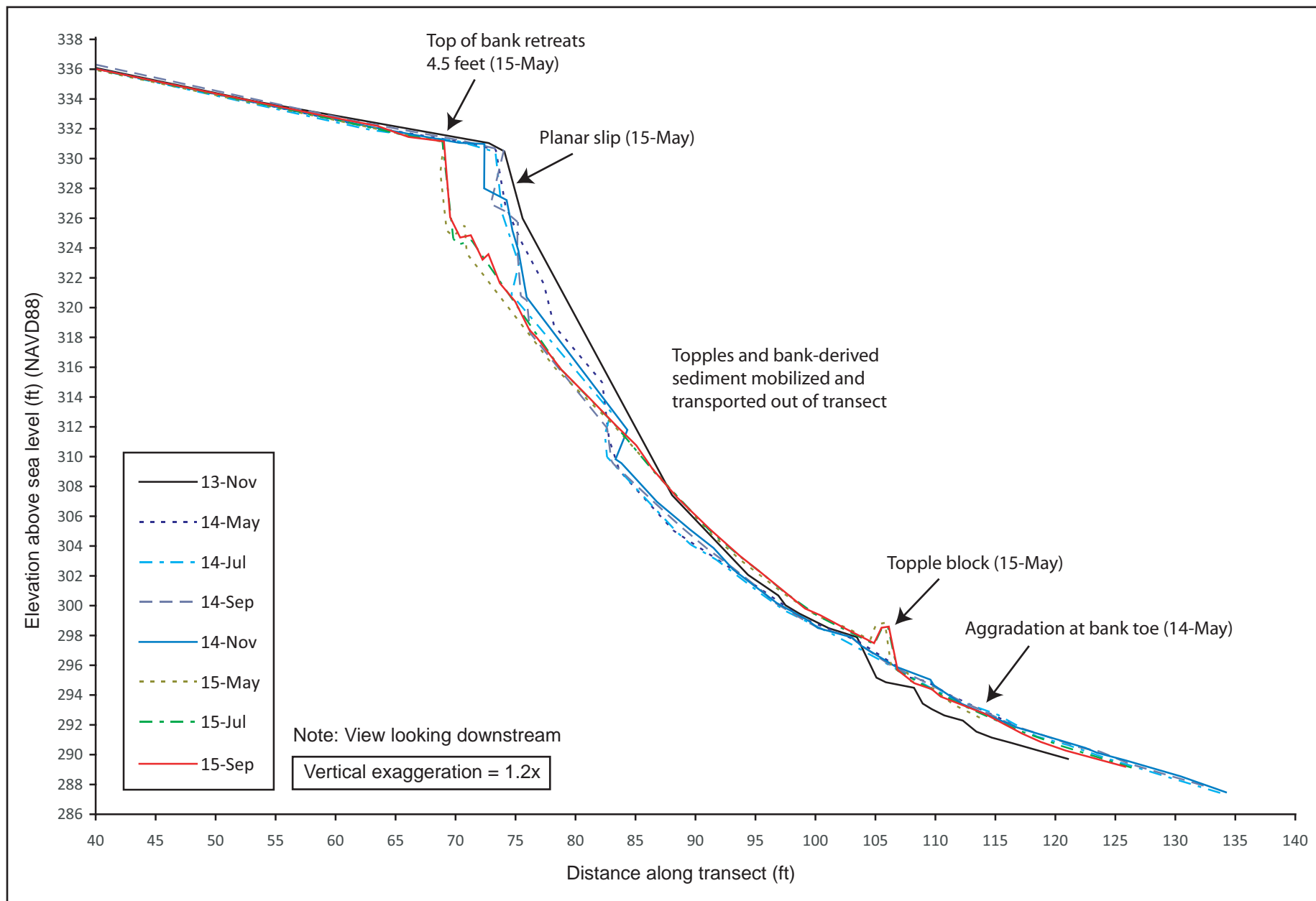




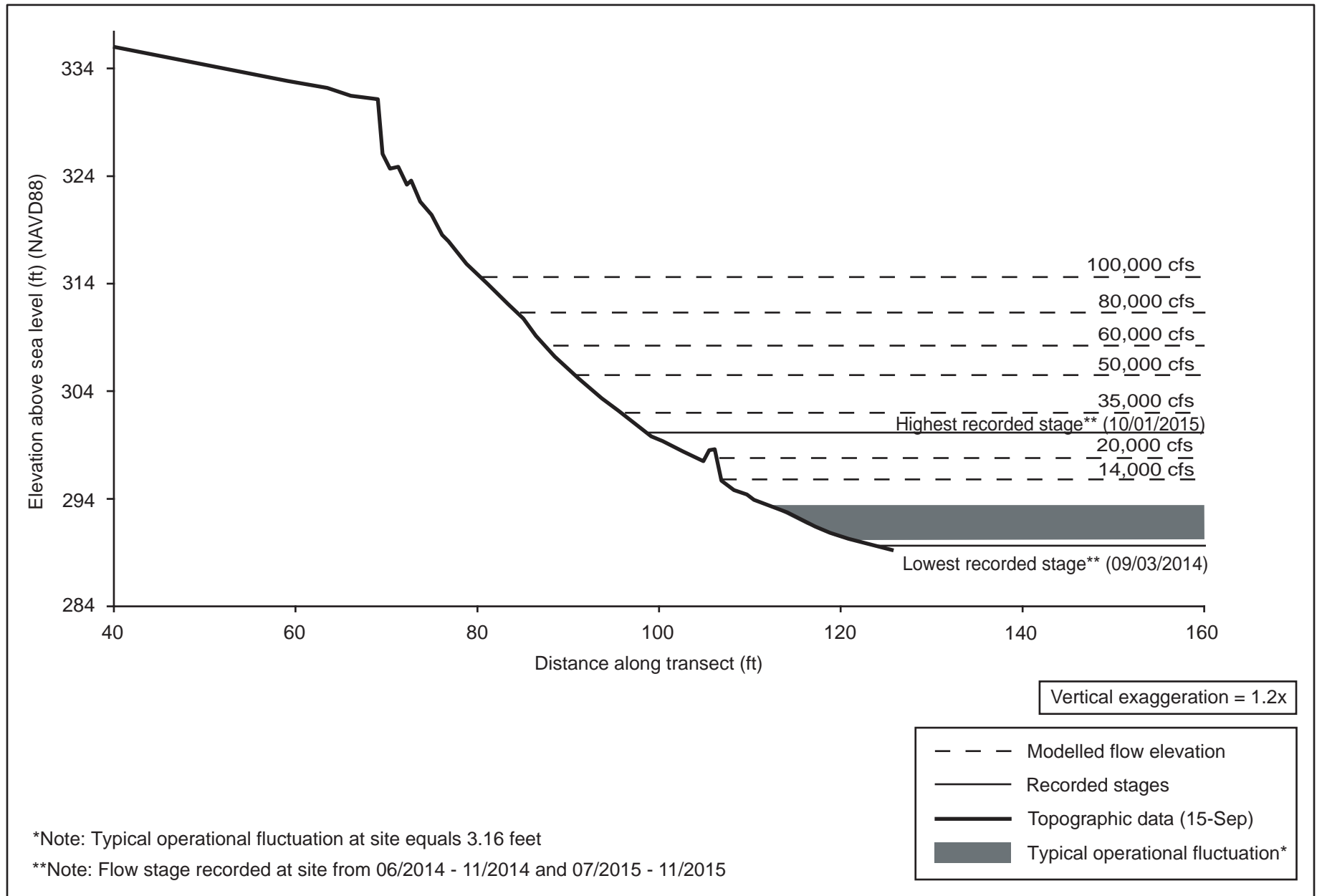
Site map for 02-B01 (Lipfert Site).



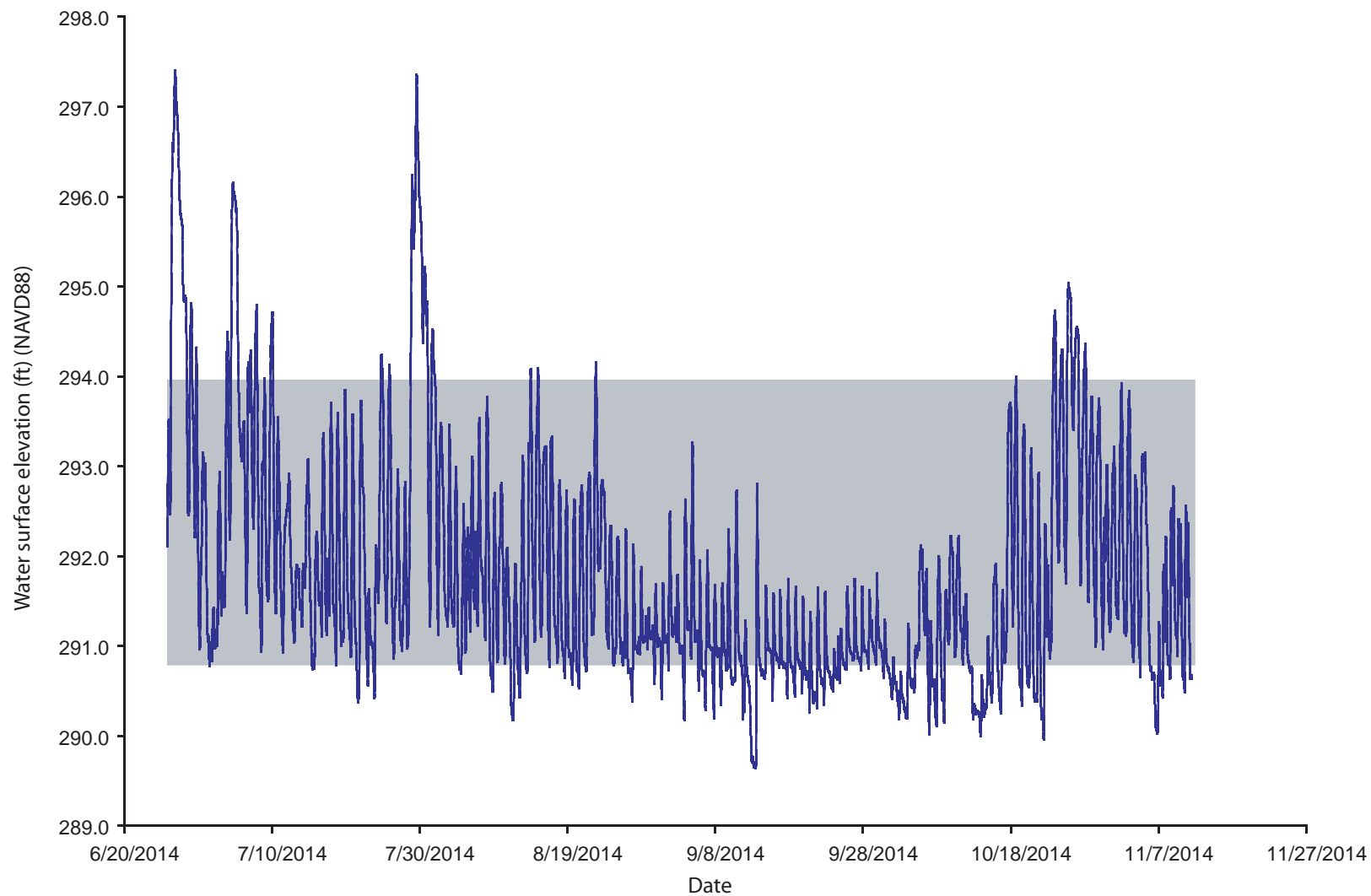
Erosion monitoring transect for 02-B01 (Lipfert Site).

Time period	Observed changes
Summary	Planar slip failure at top of bank with 4.5 feet of bank retreat between November 2014 and May 2015. Colluvial sediment has moved down slope as topple blocks and grain flows with some aggradation along the bank toe.
Initial survey (Nov-13)	Noted topple blocks on lower and mid-bank and near vertical scarp at upper bank.
November 2013 to May 2014	Planar slip at upper bank. Top of bank has not retreated, but sediment has fallen from upper scarp. Topple blocks have been removed from the mid-bank. Alluvial sediment has been deposited along the lower bank, yielding 2 ft. of accretion at the bank toe.
May to July 2014	Additional material has been lost from upper bank. No changes in lower or mid-bank.
July to September 2014	No observed changes.
September to November 2014	No observed changes.
November 2014 to May 2015	Planar slip at upper bank. Top of bank has retreated 4.5 ft. Topple blocks from top of bank deposited on lower and mid-bank. Sediment has moved downslope by grainflow along mid-bank.
May to July 2015	No observed changes.
July to September 2015	No observed changes.

Narrative of observed changes at 02-B01 (Lipfert Site).



Selected river stages at 02-B01 (Lipfert Site).

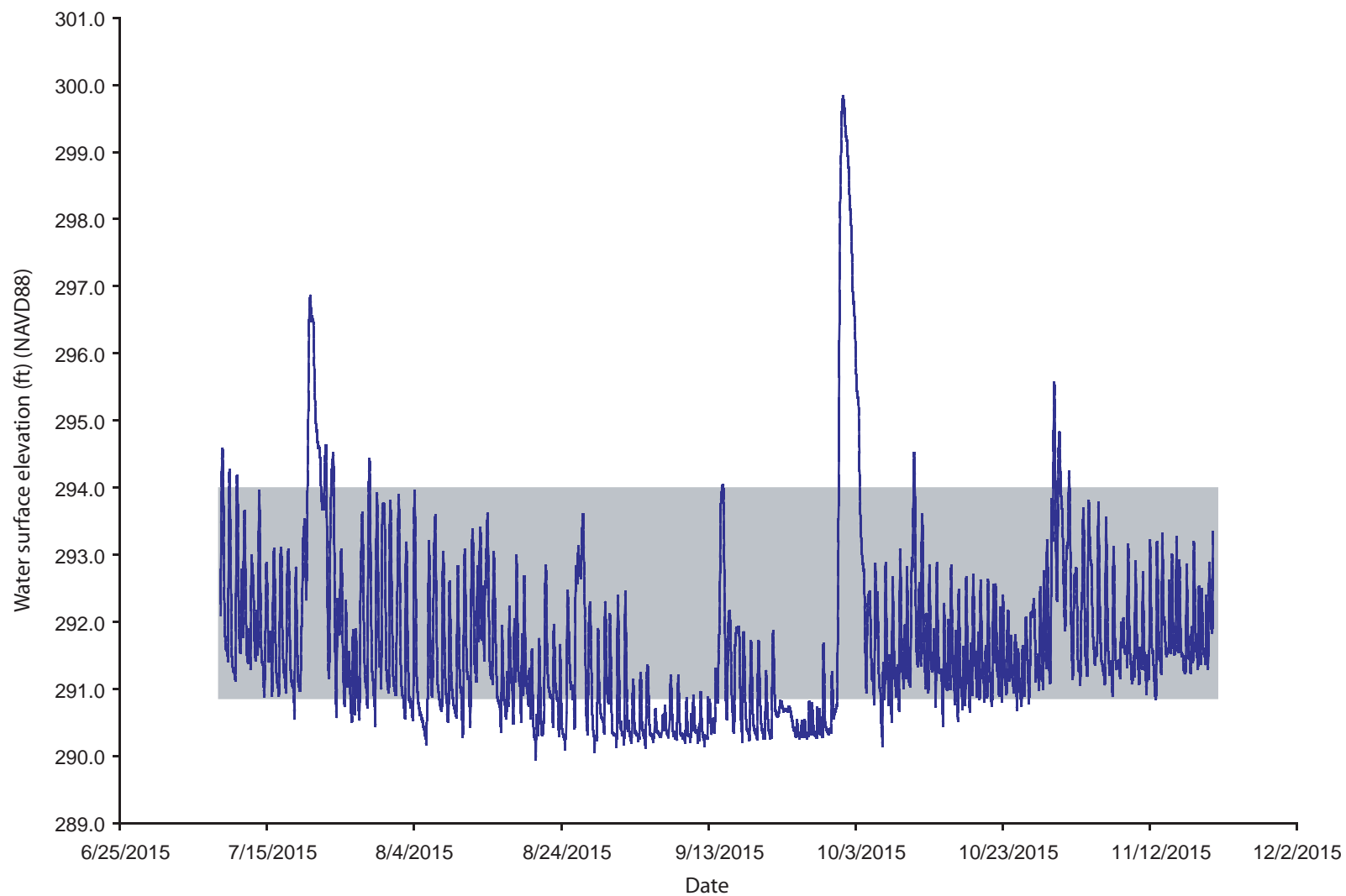


Note: Stage data in 15-minute intervals. No drawdowns below the normal minimum operating WSE at Bellows Falls dam occurred due to high inflows during the water level logger period of record in 2014.

*Note: Typical operational fluctuation at site equals 3.16 feet

— Recorded stages
— Typical operational fluctuation*

Water surface elevation data (2014) for 02-B01 (Lipfert Site).

