sand, includes some lenses of medium sand.

Covered Interval: [4.5 ft thick] Presumed fine silty sand.

Stratigraphic column of 02-WR05 (Edgewater Farm Site).



Note: View looking downstream

Vertical exaggeration = 1.4x

- - - Water surface at time of survey
— Topographic data (14-Sep)

Full river transect for 02-WR05 (Edgewater Farm Site).

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-WR05	1	43.5897033	-72.3454183	141	Straight on view of transect from gravel bar
02-WR05	2	43.5897183	-72.3454333	187	DS view from gravel bar
02-WR05	3	43.5897183	-72.3454367	80	US view from gravel bar
02-WR05	4	43.5896200	-72.3452800	194	DS view lower bank
02-WR05	5	43.5897600	-72.3451317	75	US view lower bank
02-WR05	6	43.5895367	-72.3451600	139	Straight on view toe of bank at transect
02-WR05	7	43.5897033	-72.3454183	310	Looking down on transect from TOB

Ground photograph locations at 02-WR05 (Edgewater Farm Site).



Photo 1: 2013-11-11 14:15



Photo 1: 2014-07-17 12:50



Photo 1: 2014-09-12 15:11



Photo 1: 2014-11-10 16:31



Photo 1: 2015-07-08 12:23



Photo 1: 2015-09-21 12:04