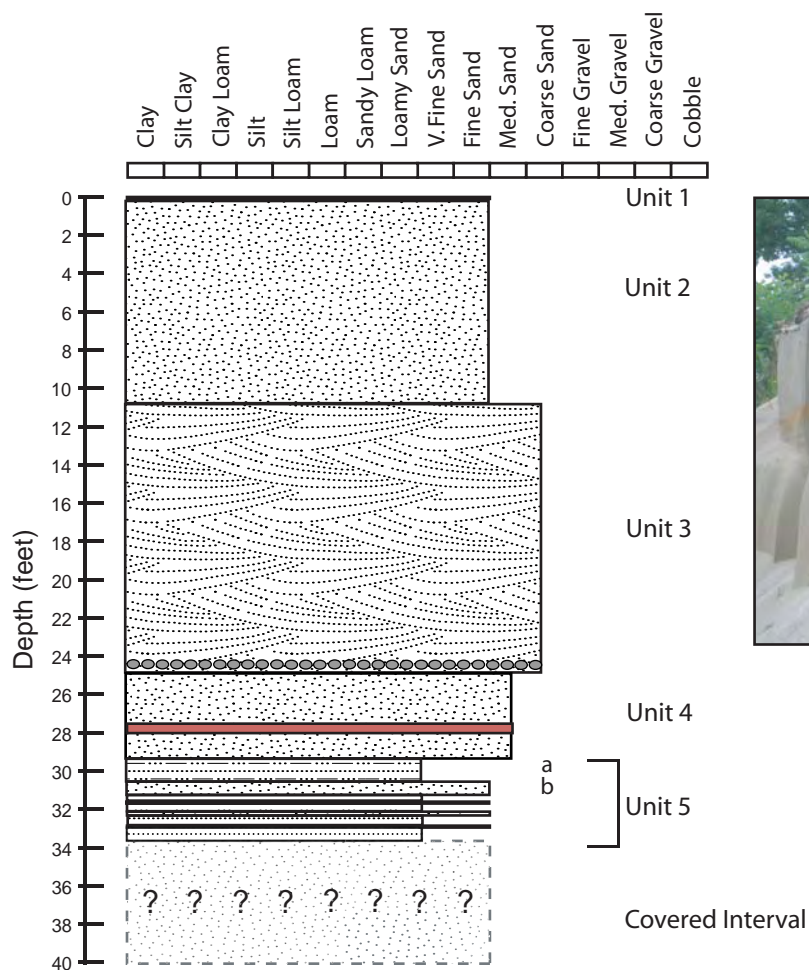


Note: Stage data in 15-minute intervals. No drawdowns below the normal minimum operating WSE at Bellows Falls dam occurred due to high inflows during the water level logger period of record in 2015.

*Note: Typical operational fluctuation at site equals 3.16 feet

— Recorded stages
— Typical operational fluctuation*

Water surface elevation data (2015) for 02-B01 (Lipfert Site).



Top elevation = 330.5 feet above sea level (NAVD88)

Unit 1: A Horizon

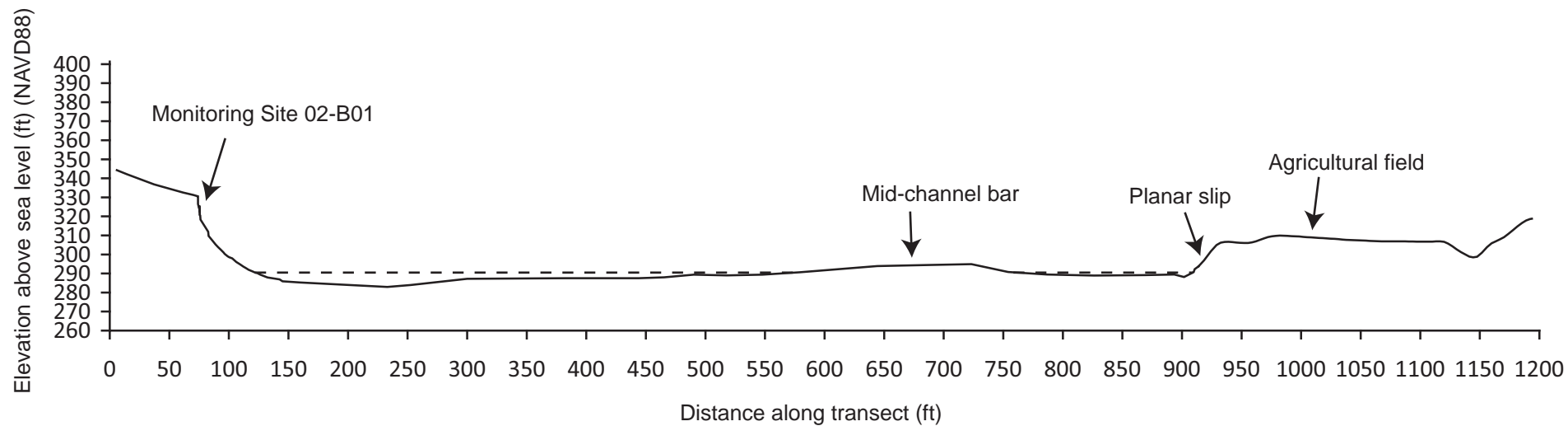
Unit 2: [10.7 ft thick] Interbedded fine to medium sand interbedded with silt loam with oxidized incipient soil horizons (more numerous at base), buff tan with mottled oxidation, strong to moderate medium blocky; sharp contact with Unit 3.

Unit 3: [14.2 ft thick] (2.5Y 6/2 dry, 2.5Y 5/2 wet), Loose crumb texture, cross-bedded coarse sand in 0.5-3.0 ft thick beds with discontinuous cross beds of fine to medium gravel, grey color; sharp contact with coarse gravel clasts at base.

Unit 4: [4.5 ft thick] (10YR 6/3 dry, 2.5Y 3/3 wet- main unit, 10YR 5/8 dry, 10YR 3/4 wet-oxidized layer), two massive beds of medium sand separated by sharp loose textured oxidized horizon(shown in red); sharp contact with Unit 5.

Unit 5: [4.2 ft thick] Interbedded unit consisting of: a) [0.6 ft thick] weak small granular, thinly bedded fine sand interbedded with silty sand, more competent in outcrop. b) [0.1 ft thick] fine medium loose sand, cross-bedded in discontinuous lenticular beds with scour structures at base.

Covered Interval: [6.3 ft thick] Presumed fine to medium sand.



Note: View looking downstream

Vertical exaggeration = 1.6x

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

Full river transect for 02-B01 (Lipfert Site).

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-B01	1	43.4377167	-72.3929500	112	Straight on portrait view of cross section from end of transect
02-B01	2	43.4377267	-72.3929250	116	Photo of bank toe from end of transect
02-B01	3	43.4377467	-72.3929467	163	DS portrait view of eroding bank from end of transect
02-B01	4	43.4377267	-72.3929350	39	US view of eroding bank from end of transect
02-B01	5	43.4377000	-72.3928867	107	Straight on portrait view of upper scarp from mid bank on transect
02-B01	6	43.4377217	-72.3929017	178	DS view of eroding bank from top of bench
02-B01	7	43.4376900	-72.3928267	105	Closeup of upper scarp face from base of cliff
02-B01	8	43.4377972	-72.3926806	260	Looking down at bank transect from top of bank
02-B01	9	43.4377000	-72.3928861	32	View us of transect from mid bank on transect including the lower bench
02-B01	10	43.4376950	-72.3928283	20	US view of eroding bank from point downstream

Ground photograph locations at 02-B01 (Lipfert Site).