Photo 1: 2015-11-24 13:55



Photo 2: 2013-11-11 14:15



Photo 2: 2014-07-17 12:51



Photo 2: 2015-07-08 12:24



Photo 2: 2015-09-21 12:04



Photo 2: 2015-11-24 13:54



Photo 3: 2013-11-11 14:15



Photo 3: 2014-07-17 12:51



Photo 3: 2015-07-08 12:26



Photo 3: 2015-09-21 12:05



Photo 3: 2015-11-24 13:54



Photo 4: 2014-09-12 15:13



Photo 4: 2014-11-10 16:32



Photo 4: 2015-07-08 12:28



Photo 4: 2015-09-21 12:06



Photo 4: 2015-11-24 13:56



Photo 5: 2014-09-12 15:14



Photo 5: 2014-11-10 16:32



Photo 5: 2015-07-08 12:28



Photo 5: 2015-09-21 12:07



Photo 5: 2015-11-24 13:57



Photo 6: 2013-11-11 14:24



Photo 6: 2014-07-17 13:00



Photo 6: 2014-09-12 15:12



Photo 6: 2014-11-10 16:32



Photo 6: 2015-07-08 12:29



Photo 6: 2015-09-21 12:08



Photo 6: 2015-11-24 13:58



Photo 7: 2014-07-17 13:20

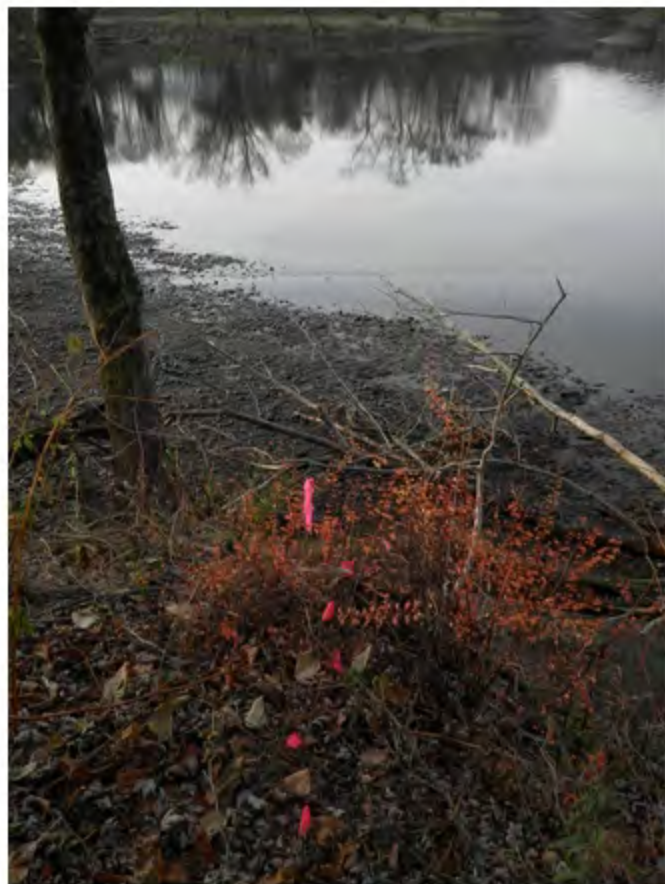


Photo 7: 2014-11-10 16:33



Photo 7: 2015-05-13 13:05



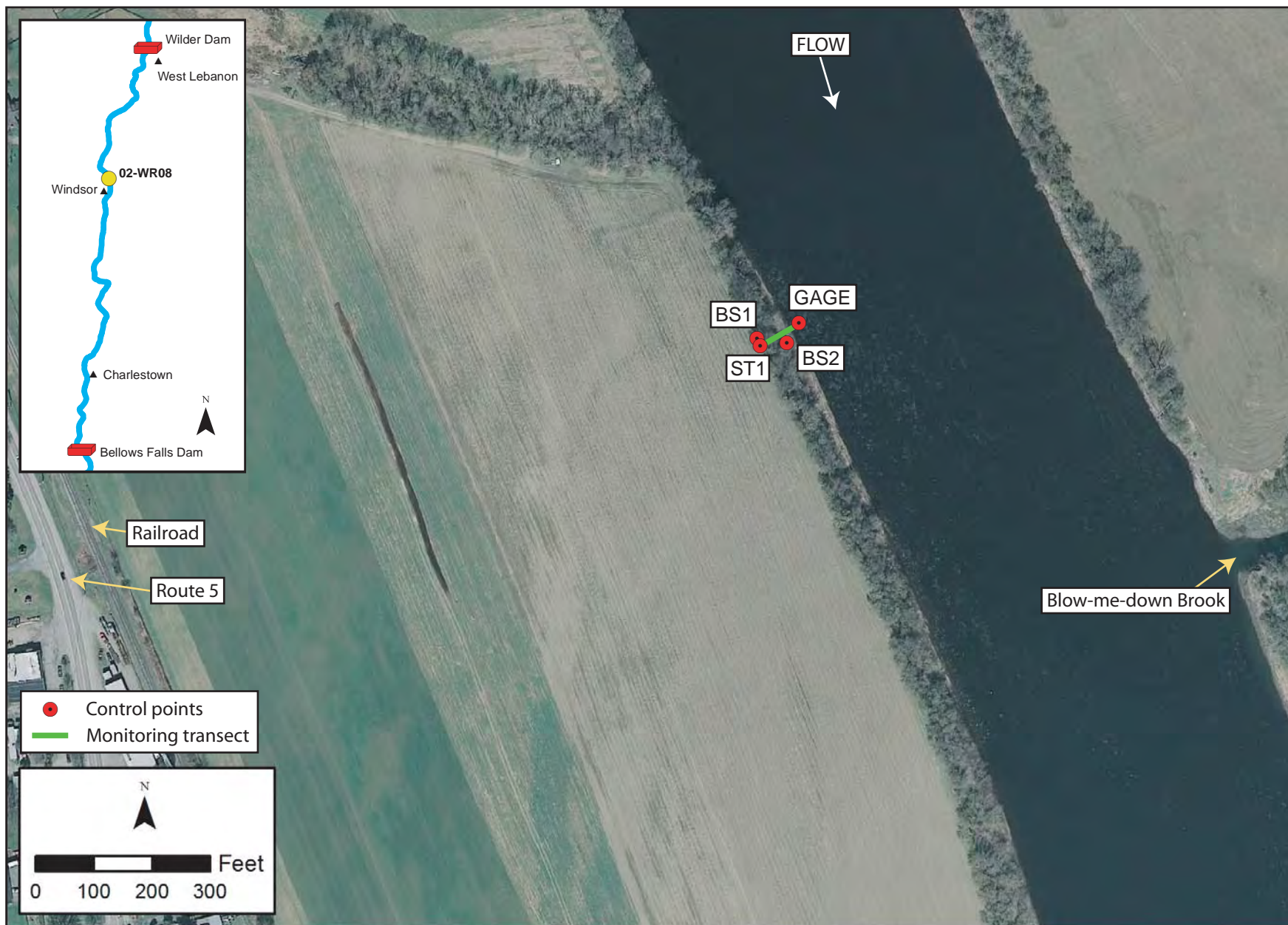
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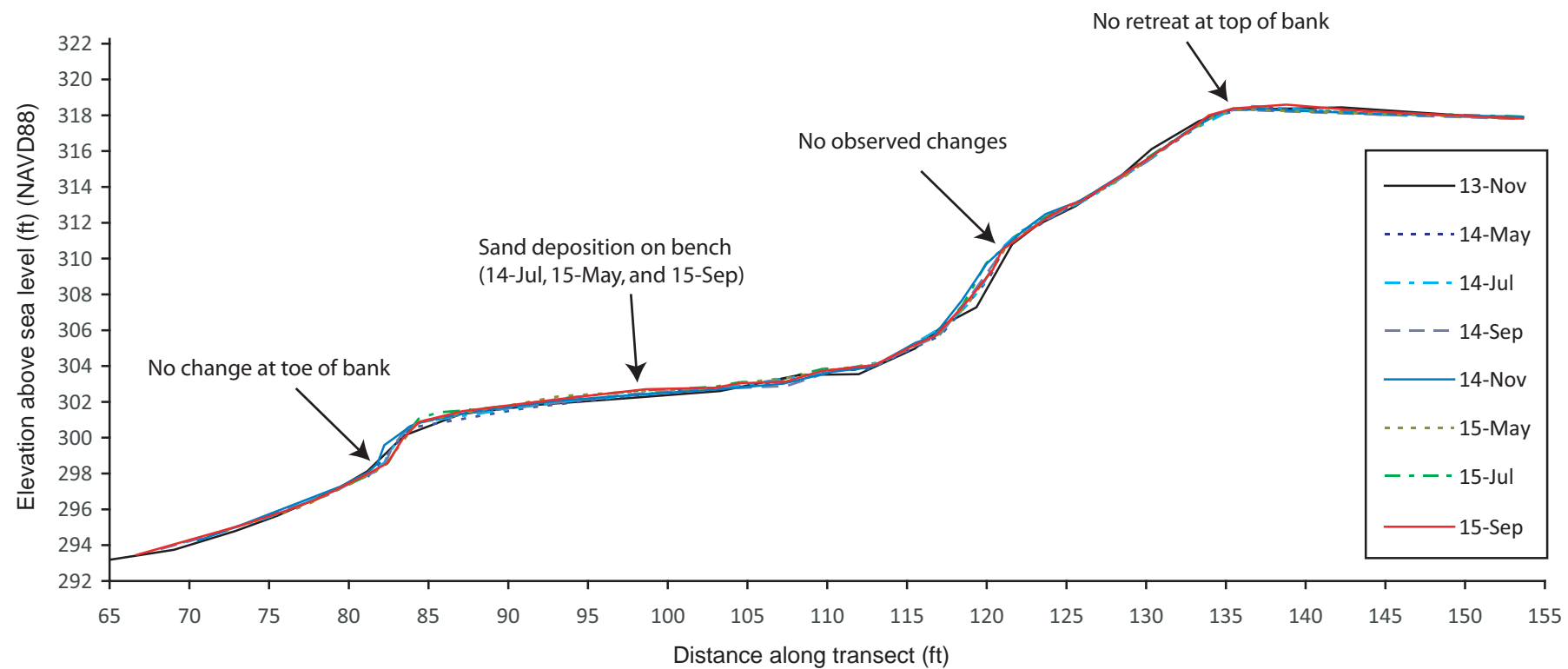
Photo 7: 2015-09-21 12:01



Photo 7: 2015-11-24 13:52



Site map for 02-WR08 (Great River Farm Site).



Note: View looking downstream
Vertical exaggeration = 1.1x

Erosion monitoring transect for 02-WR08 (Great River Farm Site).

Time period	Observed changes
Summary	No retreat at top of bank. Change limited to sand and silt deposition on grassy bench.
Initial survey (Nov-13)	Site consists of well-vegetated grassy bench and steep terrace riser. Channel bed composed of coarse gravel.
November 2013 to May 2014	No observed changes.
May to July 2014	Minor sand and silt deposition on grassy bench.
July to September 2014	No observed changes.
September to November 2014	No observed changes.
November 2014 to May 2015	Sand and silt deposition on grassy bench. Existing log on bench has been buried by fresh deposition.
May to July 2015	No observed changes.
July to September 2015	Sand and silt deposition on grassy bench.

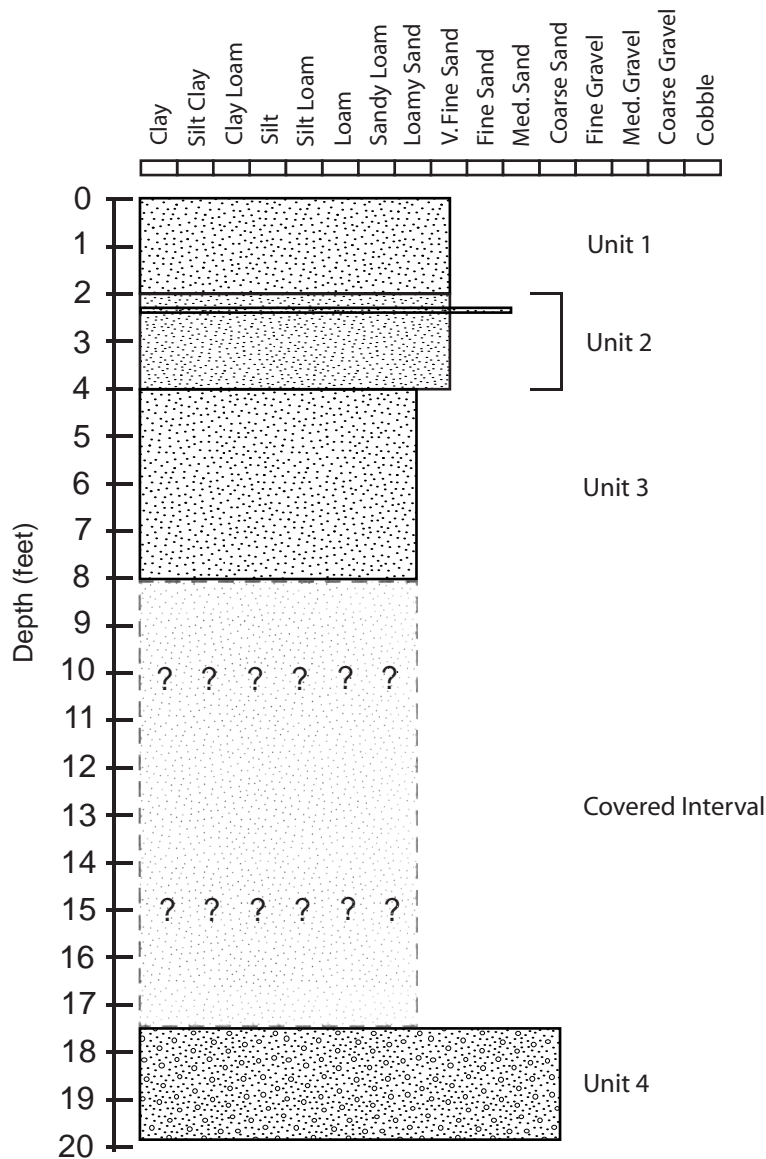
Narrative of observed changes at 02-WR08 (Great River Farm Site).



*Note: Median WSE fluctuation at site equals 4.6 feet under no-spill conditions

**Note: Flow stage recorded at site from 06/2014 - 11/2014 and 07/2015 - 11/2015

Selected river stages at 02-WR08 (Great River Farm Site).



Top elevation = 318.4 feet above sea level (NAVD88)

Unit 1: [2 ft thick] (2.5Y 4/4 dry, 2.5Y 3/3 wet), A/AB Horizon, weak, small granular, very fine sand with silt, gradual contact with Unit 2.