Photo 1: 2013-11-19 13:19



Photo 1: 2014-05-20 11:02



Photo 1: 2014-09-19 15:52



Photo 1: 2014-11-11 12:32



Photo 1: 2015-05-08 14:15



Photo 1: 2015-07-08 14:37



Photo 1: 2015-09-14 13:53



Photo 1: 2015-11-20 14:01



Photo 2: 2013-11-19 13:19



Photo 2: 2014-05-20 11:04



Photo 2: 2014-07-18 11:52



Photo 2: 2014-09-19 15:52



Photo 2: 2015-05-08 14:16



Photo 2: 2015-07-08 14:38



Photo 2: 2015-09-14 13:54



Photo 2: 2015-11-20 14:02



Photo 3: 2013-11-19 13:19



Photo 3: 2014-05-20 11:02



Photo 3: 2014-07-18 11:51



Photo 3: 2014-09-19 15:53



Photo 3: 2015-05-08 14:18



Photo 3: 2015-07-08 14:39



Photo 3: 2015-09-14 13:55



Photo 3: 2015-11-20 14:03



Photo 4: 2013-11-19 13:20



Photo 4: 2014-07-18 11:51



Photo 4: 2014-05-20 11:03



Photo 4: 2014-11-11 12:35



Photo 4: 2015-05-08 14:18



Photo 4: 2015-07-08 14:40



Photo 4: 2015-09-14 13:56



Photo 4: 2015-11-20 14:04



Photo 5: 2013-11-19 13:30



Photo 5: 2014-05-20 11:05



Photo 5: 2014-09-19 15:55



Photo 5: 2014-11-11 12:33



Photo 5: 2015-05-08 14:20



Photo 5: 2015-07-08 14:41



Photo 5: 2015-09-14 13:57



Photo 5: 2015-11-20 14:10



Photo 6: 2013-11-19 13:30



Photo 6: 2014-07-18 11:54



Photo 6: 2014-05-20 11:05



Photo 6: 2014-11-11 12:34



Photo 6: 2015-05-08 14:20



Photo 6: 2015-07-08 14:42



Photo 6: 2015-09-14 13:59



Photo 6: 2015-11-20 14:05



Photo 7: 2013-11-19 13:43



Photo 7: 2014-05-20 11:06



Photo 7: 2014-07-18 11:53



Photo 7: 2014-11-11 12:34



Photo 7: 2015-05-08 14:21



Photo 7: 2015-07-08 14:43



Photo 7: 2015-09-14 14:00



Photo 7: 2015-11-20 14:09



Photo 8: 2013-11-19 14:09



Photo 8: 2014-05-20 10:53



Photo 8: 2014-07-18 12:44



Photo 8: 2014-11-11 12:40



Photo 8: 2015-05-08 13:47



Photo 8: 2015-07-08 14:58



Photo 8: 2015-09-14 14:06



Photo 8: 2015-11-20 14:16



Photo 9: 2014-05-20 10:57



Photo 9: 2014-09-19 15:06



Photo 9: 2014-11-11 12:30



Photo 9: 2015-05-08 14:27



Photo 9: 2015-07-08 14:56



Photo 9: 2015-09-14 14:05



Photo 9: 2015-11-20 14:14



Photo 10: 2014-05-20 11:06



Photo 10: 2014-09-19 15:54



Photo 10: 2014-11-11 12:34



Photo 10: 2015-05-08 14:21



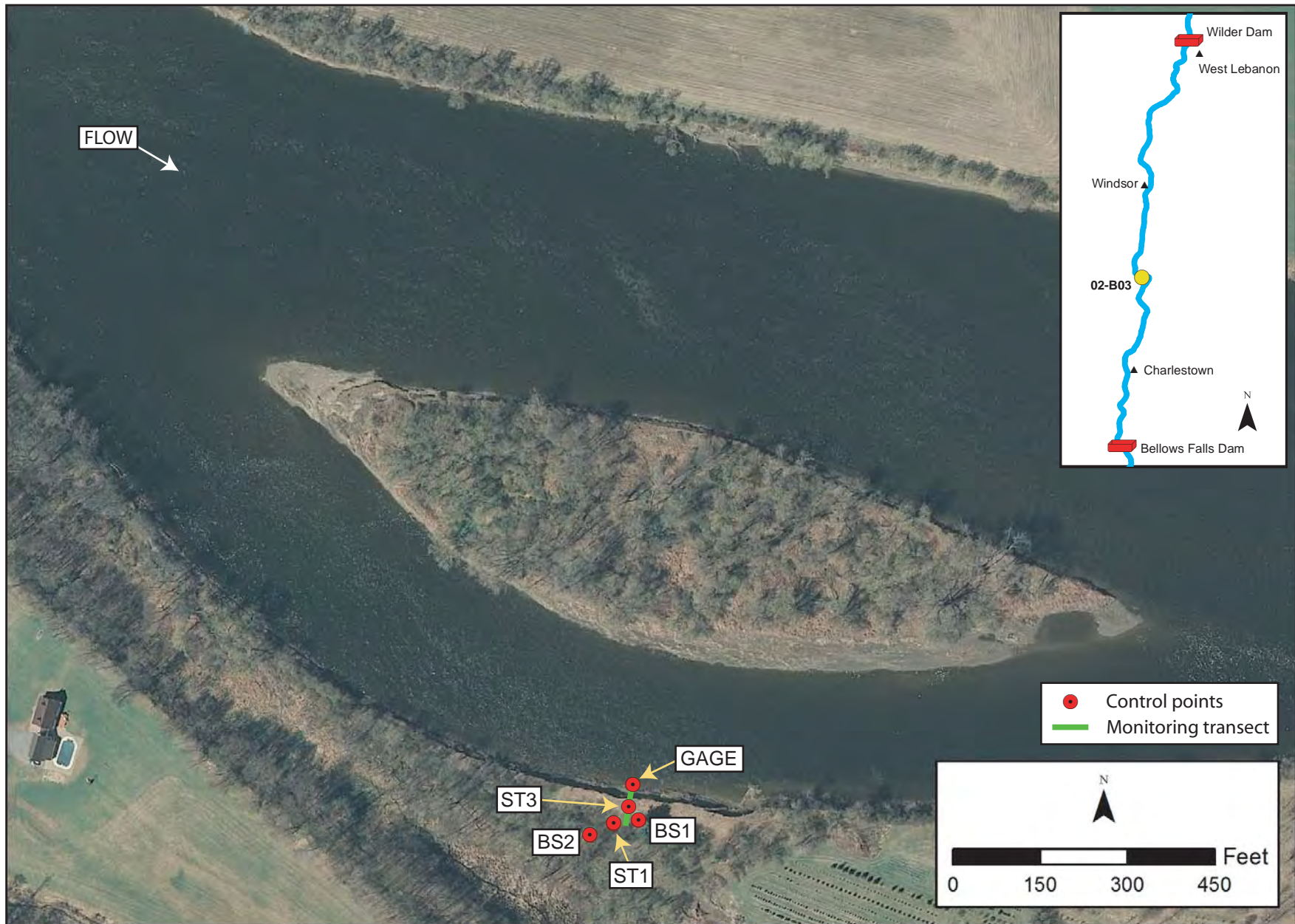
Photo 10: 2015-07-08 14:46



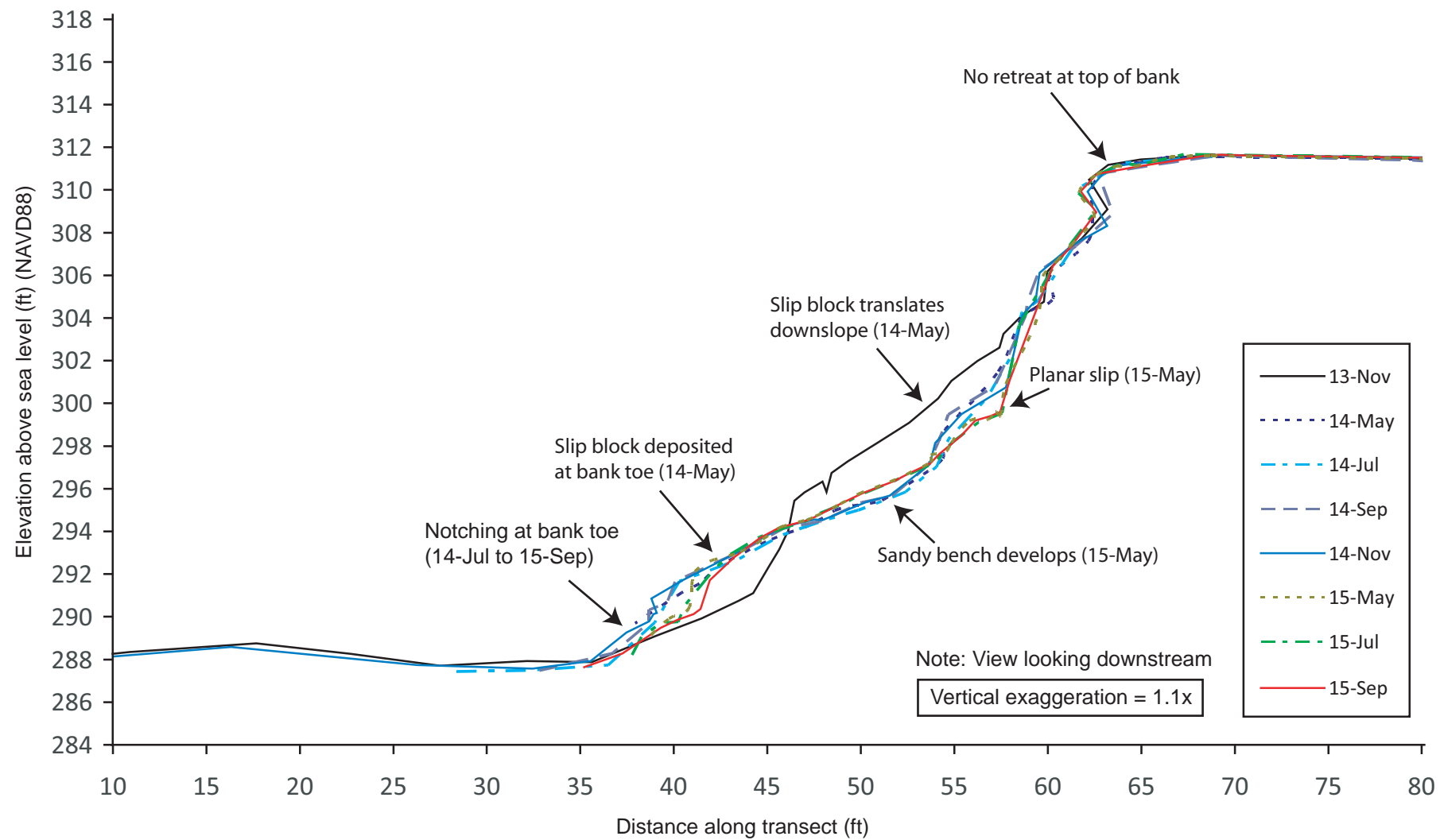
Photo 10: 2015-09-14 14:02



Photo 10: 2015-11-20 14:08



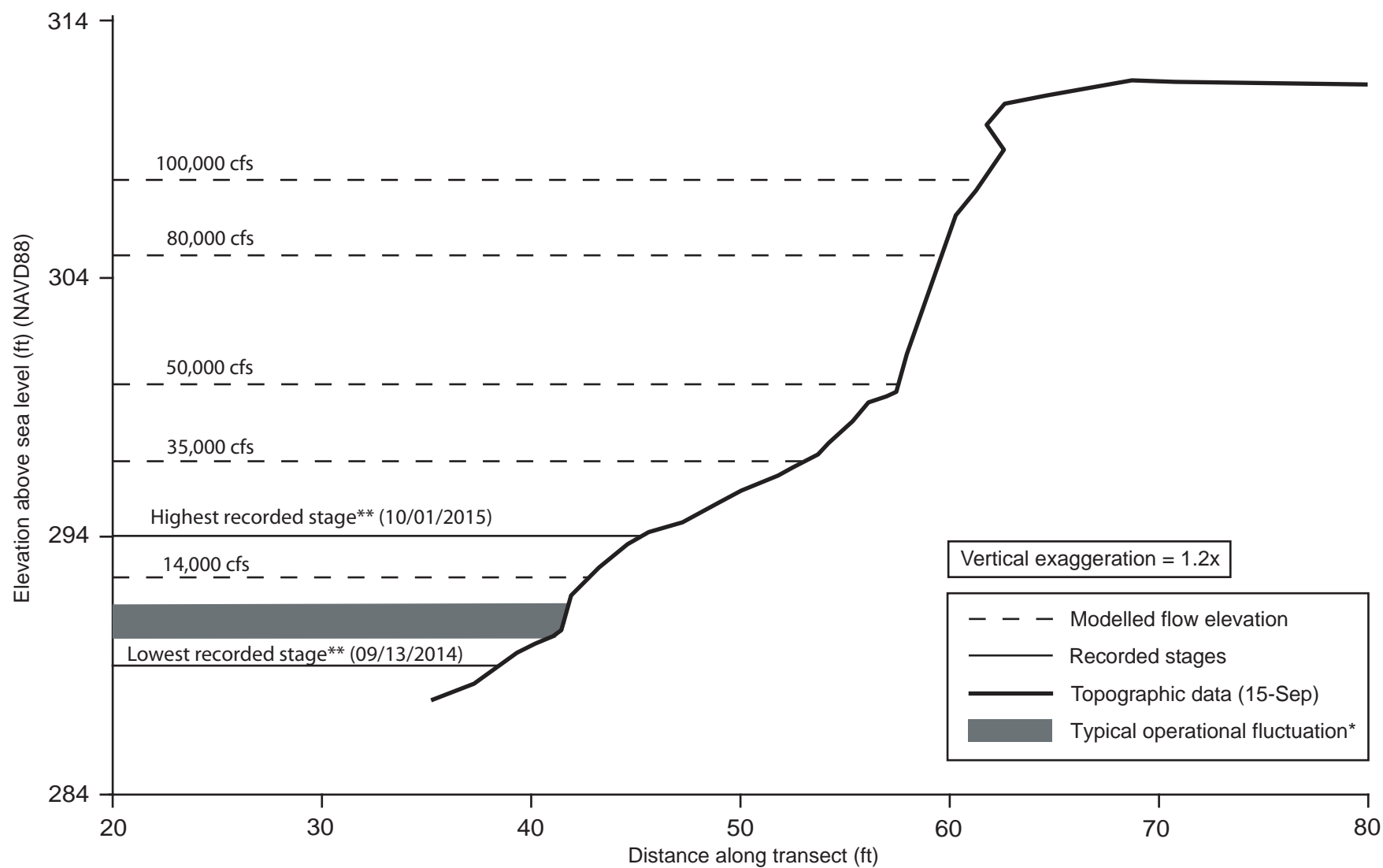
Site map for 02-B03 (Jarvis Island Site).



Erosion monitoring transect for 02-B03 (Jarvis Island Site).

Time period	Observed changes
Summary	No retreat at top of bank. Large slip block was removed from mid-bank with some of the colluvial material deposited at the bank toe. This material has largely been removed since July 2014.
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	Slip block material removed from mid-bank. Colluvial material deposited at bank toe.
May to July 2014	Notching into colluvial material at bank toe.
July to September 2014	Notching into colluvial material at bank toe.
September to November 2014	Notching into colluvial material at bank toe.
November 2014 to May 2015	Small planar slip on mid-bank. Slip block has fallen onto newly developed sandy bench.
May to July 2015	No observed changes.
July to September 2015	Notching at toe of bank.

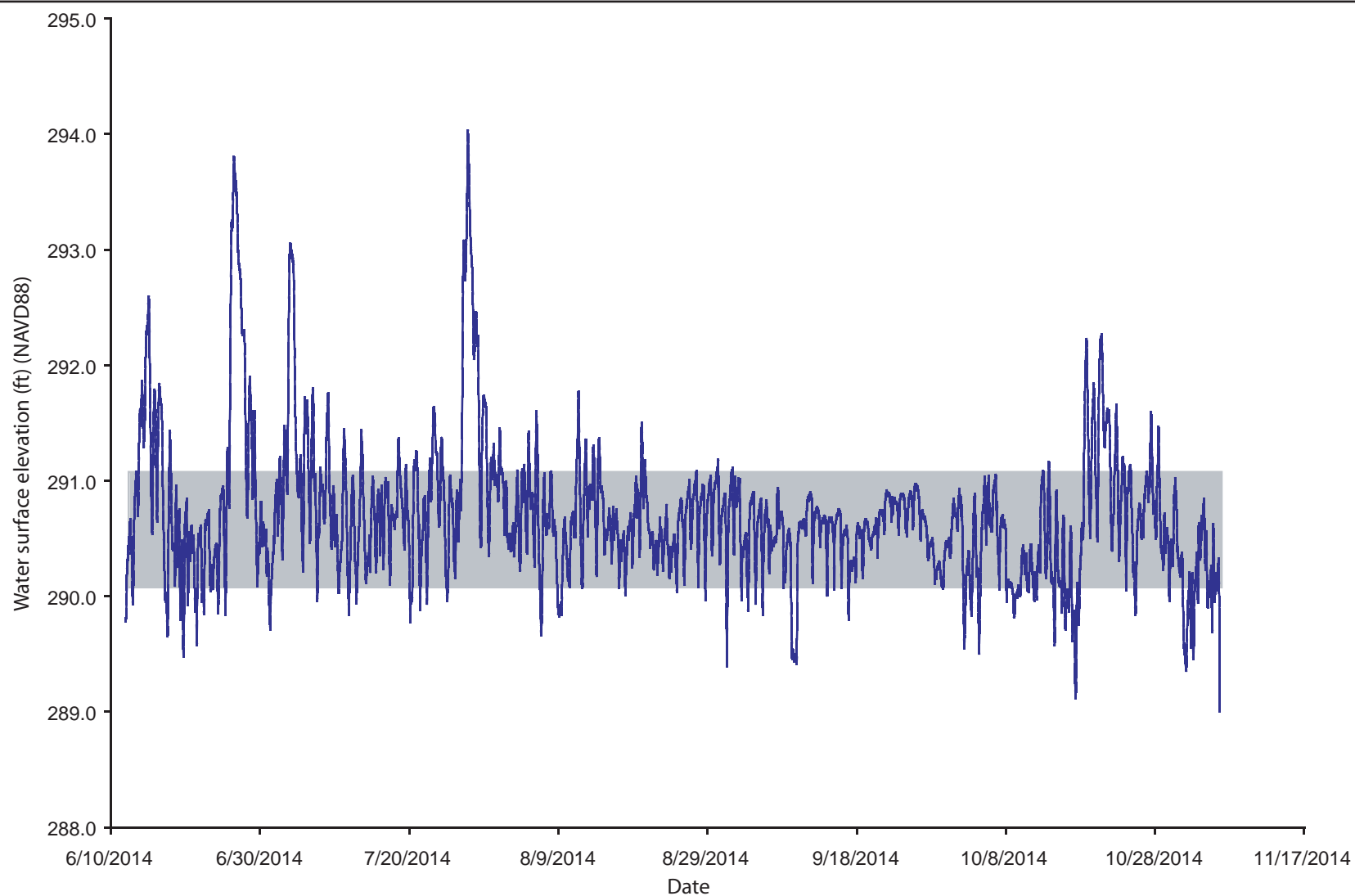
Narrative of observed changes at 02-B03 (Jarvis Island Site).



*Note: Typical operational fluctuation at site equals 1.04 feet

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

Selected river stages at 02-B03 (Jarvis Island Site).



Note: Stage data in 15-minute intervals. No drawdowns below the normal minimum operating WSE at Bellows Falls dam occurred due to high inflows during the water level logger period of record in 2014.

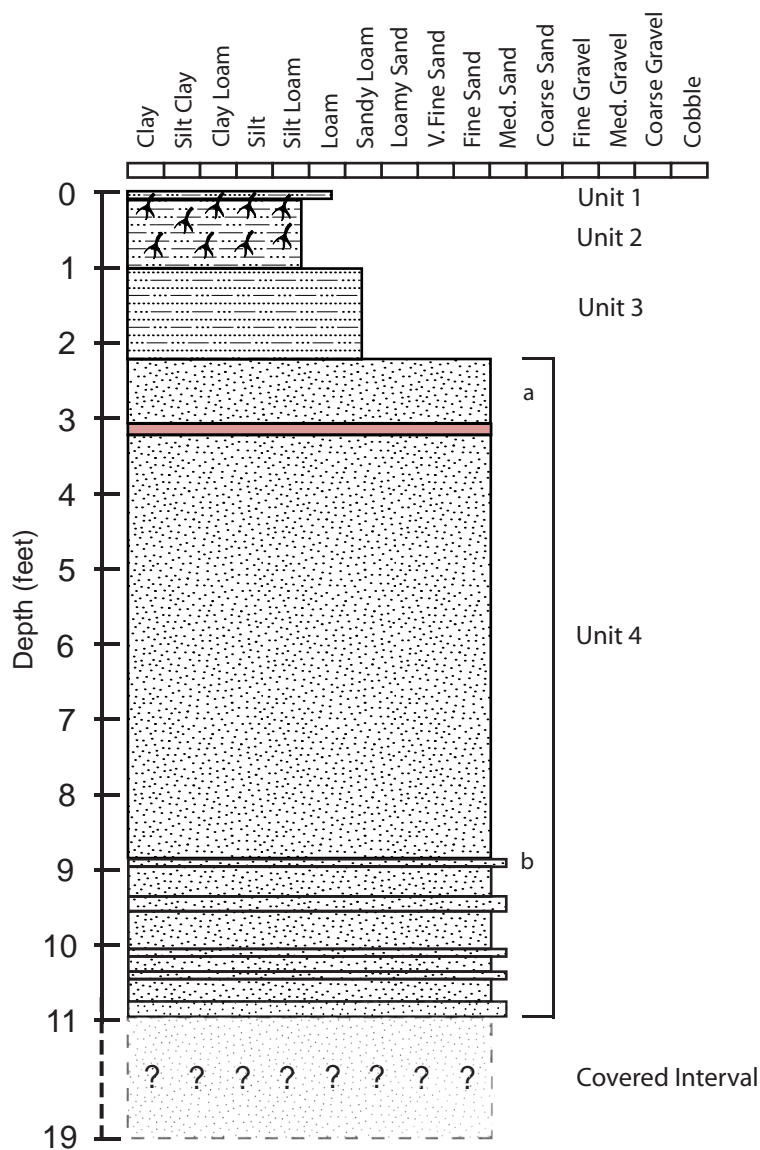
*Note: Typical operational fluctuation at site equals 1.04 feet

— Recorded stages
— Typical operational fluctuation*

Water surface elevation data (2014) for 02-B03 (Jarvis Island Site).

No valid 2015 water level data to report

Water surface elevation data (2015) for 02-B03 (Jarvis Island Site).



Top elevation = 310.7 feet above sea level (NAVD88)

Unit 1: [0.1 ft thick] O Horizon, organic rich, abundant fine roots.

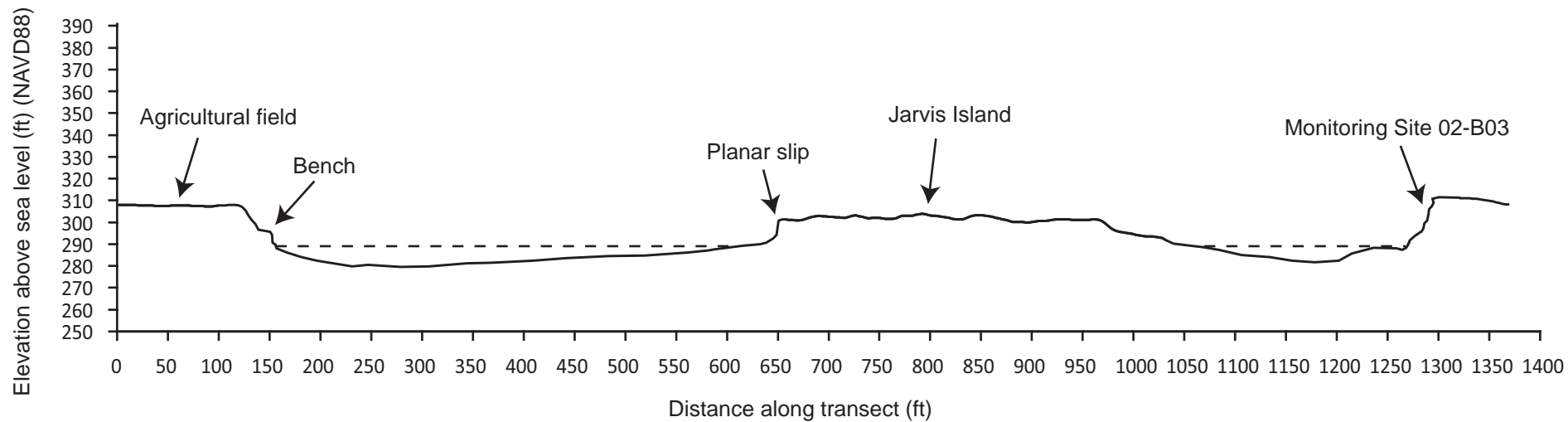
Unit 2: [0.9 ft thick] O/A Horizon, (2.5Y 4/3 dry, 2.5Y 3/3 wet), weak coarse blocky structure, fine sandy silty loam with organic and abundant small roots; sharp contact with Unit 3.

Unit 3: [1.2 ft thick] C Horizon (2.5Y 4/4 dry, 2.5Y 3/3 wet), medium blocky medium weak granular, fine sandy loam; gradational contact with Unit 4.

Unit 4: [8.7 ft thick] Interbedded unit consisting of: a) [0.2-5.6 ft thick] (2.5Y 4/3 dry, 2.5Y 3/2 wet), weak medium platy structure, tan fine to medium sand; sharp and gradational contacts with b) [0.1-0.2 ft thick] (5Y 5/2 dry, 2.5Y 3/3 wet), weak platy fine to medium sand.

Covered Interval: [8.1 ft thick] Presumed fine to medium sand.

Stratigraphic column of 02-B03 (Jarvis Island Site).



Note: View looking downstream

Vertical exaggeration = 2.0x

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

Full river transect for 02-B03 (Jarvis Island Site).

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-B03	1	43.3572650	-72.4017633	188	Looking at bank transect from bank
02-B03	2	43.3574350	-72.4019533	21	Portrait view looking down at transect from TOB
02-B03	3	43.3573950	-72.4019600	300	Portrait upstream view at eroding bank from top of bank in transect
02-B03	4	43.3574183	-72.4019033	189	Portrait view straight on from end of transect
02-B03	5	43.3574167	-72.4019033	251	US view of bank from end of survey transect
02-B03	6	43.3574217	-72.4019067	115	DS view of river bank from end of bank transect
02-B03	7	43.3573100	-72.4019850	167	Portrait closeup view of upper scarp in transect

Ground photograph locations at 02-B03 (Jarvis Island Site).