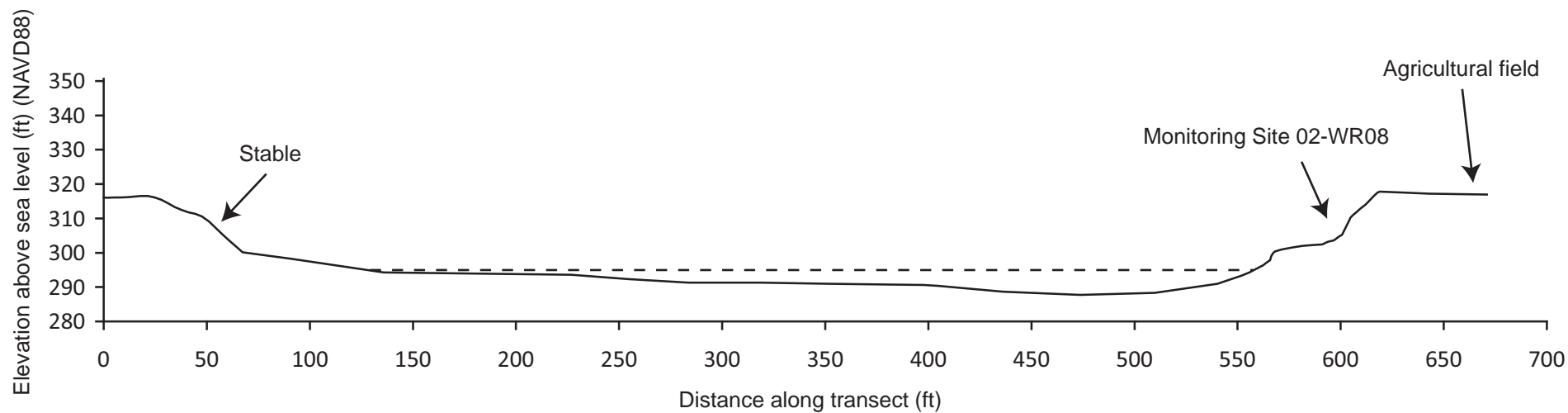
Unit 2: [2 ft thick] (5Y 5/3 dry, 5Y 3/2 wet), small very weak, platy, very fine sand with silt, coarser bleached sand lens at 2.8 ft.

Unit 3: [4 ft thick] (2.5Y 5/3 dry, 2.5Y 3/3 wet), small, granular medium, fine loamy sand.

Covered Interval: [9.5 ft thick] Presumed fine loamy sand.

Unit 4: [2.3 ft thick] (1.5YR 4/1 wet), coarse gravel to small cobble, sorted matrix of sandy loam.

Stratigraphic column of WR08 (Great River Farm Site).



Note: View looking downstream

Vertical exaggeration = 1.7x

- - - Water surface at time of survey
— Topographic data (14-Sep)

Full river transect for 02-WR08 (Great River Farm Site).

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-WR08	1	43.4954333	-72.3817133	224	Straight on view from end of transect
02-WR08	2	43.4954067	-72.3817817	289	US view toe of bank
02-WR08	3	43.4953783	-72.3818183	184	DS view toe of bank
02-WR08	4	43.4952633	-72.3820067	223	Portrait view straight on upper bank at transect

Ground photograph locations at 02-WR08 (Great River Farm Site).