Photo 1: 2013-11-14 14:04



Photo 1: 2014-07-18 14:49



Photo 1: 2014-09-22 16:33



Photo 1: 2015-05-13 17:23



Photo 1: 2015-07-07 12:18



Photo 1: 2015-09-14 13:18

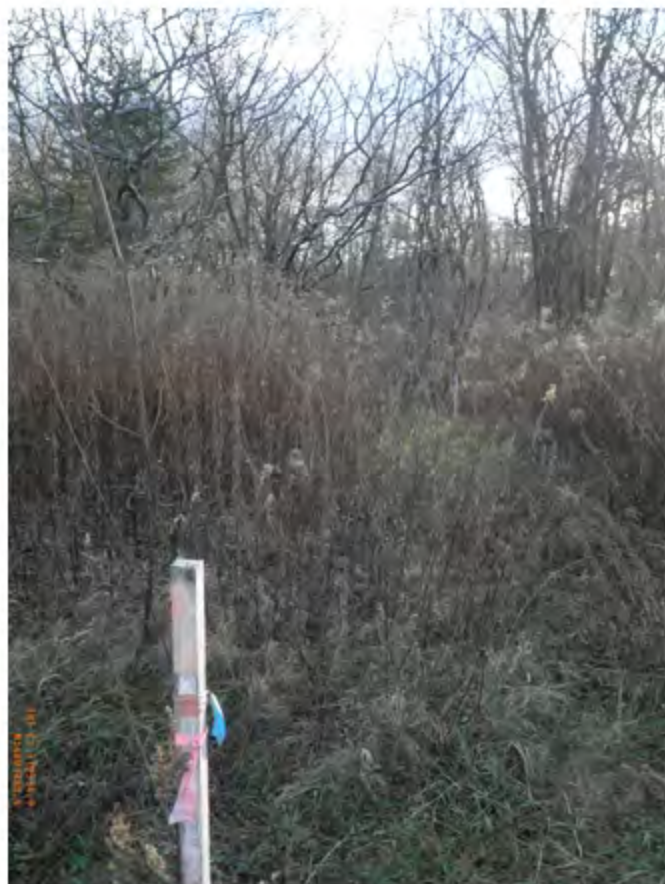


Photo 1: 2015-11-24 15:54



Photo 2: 2013-11-14 14:04



Photo 2: 2014-05-19 17:08



Photo 2: 2014-09-22 16:33



Photo 2: 2014-11-11 15:31



Photo 2: 2015-05-13 17:00



Photo 2: 2015-07-07 12:09



Photo 2: 2015-09-14 12:35



Photo 2: 2015-11-24 15:54



Photo 3: 2013-11-14 14:07

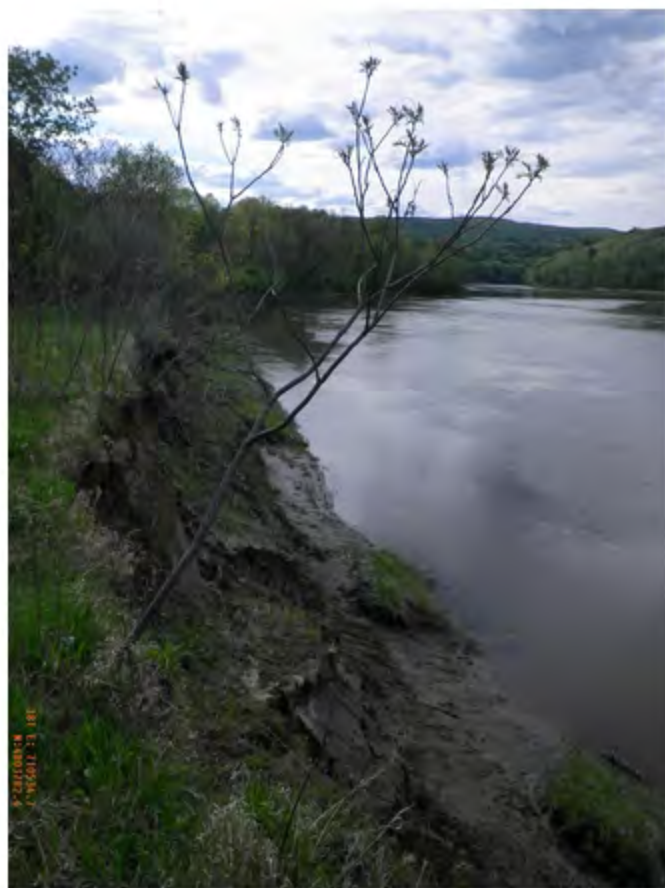


Photo 3: 2014-05-19 17:09



Photo 3: 2014-07-18 14:49



Photo 3: 2014-11-11 15:31



Photo 3: 2015-05-13 17:01



Photo 3: 2015-07-07 12:10



Photo 3: 2015-09-14 12:37



Photo 3: 2015-11-24 15:56



Photo 4: 2013-11-14 14:28



Photo 4: 2014-05-19 17:11



Photo 4: 2014-07-18 14:54



Photo 4: 2014-11-11 15:30



Photo 4: 2015-05-13 17:06



Photo 4: 2015-07-07 12:13



Photo 4: 2015-09-14 12:39



Photo 4: 2015-11-24 16:01



Photo 5: 2013-11-14 14:28



Photo 5: 2014-07-18 14:54



Photo 5: 2014-05-19 17:13



Photo 5: 2014-11-11 15:29



Photo 5: 2015-05-13 17:07



Photo 5: 2015-09-14 12:41



Photo 5: 2015-07-07 12:14



Photo 5: 2015-11-24 16:00



Photo 6: 2013-11-14 14:30



Photo 6: 2014-09-22 16:30



Photo 6: 2014-05-19 17:12



Photo 6: 2014-11-11 15:30



Photo 6: 2015-05-13 17:08



Photo 6: 2015-07-07 12:15



Photo 6: 2015-09-14 12:40



Photo 6: 2015-11-24 16:02



Photo 7: 2014-09-22 16:32



Photo 7: 2014-11-11 15:28



Photo 7: 2015-05-13 17:05



Photo 7: 2015-07-07 12:17



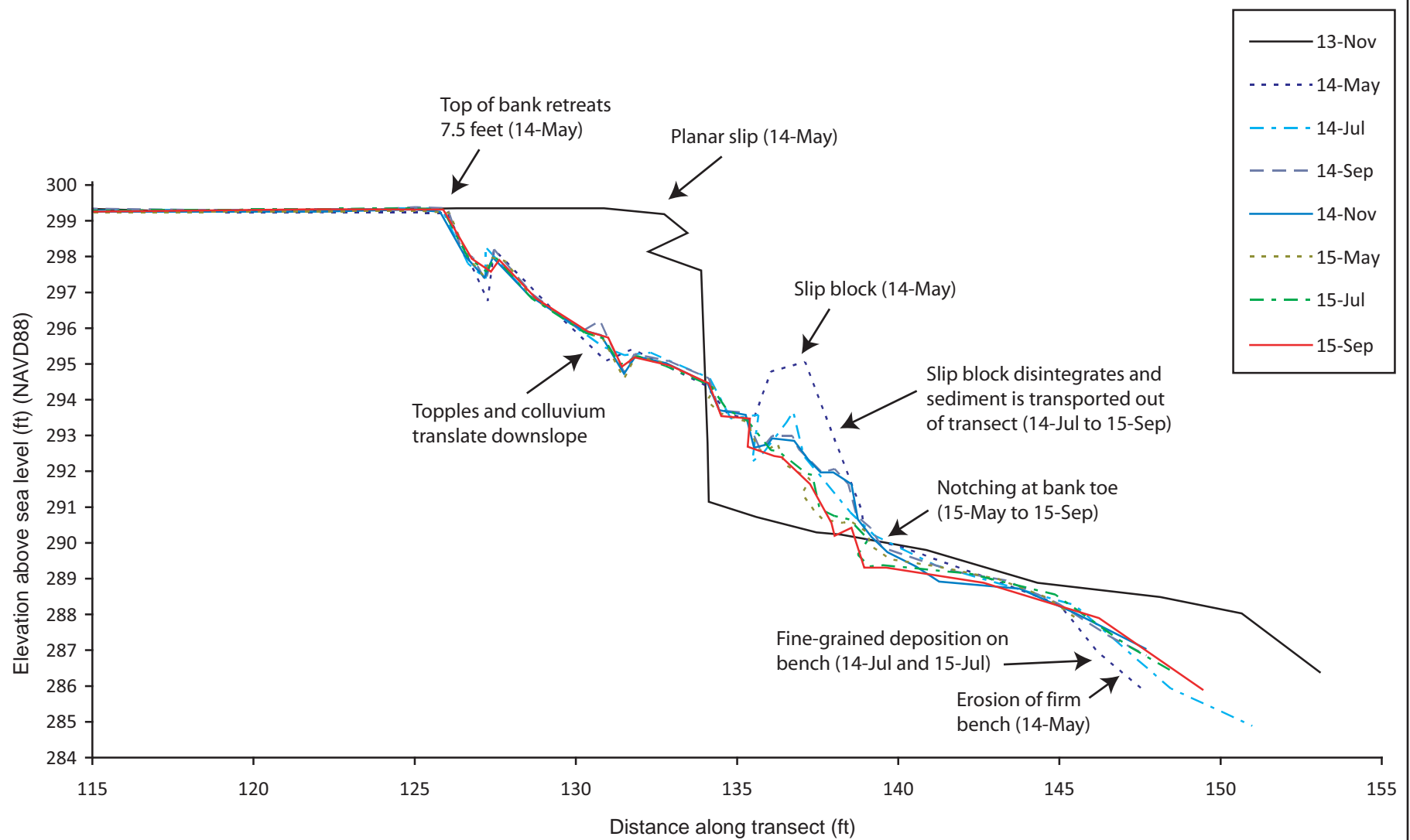
Photo 7: 2015-09-14 12:42



Photo 7: 2015-11-24 15:58



Site map for 02-B07 (Charlestown Site).



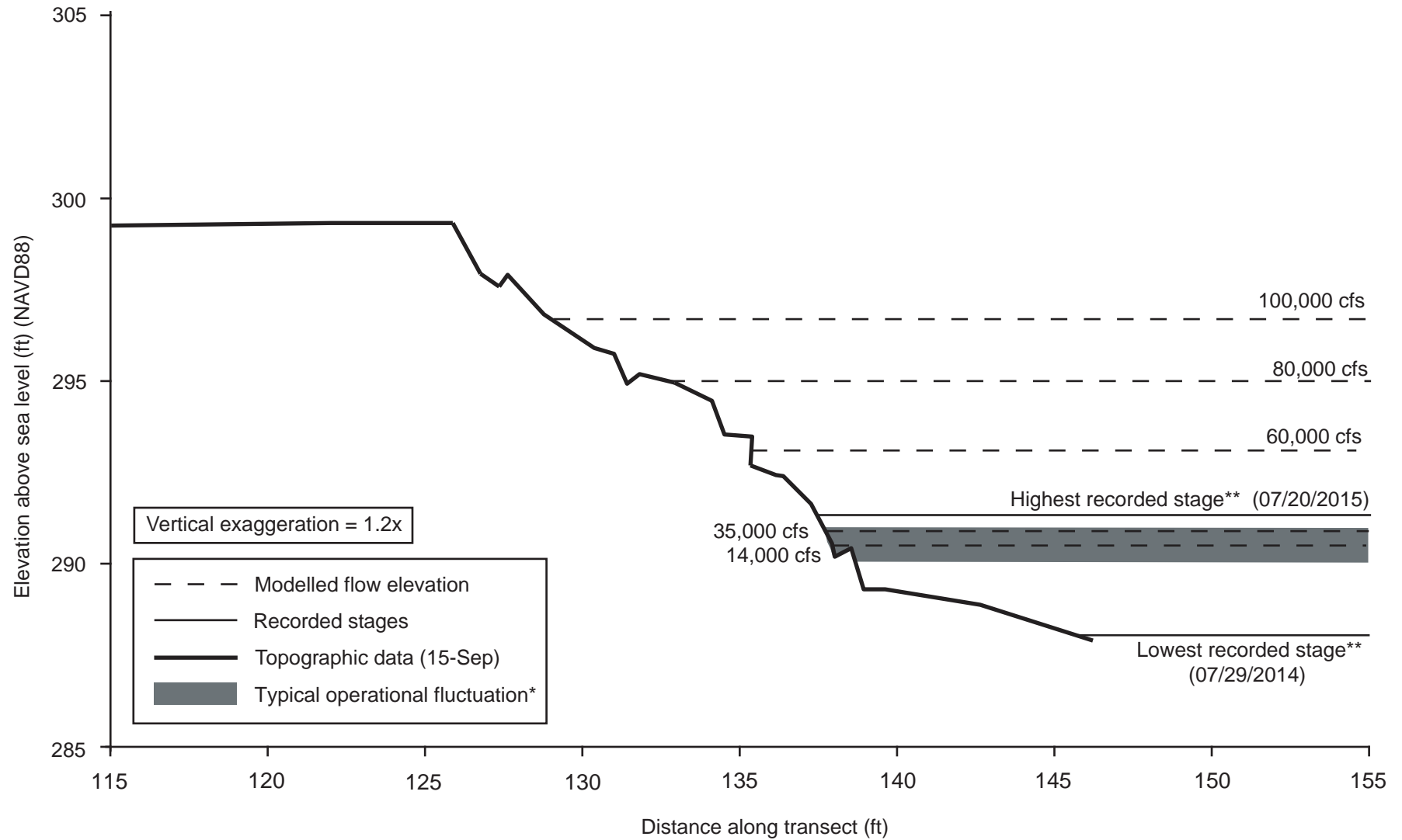
Note: View looking downstream

Vertical exaggeration = 1.1x

Erosion monitoring transect for 02-B07 (Charlestown Site).

Time period	Observed changes
Summary	Planar slip at top of bank resulted in 7.5 feet of bank retreat, decreasing bank slope. Large vegetated slip block partially disintegrated and was removed during the remainder of the study period. This colluvial material appeared to buttress the bank limiting erosion on the intact portion of the bank.
Initial survey (Nov-13)	Noted near vertical scarp with overhanging soil apron on upper portion of bank. Small notch at bank toe. Riparian buffer consisting of various tree and shrub species has been planted at site.
November 2013 to May 2014	Planar slip at top of bank yields 7.5 feet of bank retreat. Large vegetated slip block now lies at base of bank with series of smaller topple blocks and disaggregated soil and sediment upslope on mid and upper bank. Planar slip results in large decrease in bank slope. Firm, submerged bench surface has been eroded.
May to July 2014	Disintegration of large slip block at base of bank. Fractures have developed in colluvial material on bank as unconsolidated sediment and topple blocks move downslope. Silt and fine sediment deposited on submerged bench.
July to September 2014	Topple blocks and colluvium continue to move downslope.
September to November 2014	No observed changes.
November 2014 to May 2015	Further disintegration of large slip block at base of bank. Topple blocks translate downslope. Notching at toe of bank.
May to July 2015	Notching at toe of bank. Tension cracks develop in colluvium as topple blocks translate downslope. Silt and fine sediment deposited on submerged bench.
July to September 2015	Tension cracks continue to develop in colluvium. Notching at toe of bank.

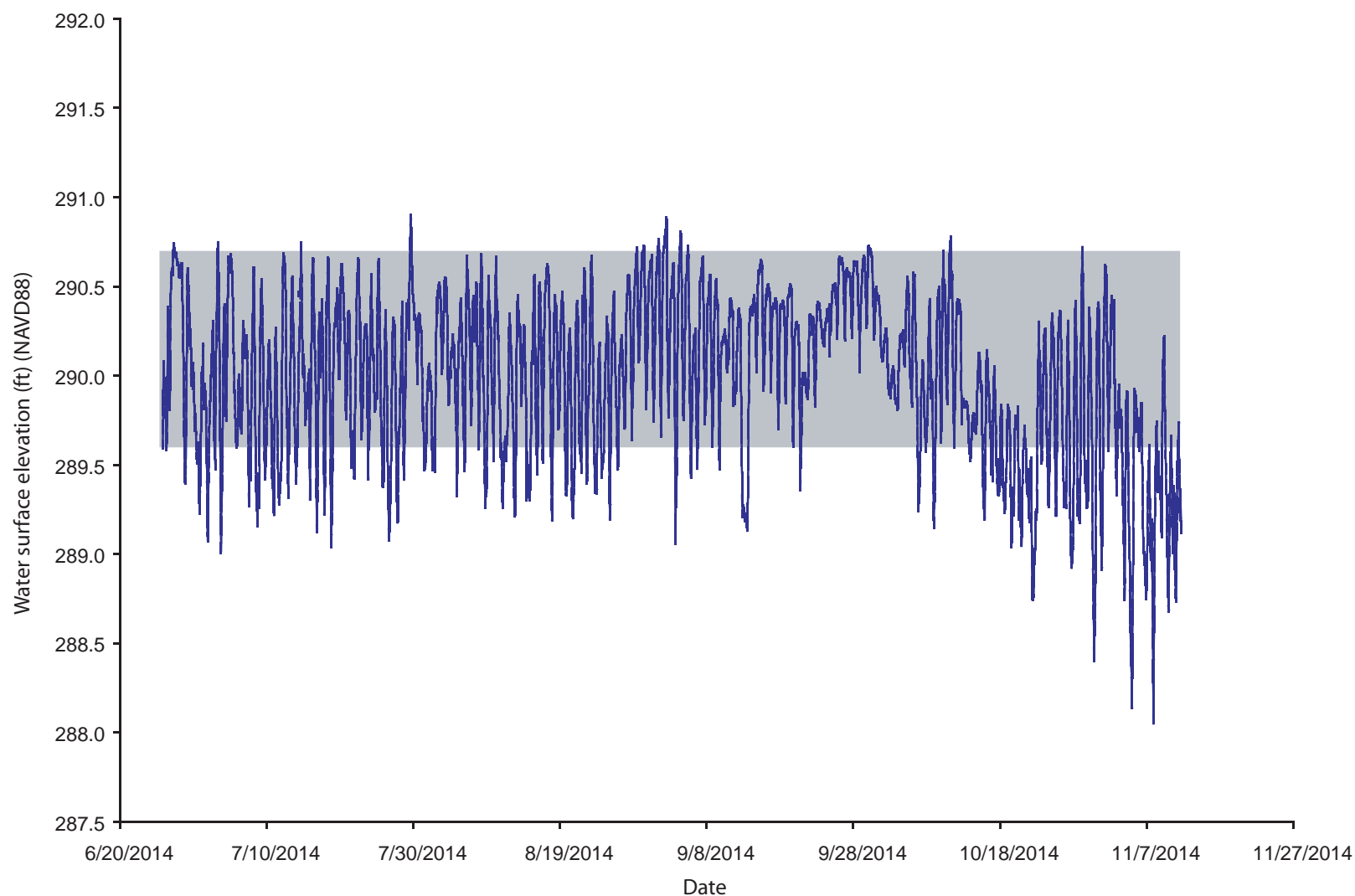
Narrative of observed changes at 02-B07 (Charlestown Site).



*Note: Typical operational fluctuation at site equals 1.1F feet

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

Selected river stages at 02-B07 (Charlestown Site).

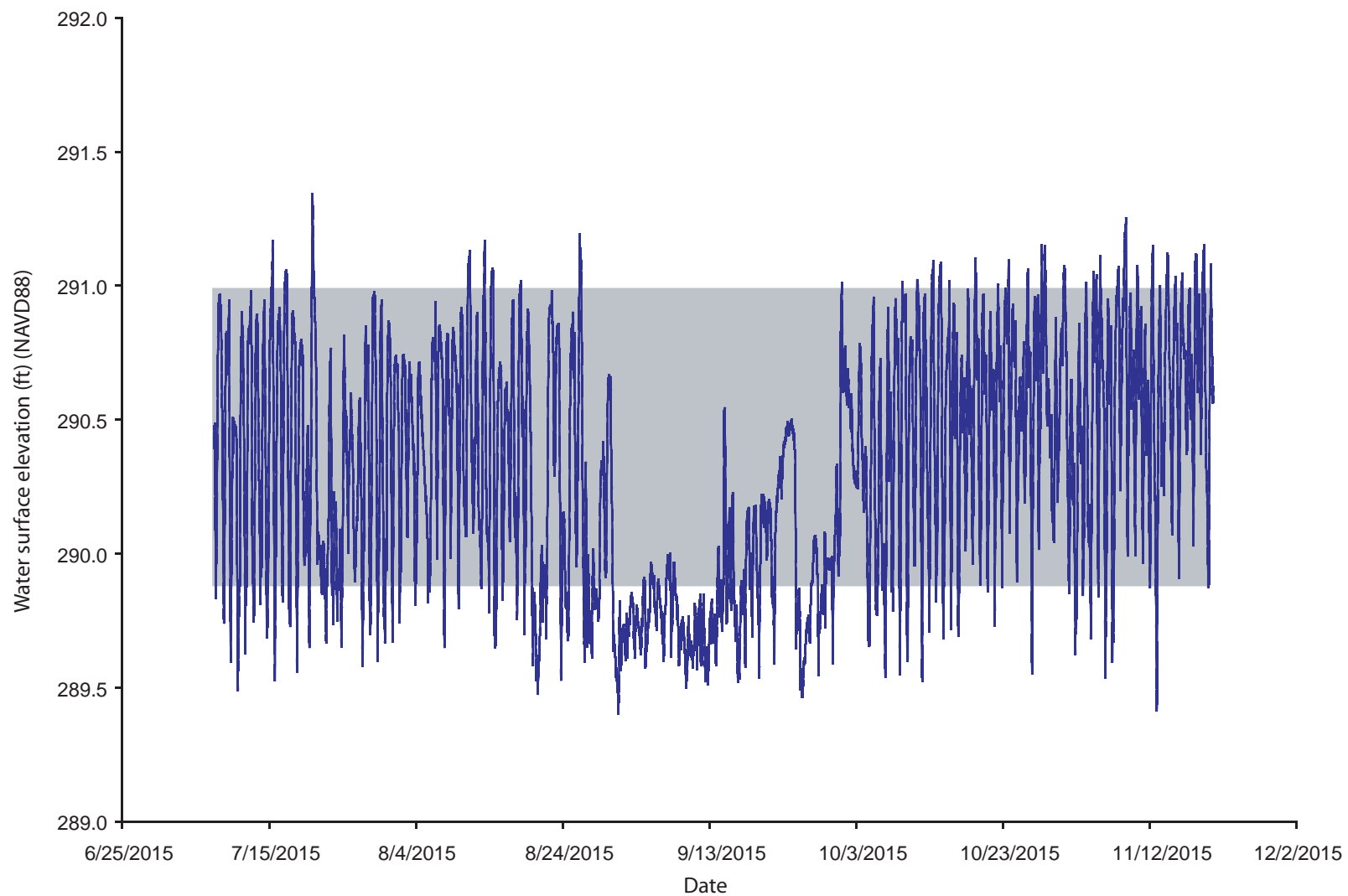


Note: Stage data in 15-minute intervals. No drawdowns below the normal minimum operating WSE at Bellows Falls dam occurred due to high inflows during the water level logger period of record in 2014.

*Note: Typical operational fluctuation at site equals 1.11 feet

— Recorded stages
— Typical operational fluctuation*

Water surface elevation data (2014) for 02-B07 (Charlestown Site).

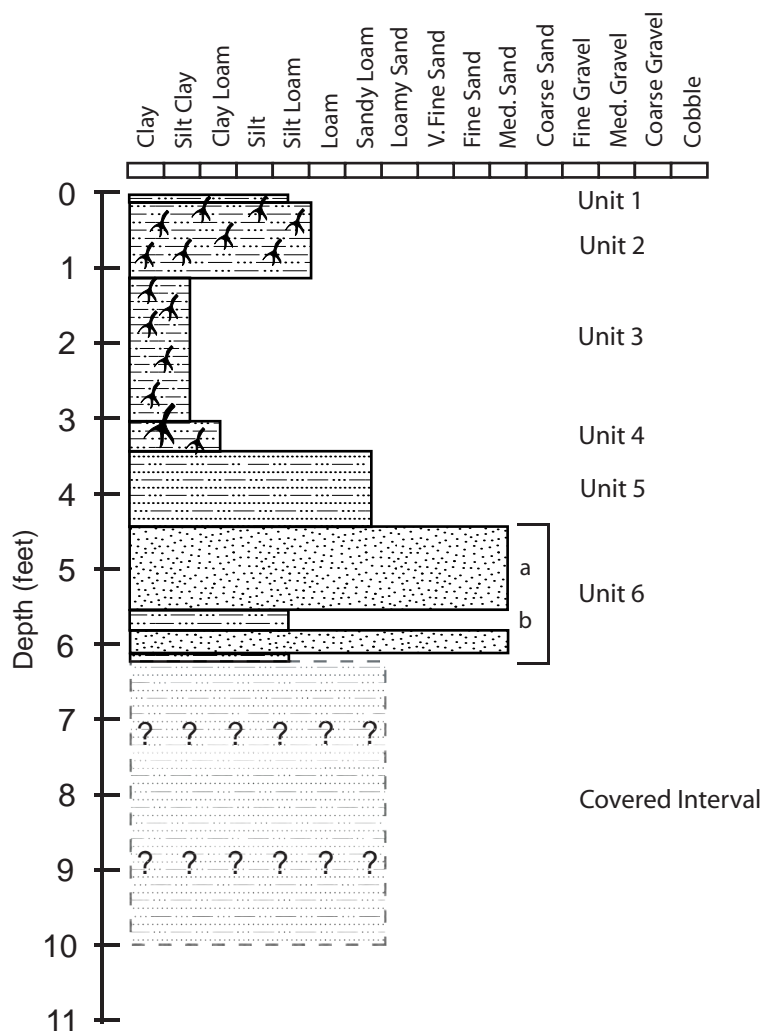


Note: Stage data in 15-minute intervals. No drawdowns below the normal minimum operating WSE at Bellows Falls dam occurred due to high inflows during the water level logger period of record in 2015.

*Note: Typical operational fluctuation at site equals 1.11 feet

— Recorded stages
— Typical operational fluctuation*

Water surface elevation data (2015) for 02-B07 (Charlestown Site).



Top elevation = 299.3 feet above sea level (NAVD88)

Unit 1: [0.1 ft thick] O/A Horizon.

Unit 2: [1.0 ft thick] (2.5Y 3/2 dry, 2.5Y 2/2 wet), silty loam to loam with common fine thin roots; gradational contact with Unit 3.

Unit 3: [1.9 ft thick] (2.5Y 4/3 dry, 2.5 Y 3/3 wet), moderate medium granular, faint mottled color, massive clayey silt; gradational contact with Unit 4.

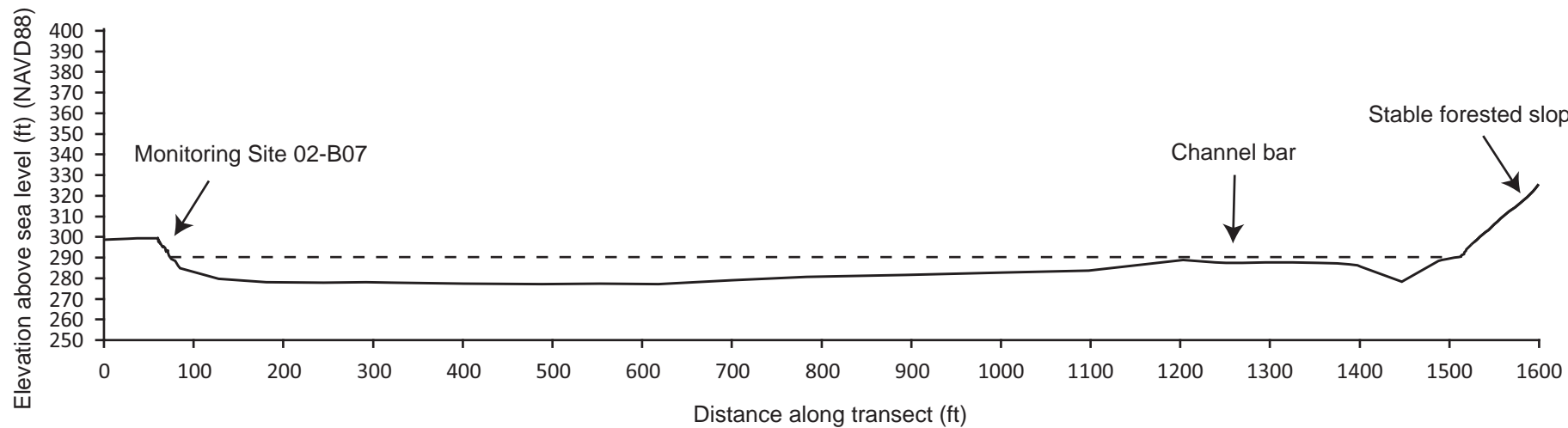
Unit 4: [0.4 ft thick] (2.5Y 4/3 dry, 2.5Y 3/3 wet), weak medium granular, slightly lighter in color, clayey, sandy, silt; gradational contact with Unit 5.

Unit 5: [1.0 ft thick] (2.5Y 3/3 wet, weak medium granular, silty sand with minor clay.

Unit 6: [1.8 ft thick] Interbedded unit consisting of: a) [1.1 ft thick] (2.5Y 5/3 dry, 2.5Y 4/3 wet), weak fine granular to loose texture, medium sand; sharp contacts with b) [0.1 ft thick] (2.5Y 3/2 wet), silt loam.

Covered Interval: [3.8 ft thick] Unit 6 presumed to continue with interbedded medium sand and silt loam.

Stratigraphic column of 02-B07 (Charlestown Site).



Note: View looking downstream

Vertical exaggeration = 1.5x

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

Full river transect for 02-B07 (Charlestown Site).

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-B07	1	43.2196667	-72.4352450	115	View of upper bank from end of transect
02-B07	2	43.2196817	-72.4352583	193	DS view of bank from end of transect to trees in center upper right
02-B07	3	43.2196783	-72.4352350	16	US view from transect
02-B07	4	43.2196867	-72.4352383	115	Straight on view of lower bank (used to be wave cut notch) from end of transect
02-B07	5	43.2197233	-72.4350300	242	View across floodplain to working station from station 1
02-B07	6	43.2197133	-72.4351300	215	DS view from TOB upstream of transect
02-B07	7	43.2197550	-72.4351550	201	Side view of river bank transect from US
02-B07	8	43.2195850	-72.4351883	8	US view
02-B07	9	43.2197267	-72.4353450	47	US view from toe of bank
02-B07	10	43.2196217	-72.43516667	93	Portrait view straight on of upper scarp at transect
02-B07	11	43.2196450	-72.4351033	294	Looking vertically down at transect from TOB

Ground photograph locations at 02-B07 (Charlestown Site).