Photo 1: 2013-11-11 11:34



Photo 1: 2014-09-19 09:29



Photo 1: 2015-05-19 14:12



Photo 1: 2015-07-07 16:24



Photo 1: 2015-09-21 14:09



Photo 1: 2015-11-24 14:52



Photo 2: 2013-11-11 11:35



Photo 2: 2014-07-17 16:06



Photo 2: 2014-09-19 09:30



Photo 2: 2015-05-19 14:13



Photo 2: 2015-09-21 14:10



Photo 2: 2015-07-07 16:25



Photo 2: 2015-11-24 14:53



Photo 3: 2013-11-11 11:35



Photo 3: 2014-07-17 16:05



Photo 3: 2014-09-19 09:30



Photo 3: 2015-05-19 14:15



Photo 3: 2015-09-21 14:10



Photo 3: 2015-07-07 16:25



Photo 3: 2015-11-24 14:54



Photo 4: 2014-05-20 16:52



Photo 4: 2014-07-17 16:15



Photo 4: 2014-09-19 09:31



Photo 4: 2014-11-10 14:32



Photo 4: 2015-05-19 14:17



Photo 4: 2015-07-07 16:27

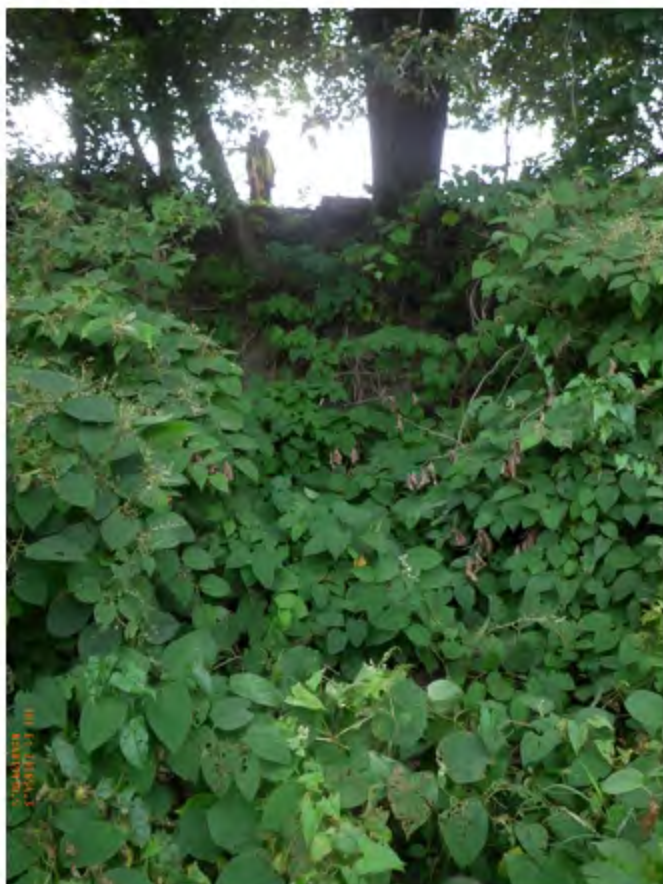


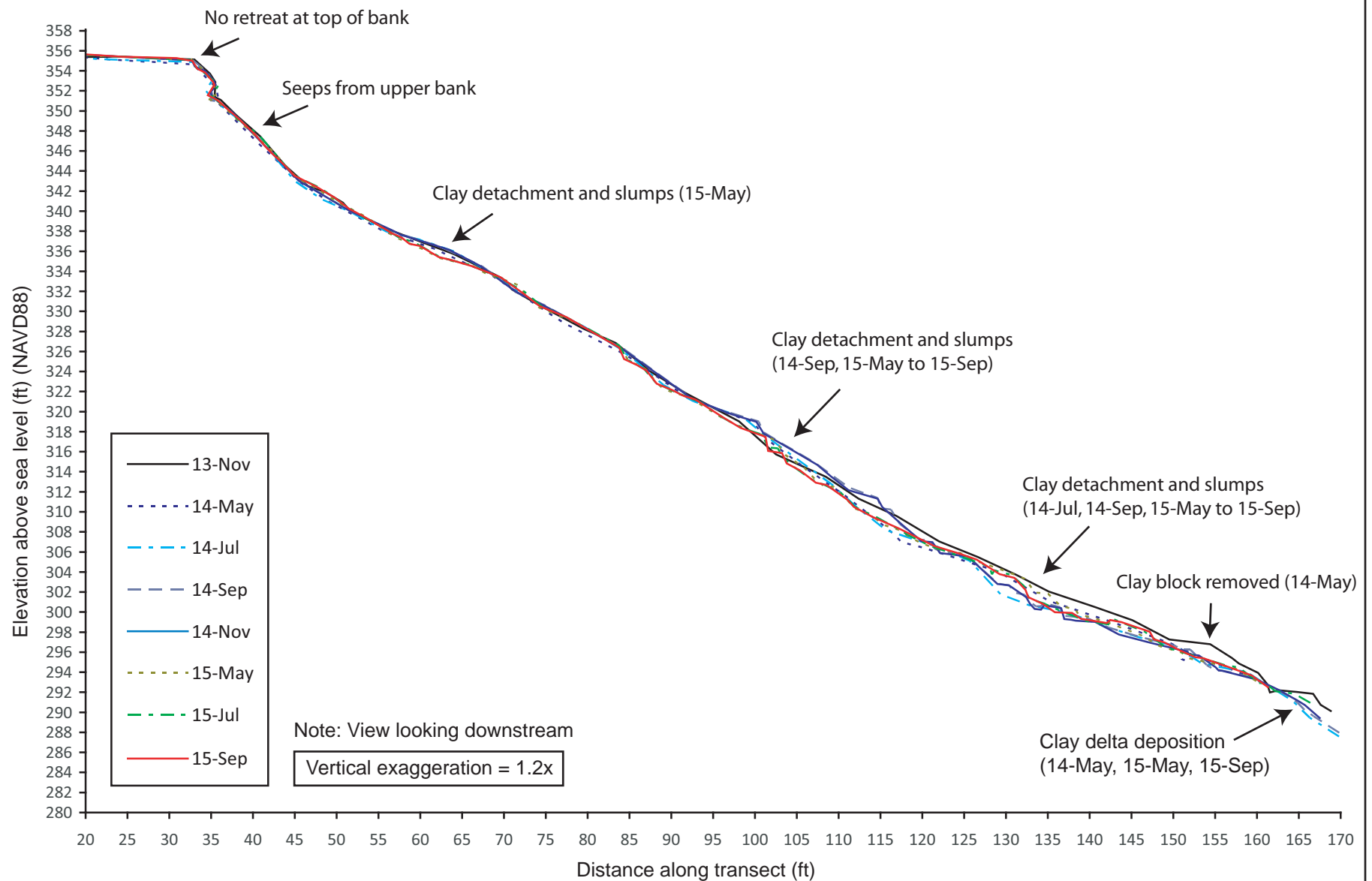
Photo 4: 2015-09-21 14:32



Photo 4: 2015-11-24 14:51



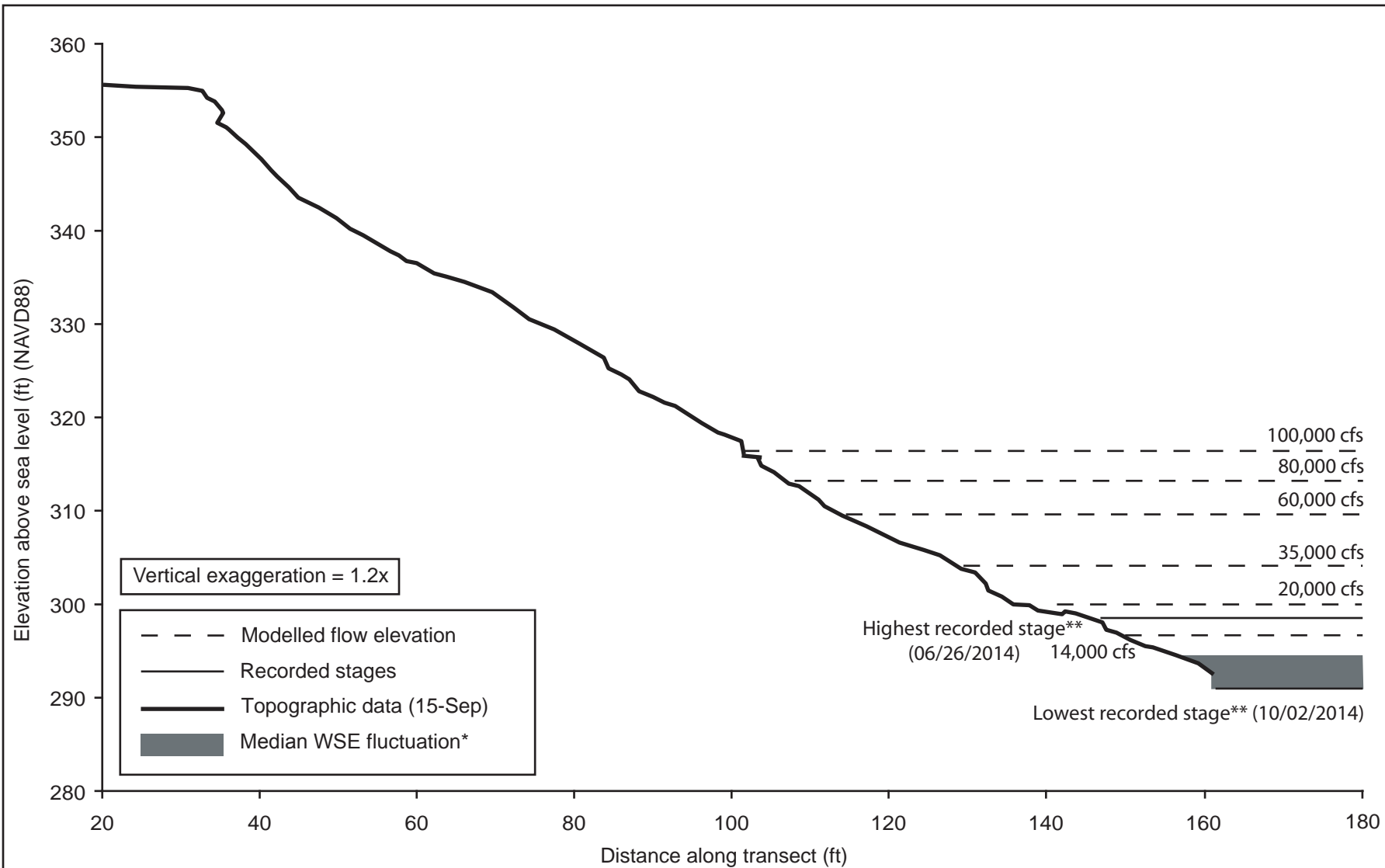
Site map for 02-WR09 (Hartwell Site).



Erosion monitoring transect for 02-WR09 (Hartwell Site).

Time period	Observed changes
Summary	No retreat at top of bank. Clay bank continues below normal low water elevation without distinct slope break, therefore no bank toe is defined. Detachment and slumping in varves observed throughout the study period. Seeps emanating from bank appear to be major erosion agent.
Initial survey (Nov-13)	High glaciolacustrine bank just downstream of Chase Island with exposed clay varves. Shows signs of previous slumping and detachment along transect.
November 2013 to May 2014	Seeps coming out of upper bank scarp have mobilized small fractured pieces of the glaciolacustrine varves. Vegetated clay block removed from lower bank, gullyng observed. Colluvial clay delta has formed at bank toe.
May to July 2014	Series of small clay detachments develop in lower bank.
July to September 2014	Gullies and tension cracks develop in lower and mid-bank. Clay detachments continue to develop in lower and mid-bank as clay moves downslope.
September to November 2014	No observed changes.
November 2014 to May 2015	Slumping and liquefaction of clays in upper bank. Rotation and downslope movement of clay blocks observed in all portions of transect as larger scarps develop accompanied by gullyng. Colluvial clay delta has formed at bank toe. Signs of freeze / thaw in exposed varves.
May to July 2015	Series of clay detachments develop in mid and lower bank.
July to September 2015	Series of clay detachments develop in mid and lower bank. Colluvial clay delta has prograded at bank toe.