Photo 1: 2013-11-14 17:32



Photo 1: 2014-05-19 14:43



Photo 1: 2014-09-25 13:27



Photo 1: 2014-11-11 16:51



Photo 1: 2015-05-08 11:39



Photo 1: 2015-07-07 10:58



Photo 1: 2015-09-16 10:58



Photo 1: 2015-11-20 15:25



Photo 2: 2013-11-14 17:34



Photo 2: 2014-09-25 13:27



Photo 2: 2014-05-19 14:41



Photo 2: 2014-11-11 16:50



Photo 2: 2015-05-08 11:40



Photo 2: 2015-07-07 10:59



Photo 2: 2015-09-16 10:58



Photo 2: 2015-11-20 15:26



Photo 3: 2013-11-14 17:35



Photo 3: 2014-07-24 16:26



Photo 3: 2014-05-19 14:40



Photo 3: 2014-11-11 16:49



Photo 3: 2015-09-16 10:59



Photo 3: 2015-11-20 15:29



Photo 4: 2013-11-14 17:38



Photo 4: 2014-05-19 14:42



Photo 4: 2014-09-25 13:27



Photo 4: 2014-11-11 16:50



Photo 4: 2015-05-08 11:43



Photo 4: 2015-07-07 11:00



Photo 4: 2015-09-16 11:00



Photo 4: 2015-11-20 15:27



Photo 5: 2013-11-14 17:39



Photo 5: 2014-05-19 14:45



Photo 5: 2014-07-24 16:27



Photo 5: 2015-05-08 11:26



Photo 5: 2015-07-07 11:01



Photo 5: 2015-09-16 10:54



Photo 5: 2015-11-20 15:30



Photo 6: 2014-05-19 14:17



Photo 6: 2014-09-25 13:28



Photo 6: 2014-11-11 16:49



Photo 6: 2015-05-08 11:28



Photo 6: 2015-09-16 11:03



Photo 6: 2015-07-07 11:03



Photo 6: 2015-11-20 15:30



Photo 7: 2014-05-19 14:46



Photo 7: 2014-07-24 16:28



Photo 7: 2014-11-11 16:52



Photo 7: 2015-05-08 11:29



Photo 7: 2015-07-07 11:03



Photo 7: 2015-09-16 10:55



Photo 7: 2015-11-20 15:31



Photo 8: 2014-07-24 16:26



Photo 8: 2014-11-11 16:52



Photo 8: 2015-05-08 11:33



Photo 8: 2015-07-07 11:04



Photo 8: 2015-09-16 11:04



Photo 8: 2015-11-20 15:32



Photo 9: 2014-09-25 13:27

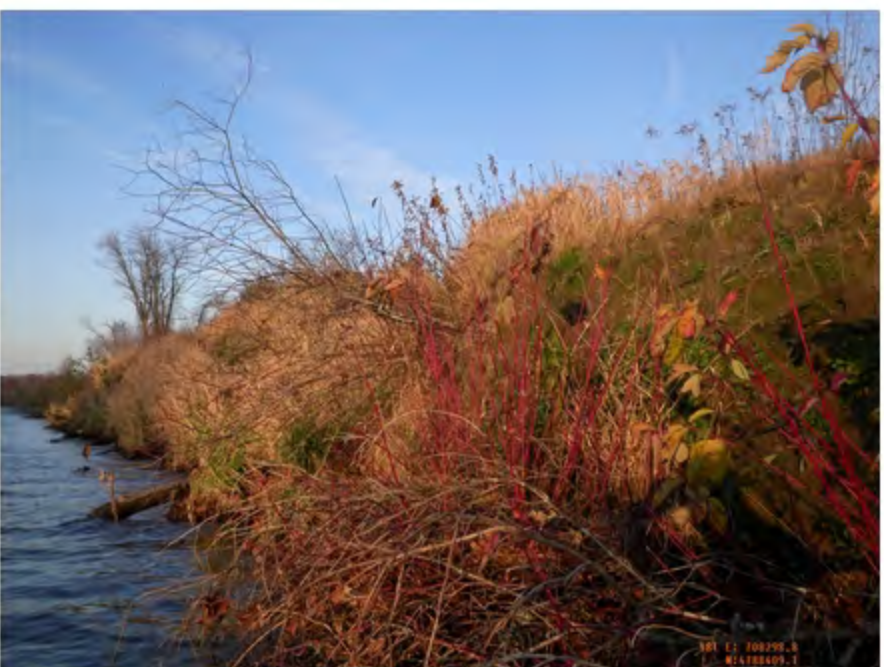


Photo 9: 2014-11-11 16:51



Photo 9: 2015-05-08 11:41



Photo 9: 2015-09-16 11:01



Photo 9: 2015-07-07 10:59



Photo 9: 2015-11-20 15:34



Photo 10: 2014-09-25 13:28



Photo 10: 2014-11-11 16:51



Photo 10: 2015-05-08 11:46



Photo 10: 2015-07-07 11:09



Photo 10: 2015-09-16 11:02



Photo 10: 2015-11-20 15:33



Photo 11: 2014-09-25 13:29



Photo 11: 2014-11-11 16:52



Photo 11: 2015-05-08 11:35



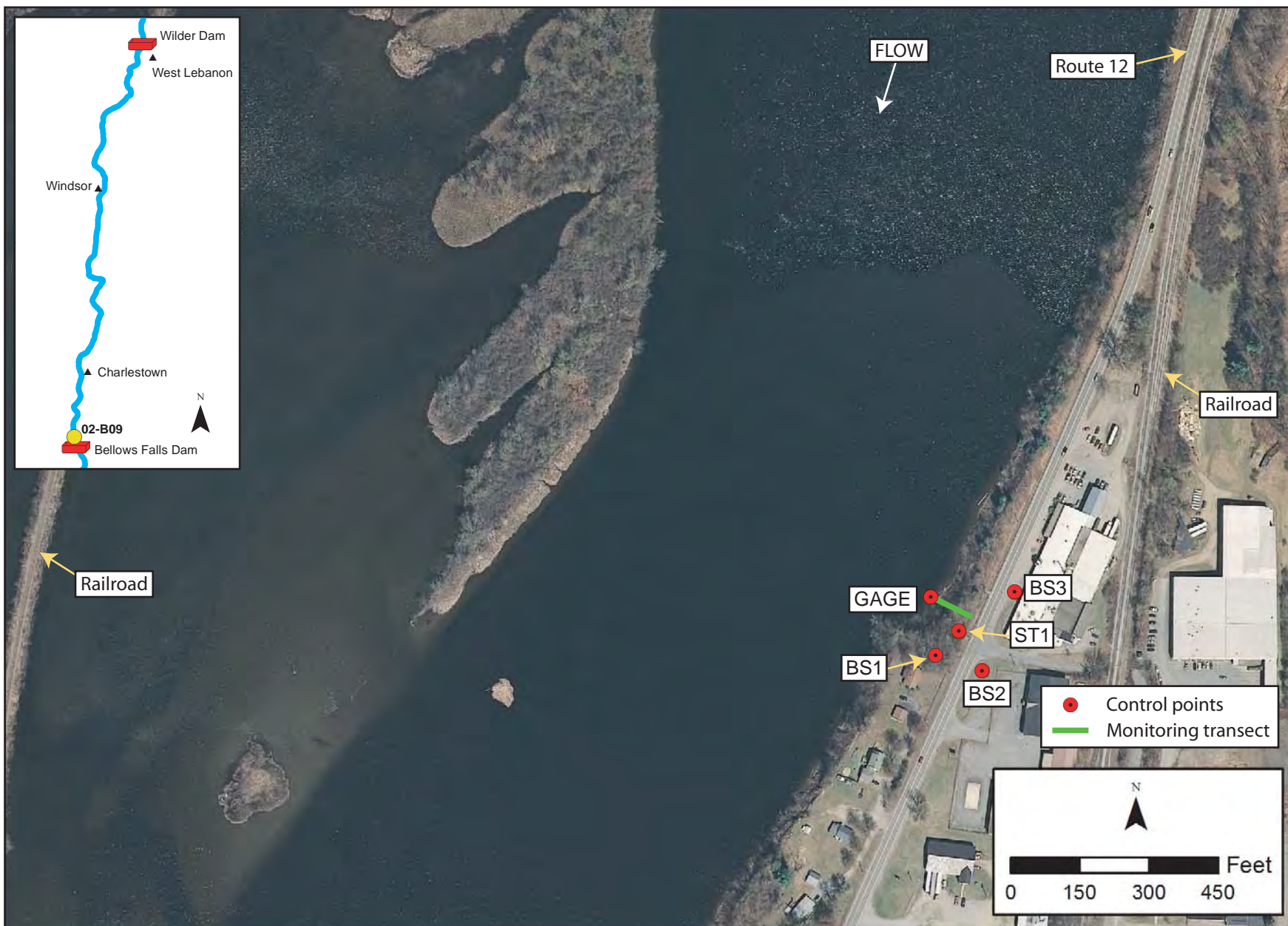
Photo 11: 2015-07-07 11:09



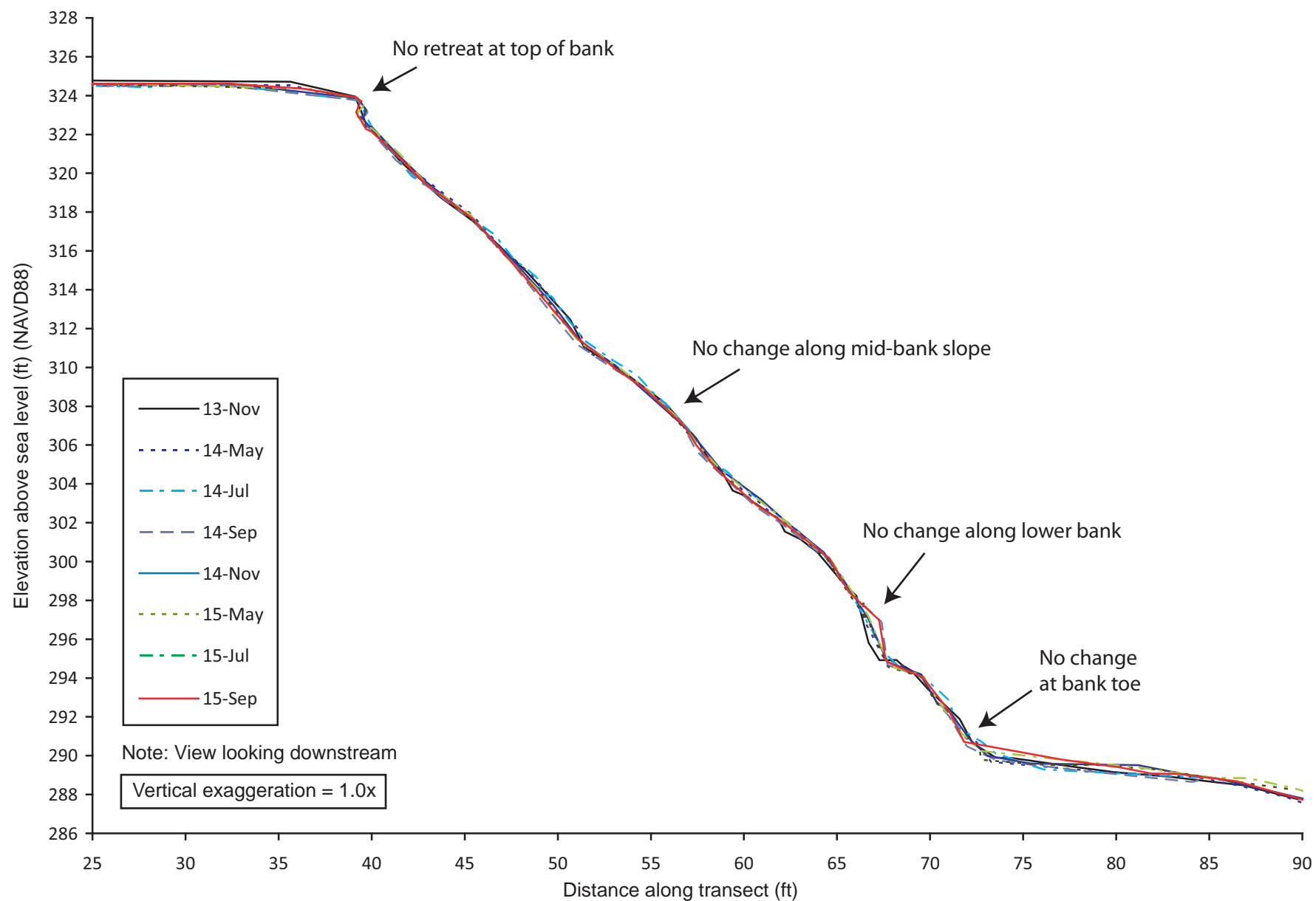
Photo 11: 2015-09-16 11:05



Photo 11: 2015-11-20 15:35

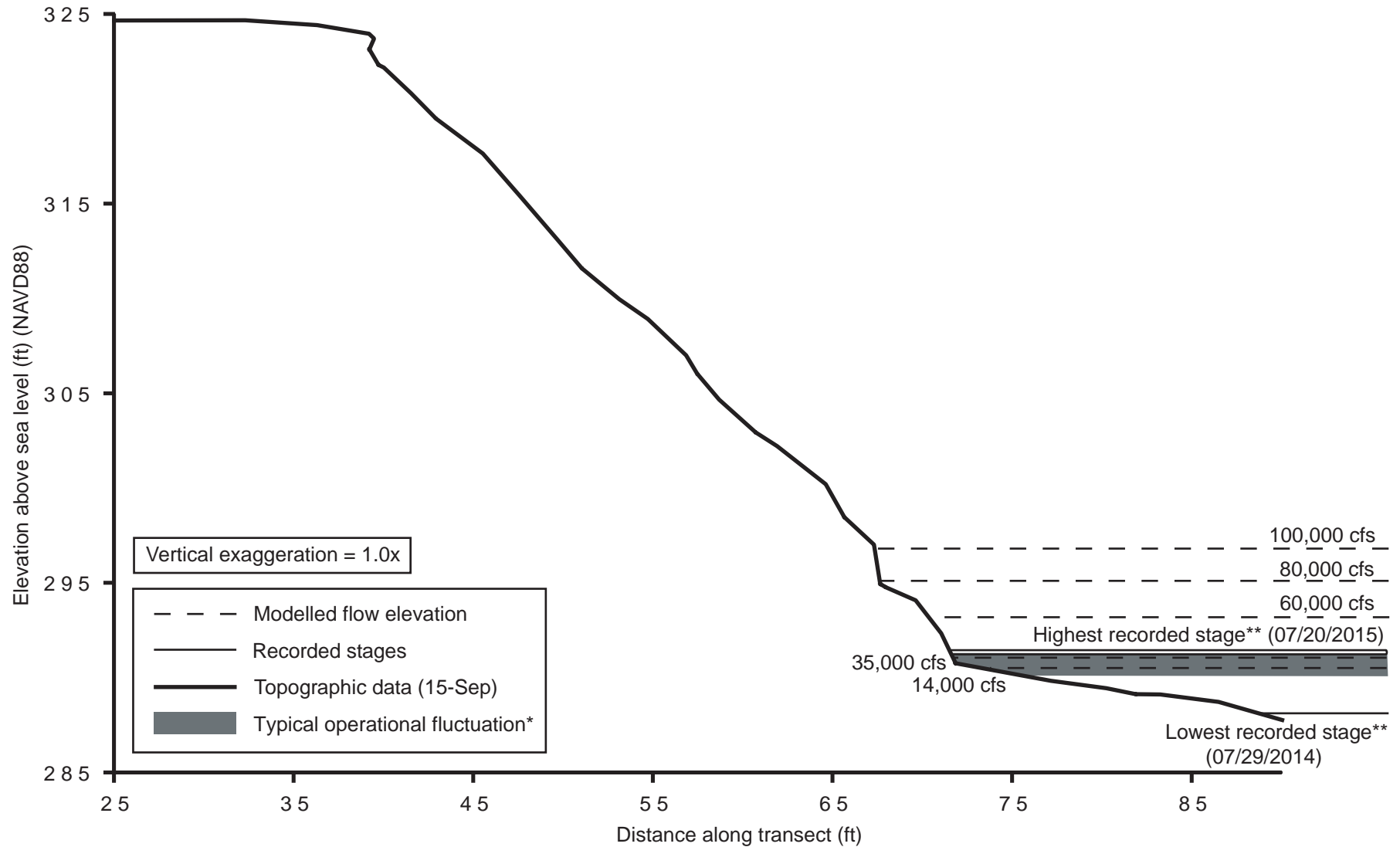


Site map for 02-B09 (North Walpole Site).



Time period	Observed changes
Summary	No retreat at top of bank. No observed changes during study period.
Initial survey (Nov-13)	High steep forested bank covered by thick saplings and immature trees. Personal communication and archival evidence suggests bank was once actively eroding.
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.

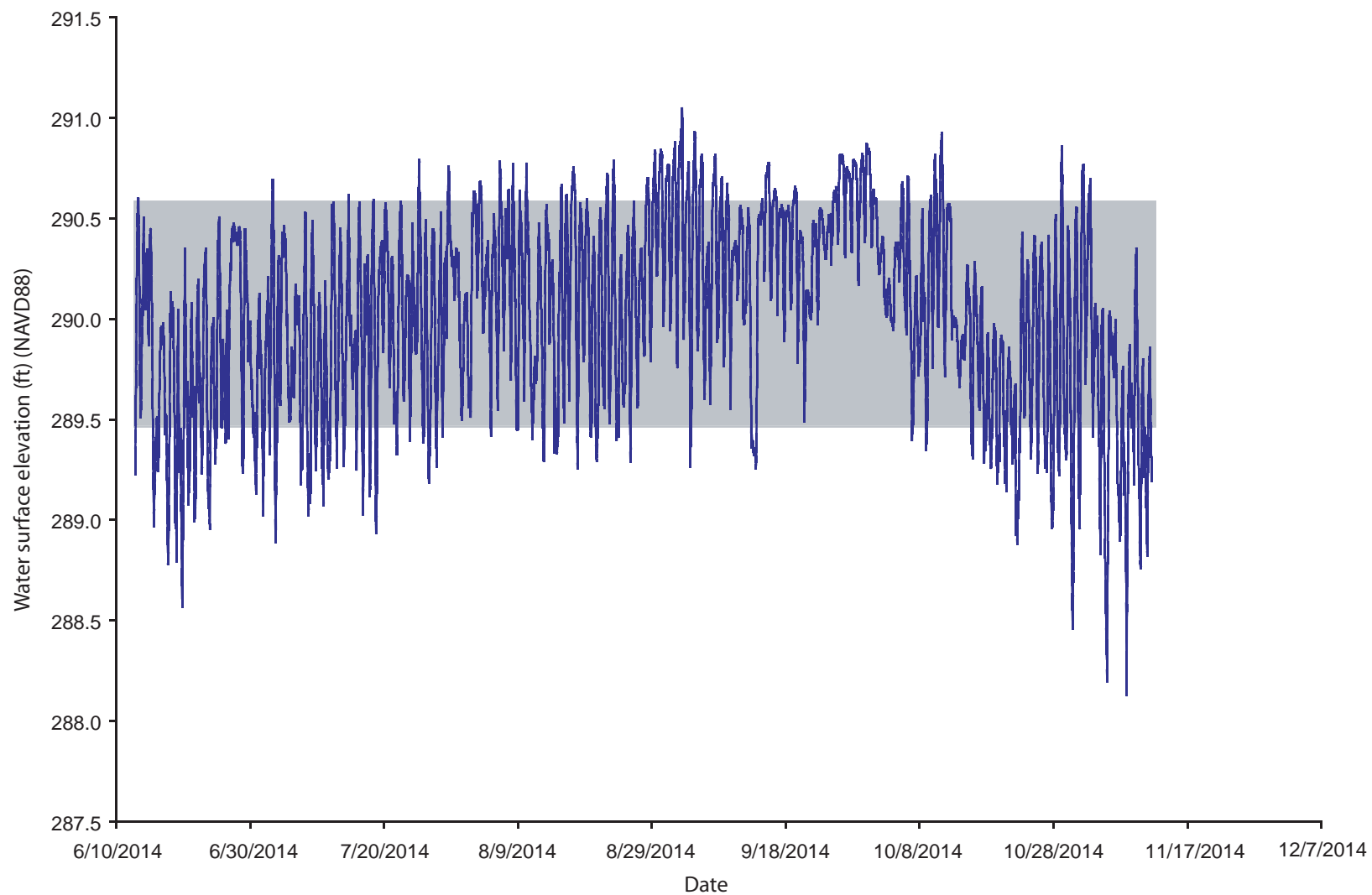
Narrative of observed changes at 02-B09 (North Walpole Site).



*Note: Typical operational fluctuation at site equals 1.15 feet

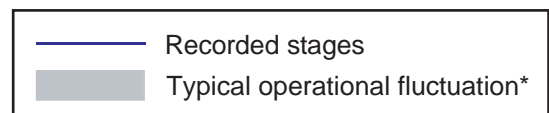
**Note: Flow stage recorded at site from 06/2014 - 11/2014 and 07/2015 - 11/2015

Selected river stages at 02-B09 (North Walpole Site).