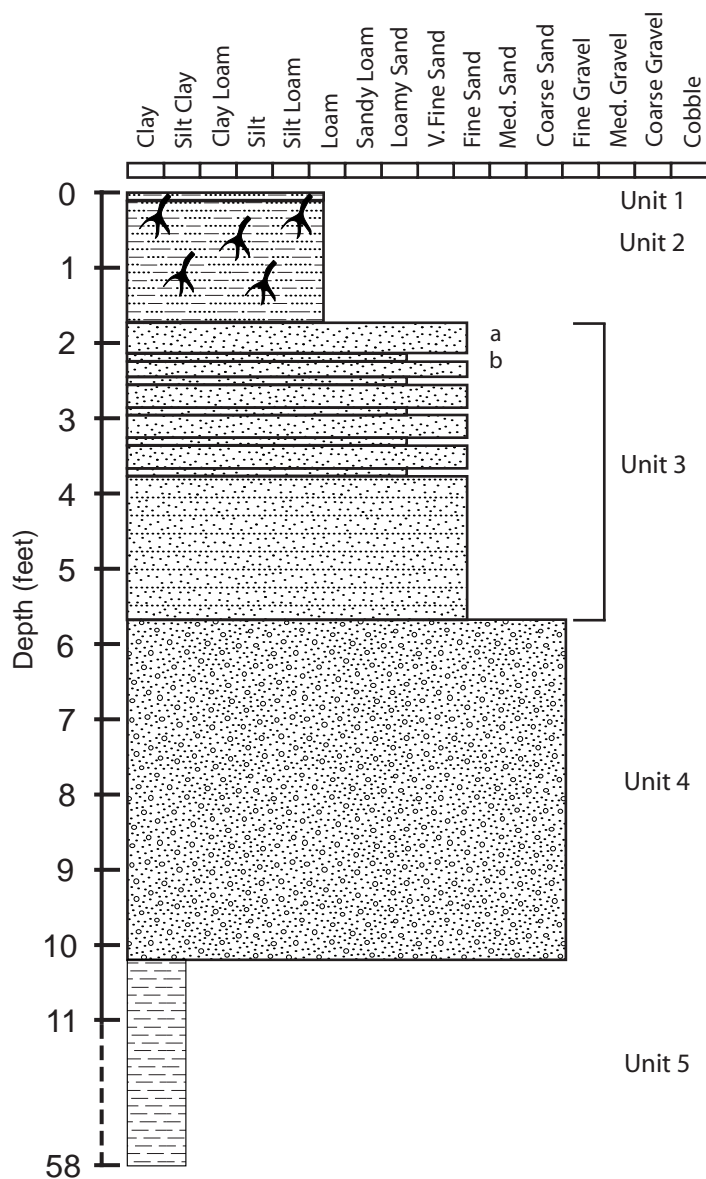
Narrative of observed changes at 02-WR09 (Hartwell Site).



*Note: Median WSE fluctuation at site equals 4.5 feet under no-spill conditions

**Note: Flow stage recorded at site from 06/2014 - 11/2014 and 07/2015 - 11/2015

Selected river stages at 02-WR09 (Hartwell Site).



Top elevation = 352.4 feet above sea level (NAVD88)

Unit 1: [0.1 ft thick] (2.5Y 5/2 dry, 2.5Y 3/2 wet), poorly developed soil, sandy silt with significant organic matter, no structure, held together by roots; sharp contact with Unit 2.

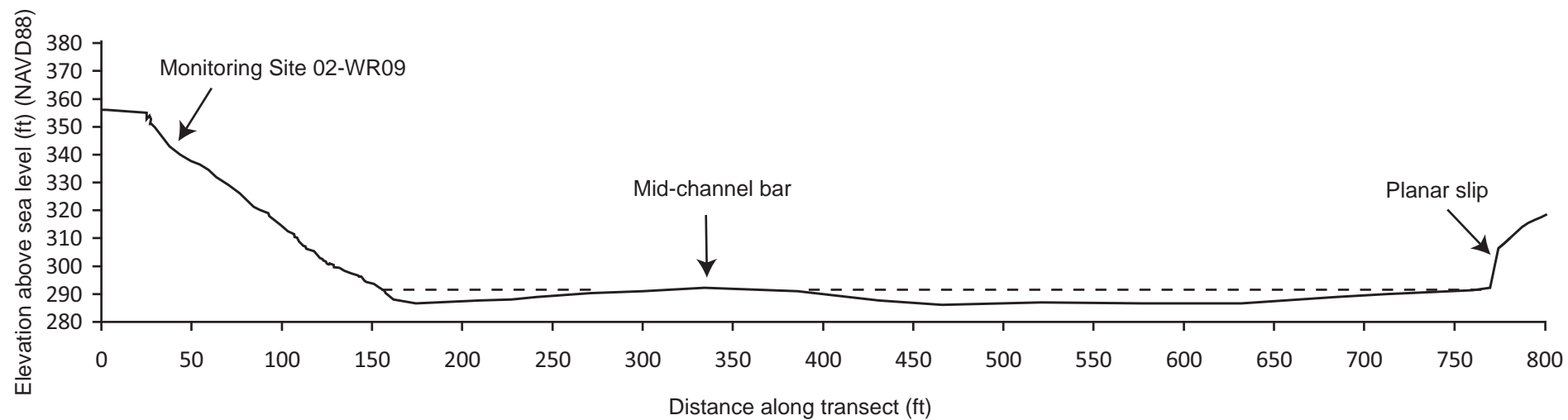
Unit 2: [1.6 ft thick] (2.5Y 5/4 dry, 2.5Y 4/3 wet), coarse moderate blocky, sandy silt with moderate roots, no stratification; gradational contact with Unit 3.