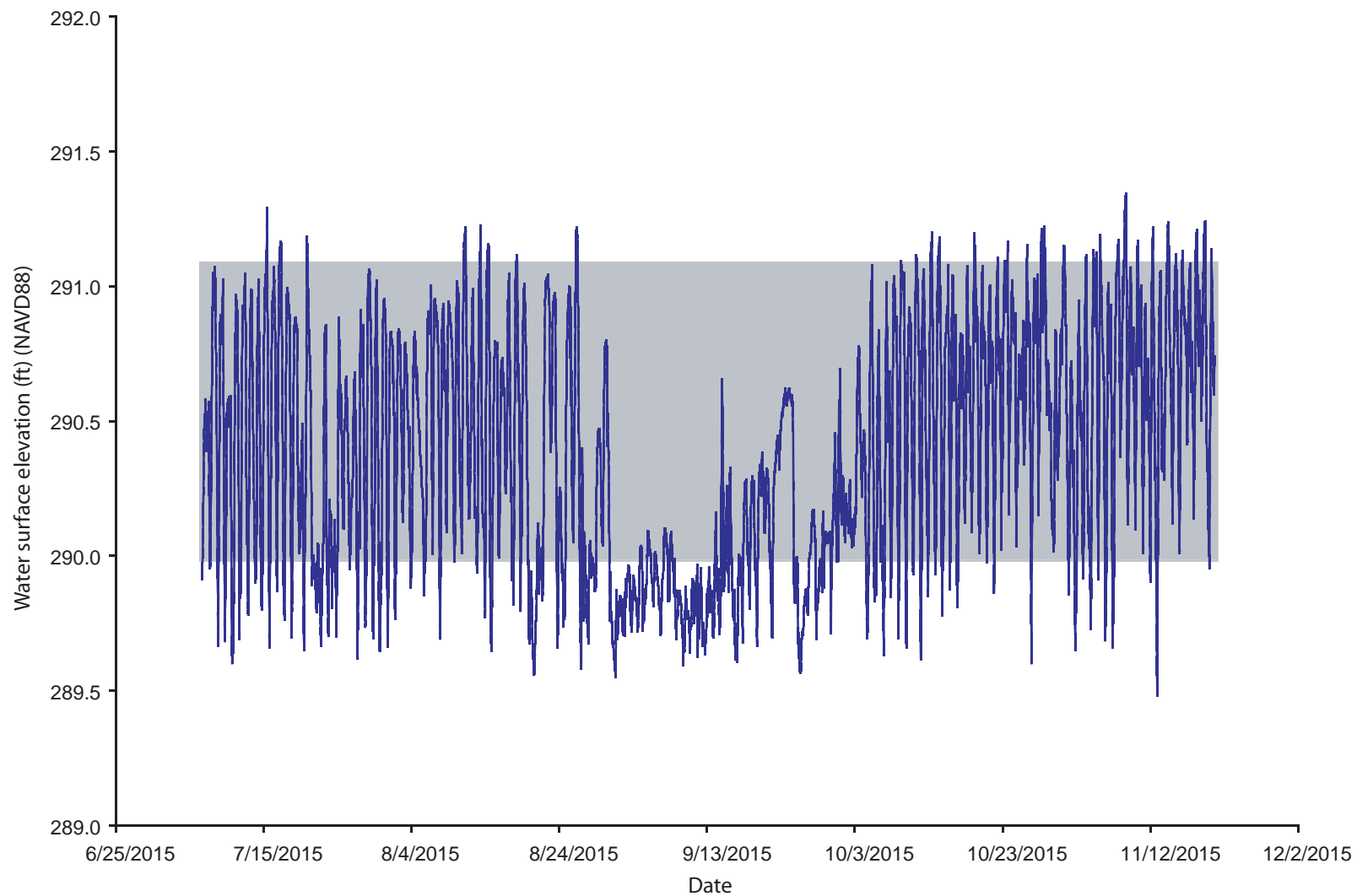


Note: Stage data in 15-minute intervals. No drawdowns below the normal minimum operating WSE at Bellows Falls dam occurred due to high inflows during the water level logger period of record in 2014.

*Note: Typical operational fluctuation at site equals 1.15 feet



Water surface elevation data (2014) for 02-B09 (North Walpole Site).

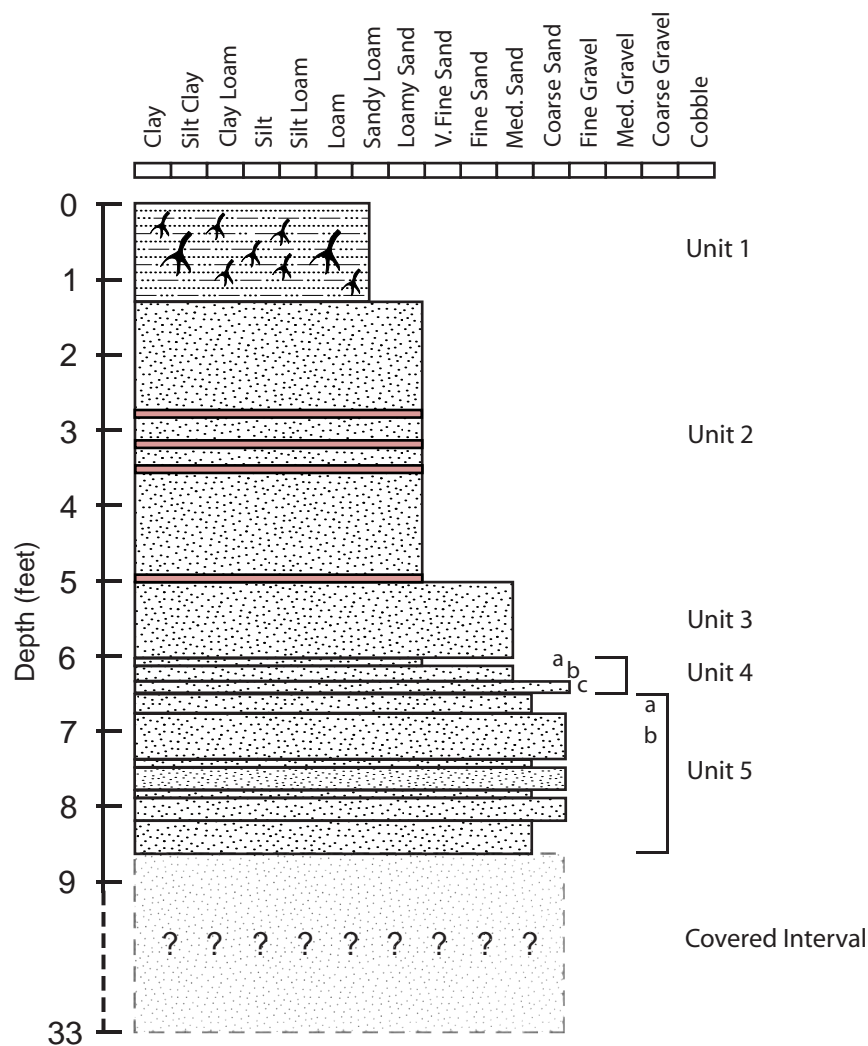


Note: Stage data in 15-minute intervals. No drawdowns below the normal minimum operating WSE at Bellows Falls dam occurred due to high inflows during the water level logger period of record in 2015.

*Note: Typical operational fluctuation at site equals 1.15 feet

— Recorded stages
— Typical operational fluctuation*

Water surface elevation data (2015) for 02-B09 (North Walpole Site).



Top elevation = 323.8 feet above sea level (NAVD88)

Unit 1: [1.3 ft thick] (2.5Y 4/2 dry, 2.5Y 3/1 wet), medium blocky, medium integrity, sandy loam with some silt, abundant organics, gradational contact with Unit 2.

Unit 2: [3.7 ft thick] (5Y 5/4 dry, 5Y 4/4 wet), medium platy, medium weak integrity, silty fine sand, includes buried soils (shown in red), sharp contact with Unit 3.

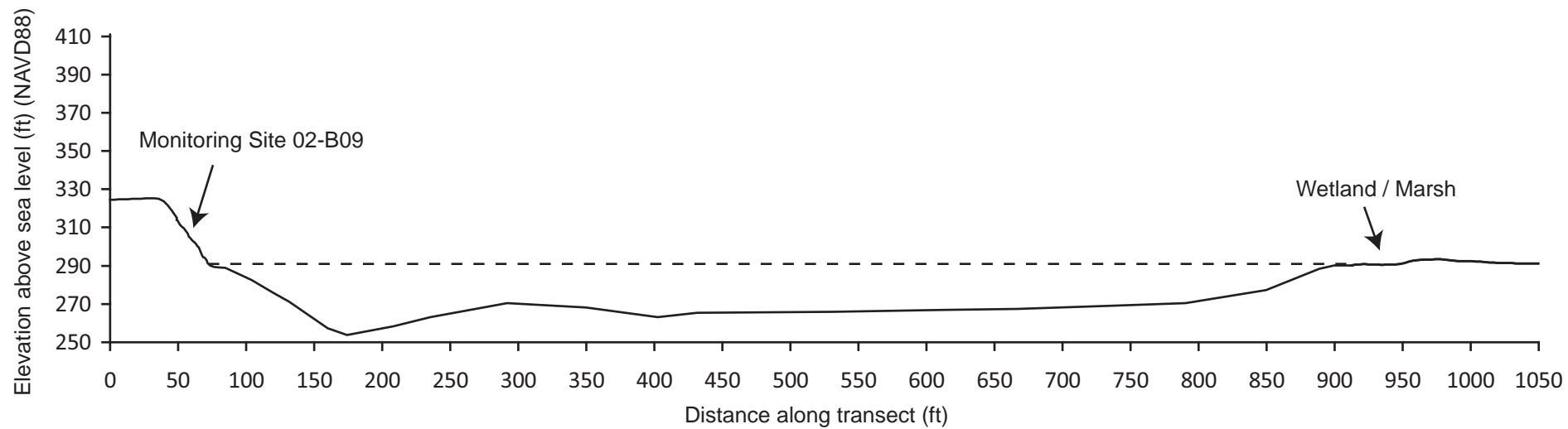
Unit 3: [1 ft thick] (2.5Y 5/4 dry, 2.5Y 3/3 wet), extremely weak coarse blocky, medium sand.

Unit 4: [0.5 ft thick] Interbedded unit, fining-upward sequence of a) [0.1 ft thick] (2.5Y 4/3 dry, 2.5Y 3/3 wet), coarse blocky medium/high integrity, sand with some silt, b) [0.2 ft thick] (2.5Y 5/3 dry, 2.5Y 4/2 wet), weak platy, medium sand, and c) [0.2 ft thick] coarse sand with 30% very fine gravel.

Unit 5: [2.3 ft thick] Interbedded unit consisting of: a) [0.1-0.5 ft thick] (2.5Y 4/4 dry, 2.5Y 3/3 wet), medium blocky with medium/coarse sand with silt, and b) [0.3-0.6 thick] medium coarse sand.

Covered Interval: [24.4 ft thick] Presumed coarse sand with minor fine gravel.

Stratigraphic column of 02-B09 (North Walpole Site).



Note: View looking downstream

Vertical exaggeration = 1.4x

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

Full river transect for 02-B09 (North Walpole Site).

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-B09	1	43.1513950	-72.4499767	132	Portrait view straight on from end of transect
02-B09	2	43.1514717	-72.4498933	96	US view toe of bank from end of transect
02-B09	3	43.1513917	-72.4500333	200	DS view beach and toe of bank from end of transect
02-B09	4	43.1512867	-72.4498517	327	Looking downslope at transect from TOB

Ground photograph locations at 02-B09 (North Walpole Site).