Unit 3: [3.9 ft thick] Interbedded unit consisting of: a) [0.3 ft thick] (2.5Y 5/3 dry, 2.5Y 4/3 wet), weak small granular, fine sand, and b) [0.1 ft thick] (10YR 4/4 dry, 10YR 3/3 wet), weak small granular, slightly silty fine sand, sharp contact with Unit 4.

Unit 4: [4.5 ft thick] (10YR 4/4 dry, 10YR 3/3 wet), loose-structured gravelly coarse sand, coarser at top of unit, contains large gravel clasts 0.15 ft to 0.3 ft; sharp contact with Unit 5 at base of steep upper scarp-presume seeps coming out here.

Unit 5: [48 ft thick] (Gley 2 6/10BG), glaciolacustrine clay varves, representing annual laminations, grey.

Stratigraphic column of 02-WR09 (Hartwell Site).



Note: View looking downstream

Vertical exaggeration = 1.5x

- - - Water surface at time of survey

— Topographic data (14-Sep)

Full river transect for 02-WR09 (Hartwell Site).

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-WR09	1	43.4611850	-72.3896267	111	Close up of bank toe/ lower bench
02-WR09	2	43.4611867	-72.3896117	180	DS view lower bank from end of transect
02-WR09	3	43.4612033	-72.3896033	42	US view lower bank from end of transect
02-WR09	4	43.4611850	-72.3896117	104	Straight on overview of transect from toe of bank
02-WR09	5	43.4611600	-72.3892300	310	From the top of bank looking down at transect
02-WR09	6	43.4611717	-72.3893633	121	View of upper bank from mid bank

Ground photograph locations at 02-WR09 (Hartwell Site).



Photo 1: 2013-11-19 10:07



Photo 1: 2014-05-20 13:46



Photo 1: 2014-07-18 09:39



Photo 1: 2015-05-07 15:09



Photo 1: 2015-07-07 14:31



Photo 1: 2015-09-14 15:13



Photo 1: 2015-11-20 13:05



Photo 2: 2013-11-19 10:07



Photo 2: 2014-07-18 09:39



Photo 2: 2014-05-20 13:46



Photo 2: 2014-11-11 13:25



Photo 2: 2015-05-07 15:10



Photo 2: 2015-07-07 14:29



Photo 2: 2015-09-14 15:14

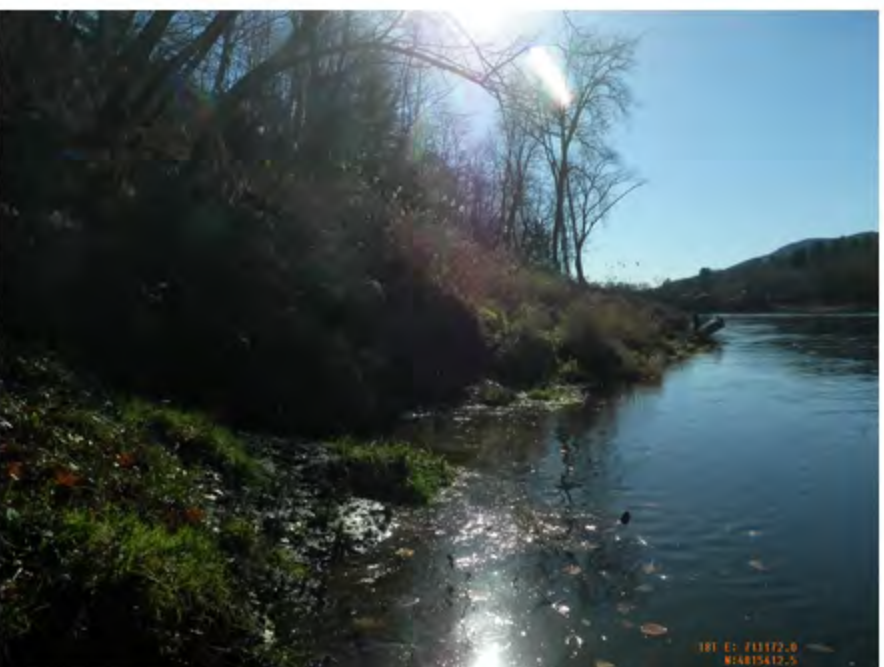


Photo 2: 2015-11-20 13:05



Photo 3: 2013-11-19 10:07



Photo 3: 2014-09-19 13:58



Photo 3: 2014-05-20 13:46



Photo 3: 2014-11-11 13:26



Photo 3: 2015-05-07 15:13



Photo 3: 2015-09-14 15:16



Photo 3: 2015-07-07 14:28



Photo 3: 2015-11-20 13:08



Photo 4: 2013-11-19 10:07



Photo 4: 2014-05-20 13:47



Photo 4: 2014-11-11 13:26



Photo 4: 2015-05-07 15:14



Photo 4: 2015-09-14 15:17



Photo 4: 2015-07-07 14:25



Photo 4: 2015-11-20 13:07



Photo 5: 2013-11-19 11:00



Photo 5: 2014-05-20 13:33



Photo 5: 2014-07-18 10:30



Photo 5: 2014-11-11 14:06



Photo 5: 2015-05-07 14:58



Photo 5: 2015-07-07 14:16



Photo 5: 2015-09-14 15:22



Photo 5: 2015-11-20 13:15



Photo 6: 2014-05-20 13:49



Photo 6: 2014-09-19 14:02



Photo 6: 2015-05-07 15:04



Photo 6: 2015-09-14 15:21



Photo 6: 2015-11-20 13:11