Photo 1: 2013-11-12 12:10



Photo 1: 2014-05-15 13:50



Photo 1: 2014-09-17 17:45



Photo 1: 2014-11-12 16:46



Photo 1: 2015-05-08 09:50

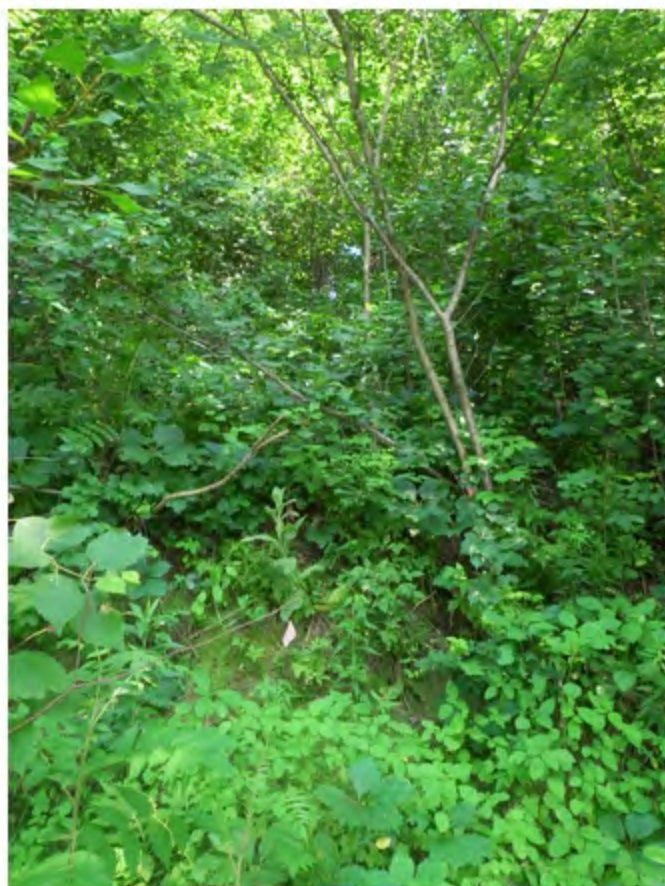


Photo 1: 2015-07-06 15:45



Photo 1: 2015-09-17 11:26



Photo 1: 2015-11-20 16:04



Photo 2: 2013-11-12 12:10



Photo 2: 2014-05-15 13:48



Photo 2: 2014-09-17 17:47



Photo 2: 2014-11-12 16:46



Photo 2: 2015-05-08 09:52



Photo 2: 2015-09-17 11:26



Photo 2: 2015-07-06 15:43



Photo 2: 2015-11-20 16:05



Photo 3: 2013-11-12 12:10



Photo 3: 2014-07-24 15:04



Photo 3: 2014-05-15 13:51



Photo 3: 2014-11-12 16:46



Photo 3: 2015-05-08 09:58



Photo 3: 2015-09-17 11:27

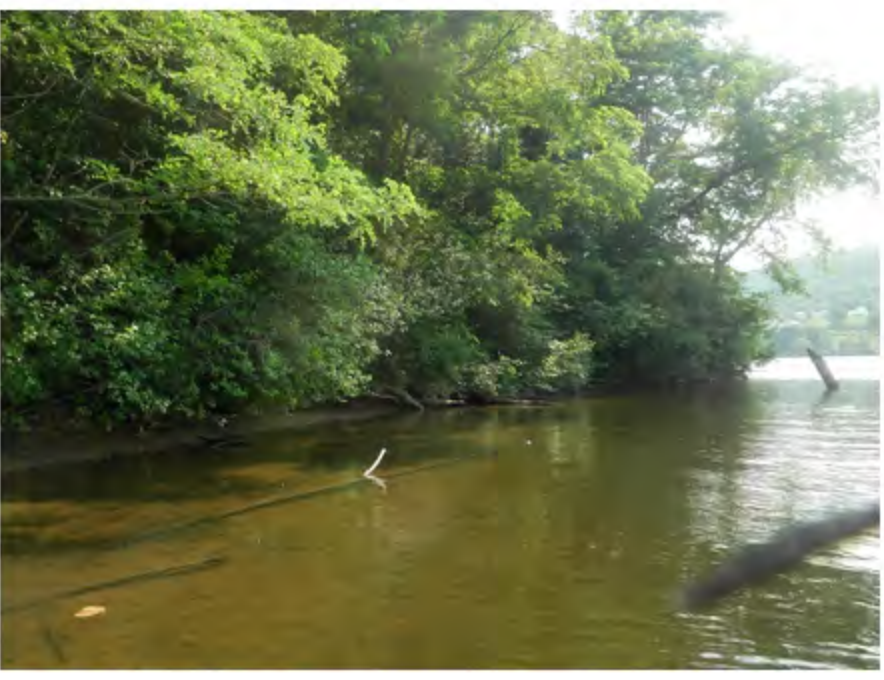


Photo 3: 2015-07-06 15:43



Photo 3: 2015-11-20 16:01



Photo 4: 2013-11-12 13:02



Photo 4: 2014-05-15 12:49



Photo 4: 2014-07-24 16:00



Photo 4: 2014-11-12 17:16



Photo 4: 2015-05-08 09:15



Photo 4: 2015-07-06 16:04



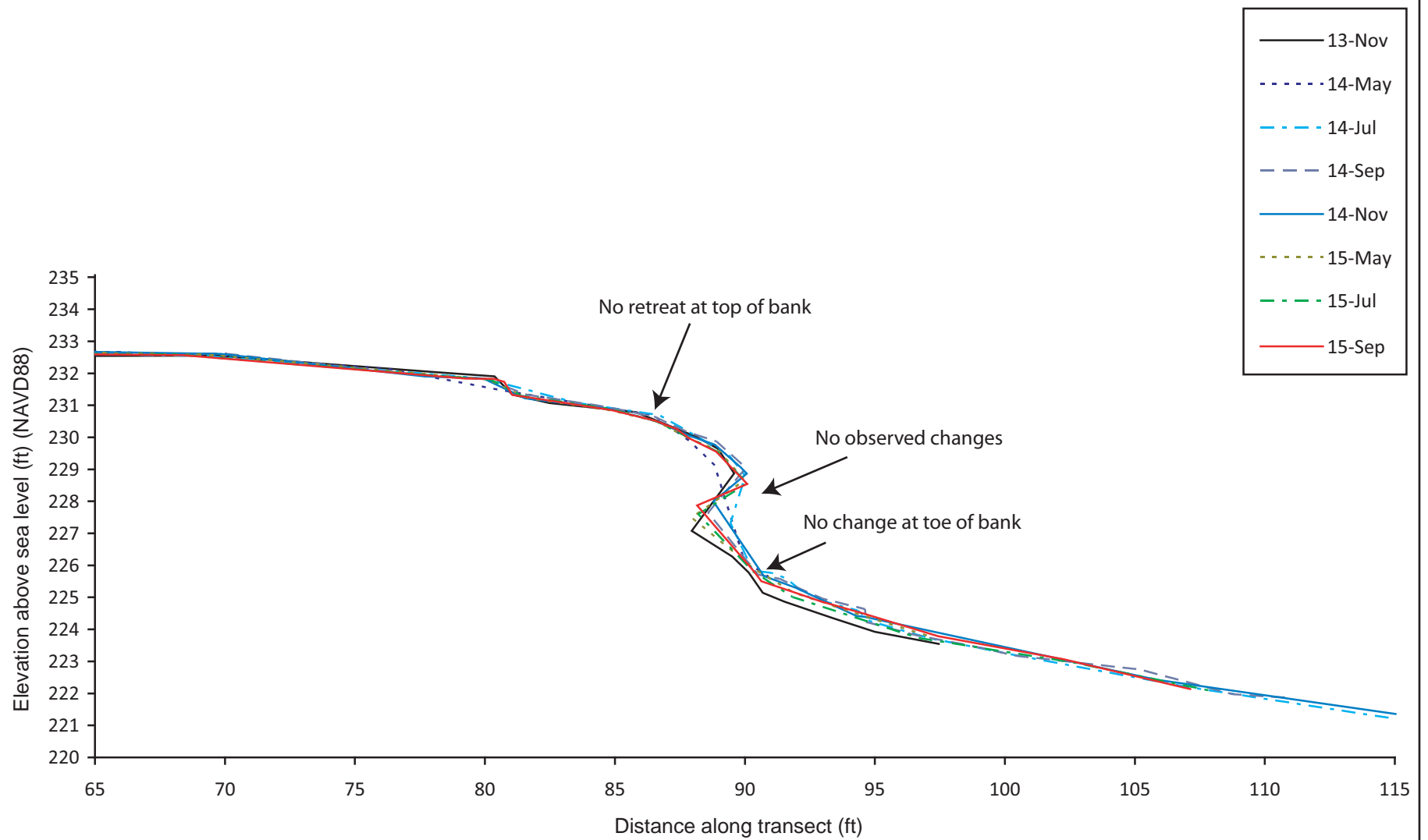
Photo 4: 2015-09-17 11:58



Photo 4: 2015-11-20 15:56



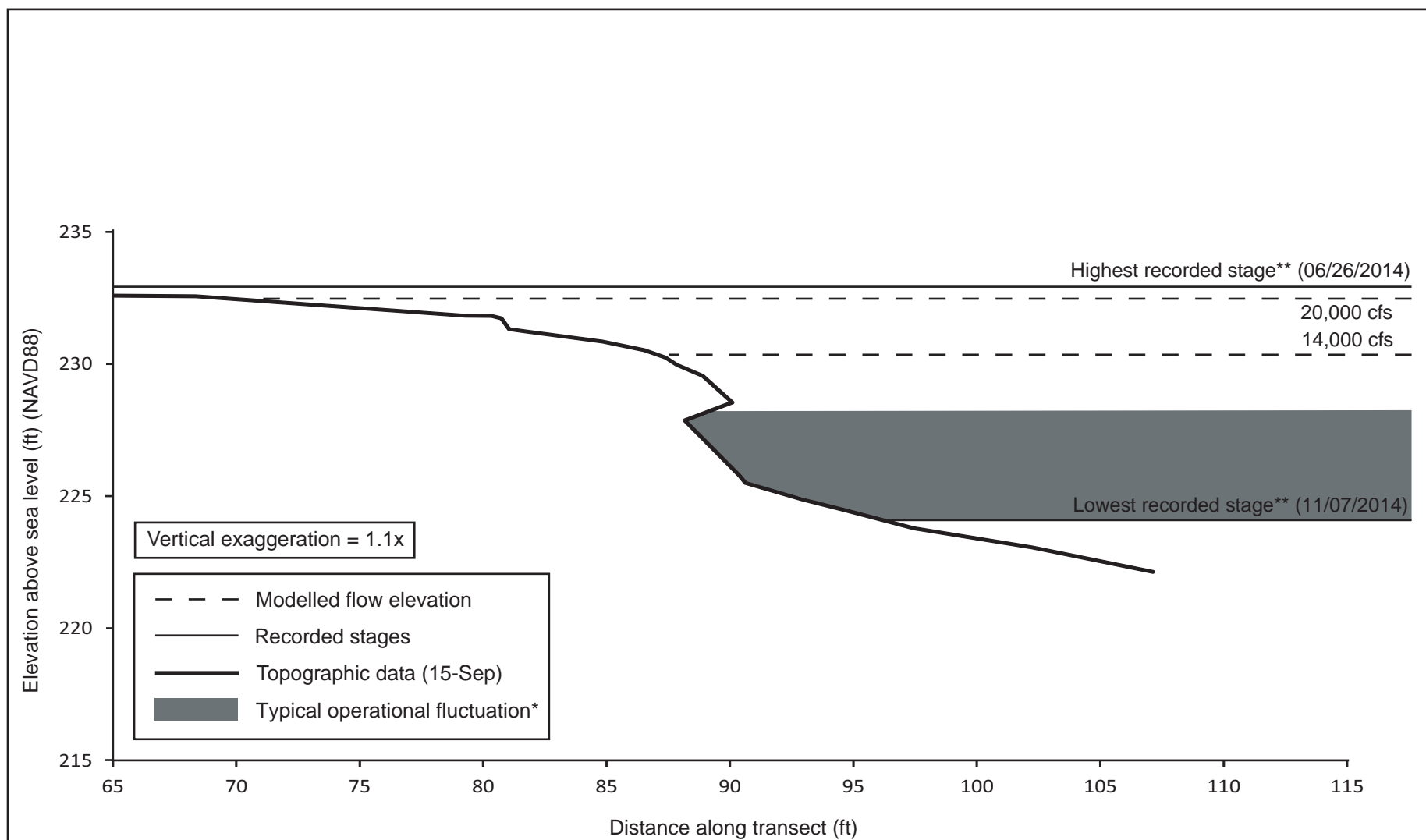
Site map for 02-BR01 (Walpole Beach Site).



Erosion monitoring transect for 02-BR01 (Walpole Beach Site).

Time period	Observed changes
Summary	No retreat at top of bank. No observed changes at site over study period.
Initial survey (Nov-13)	Site consists of low alluvial sandy bank with overhanging soil apron / root mat. Bank is well-vegetated with red osier dogwood and other shrubs and herbaceous plants. Coarse channel bed largely composed of cobbles.
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.

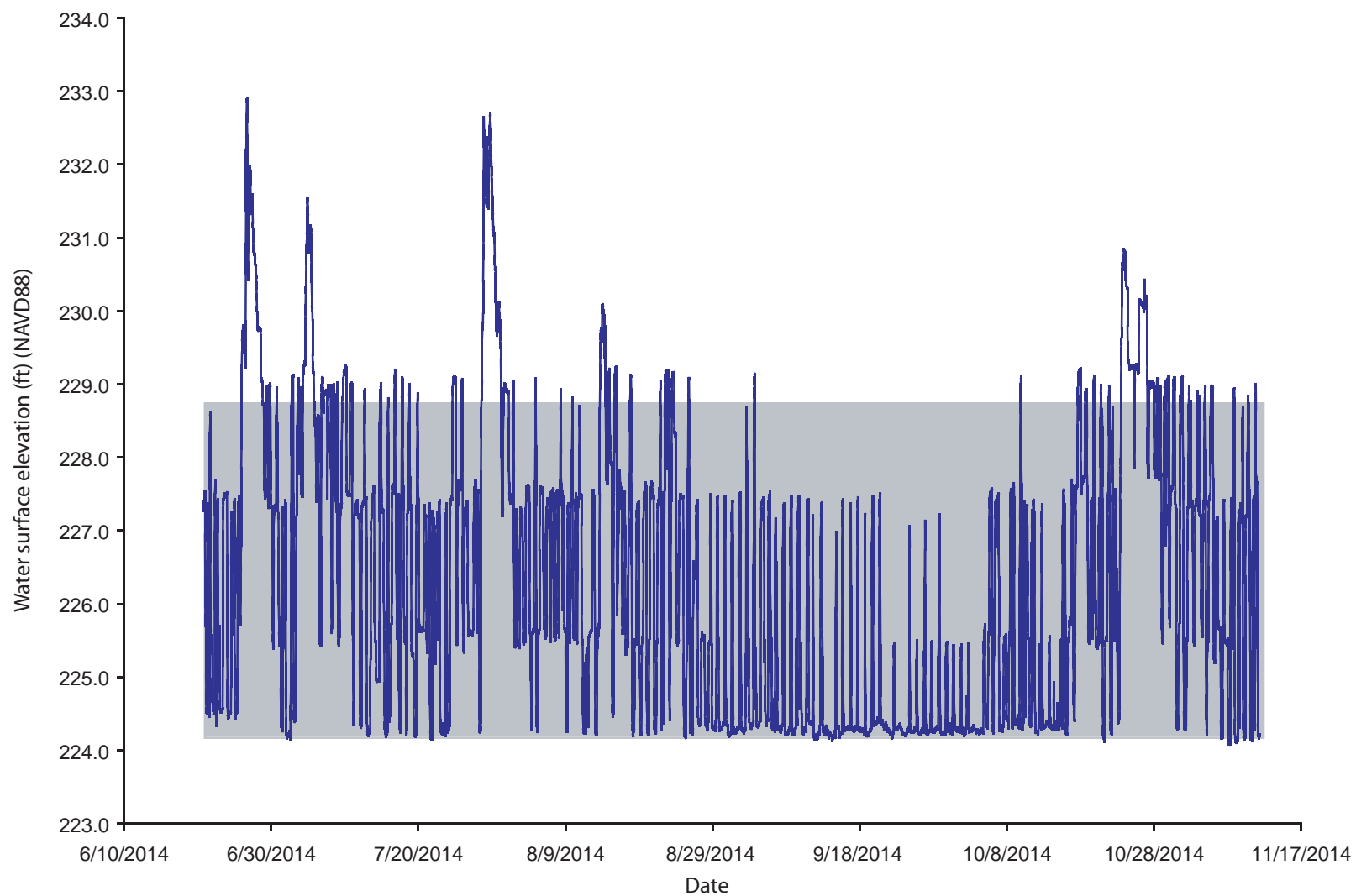
Narrative of observed changes at 02-BR01 (Walpole Beach Site).



*Note: Typical operational fluctuation at site equals 4 feet

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

Selected river stages at 02-BR01 (Walpole Beach Site).

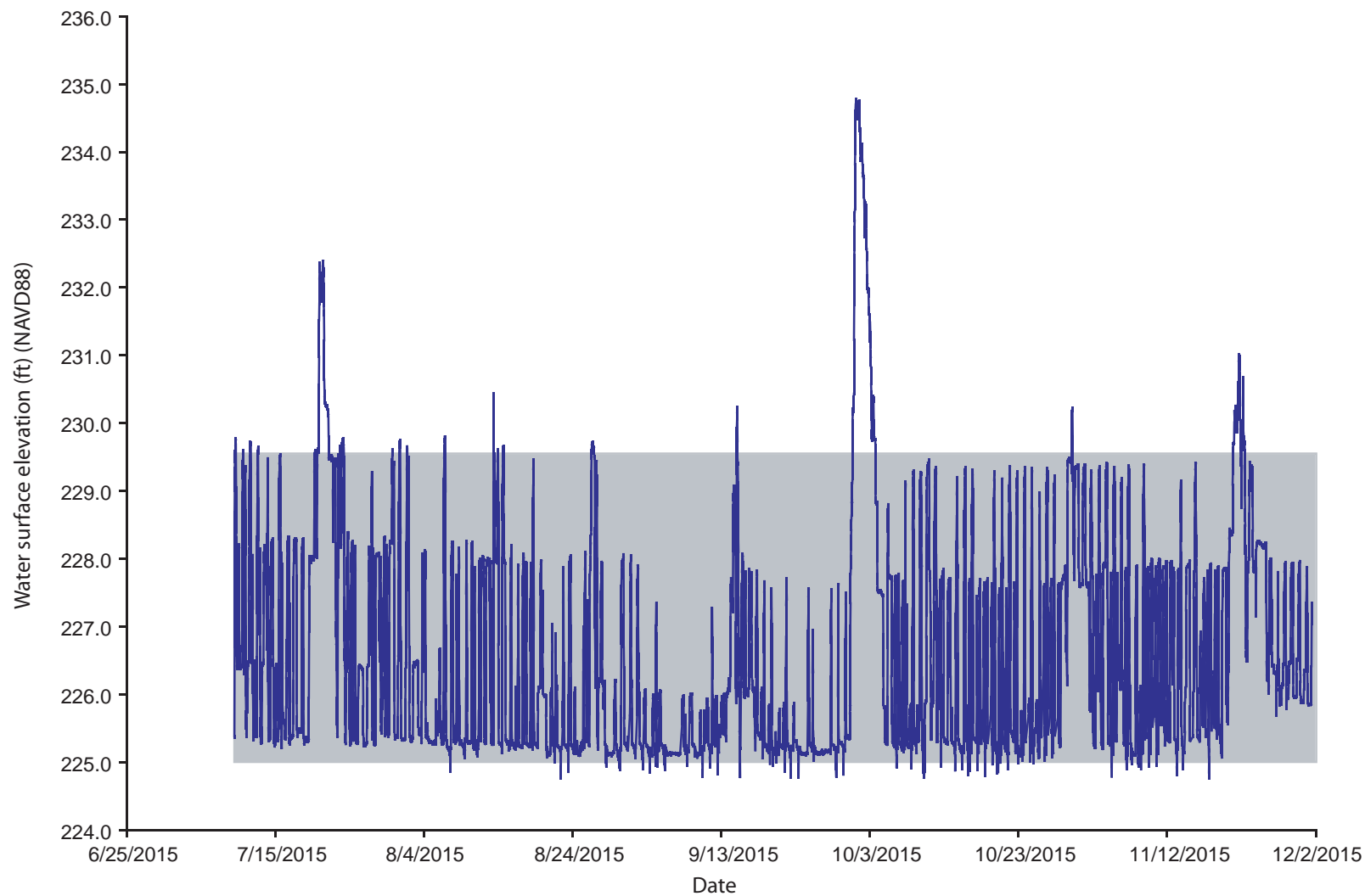


Note: Stage data in 15-minute intervals. No drawdowns below the normal minimum operating WSE at Bellows Falls dam occurred due to high inflows during the water level logger period of record in 2014.

*Note: Typical operational fluctuation at site equals 4.55 feet

— Recorded stages
— Typical operational fluctuation*

Water surface elevation data (2014) for 02-BR01 (Walpole Beach Site).

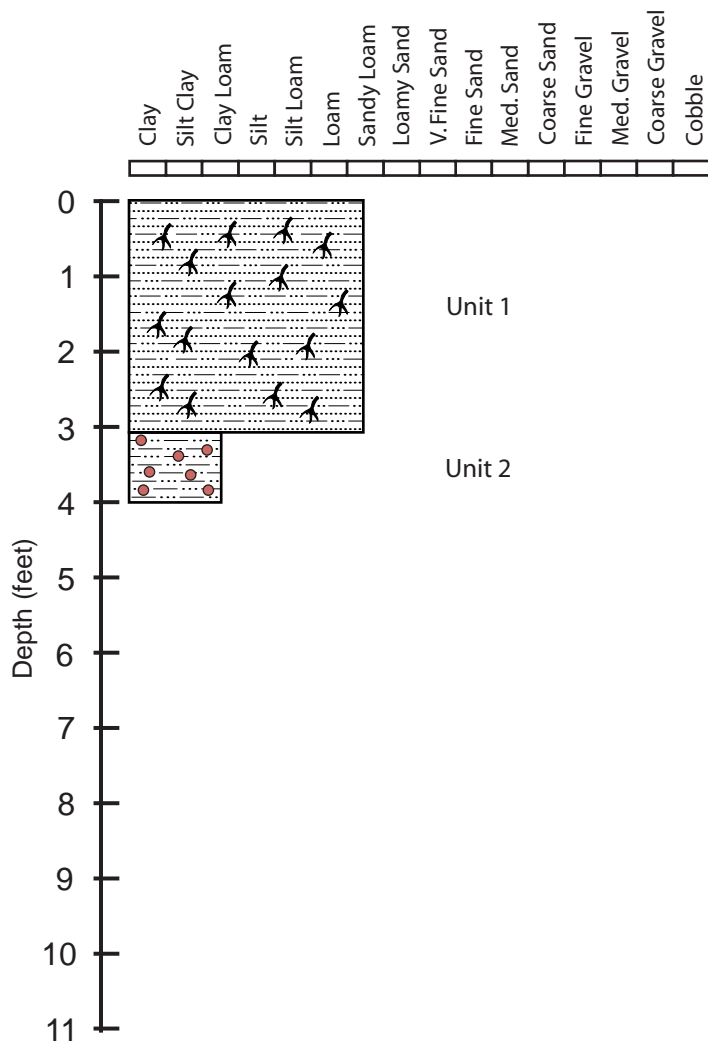


Note: Stage data in 15-minute intervals. No drawdowns below the normal minimum operating WSE at Bellows Falls dam occurred due to high inflows during the water level logger period of record in 2015.

*Note: Typical operational fluctuation at site equals 4.55 feet

— Recorded stages
— Typical operational fluctuation*

Water surface elevation data (2015) for 02-BR01 (Walpole Beach Site).

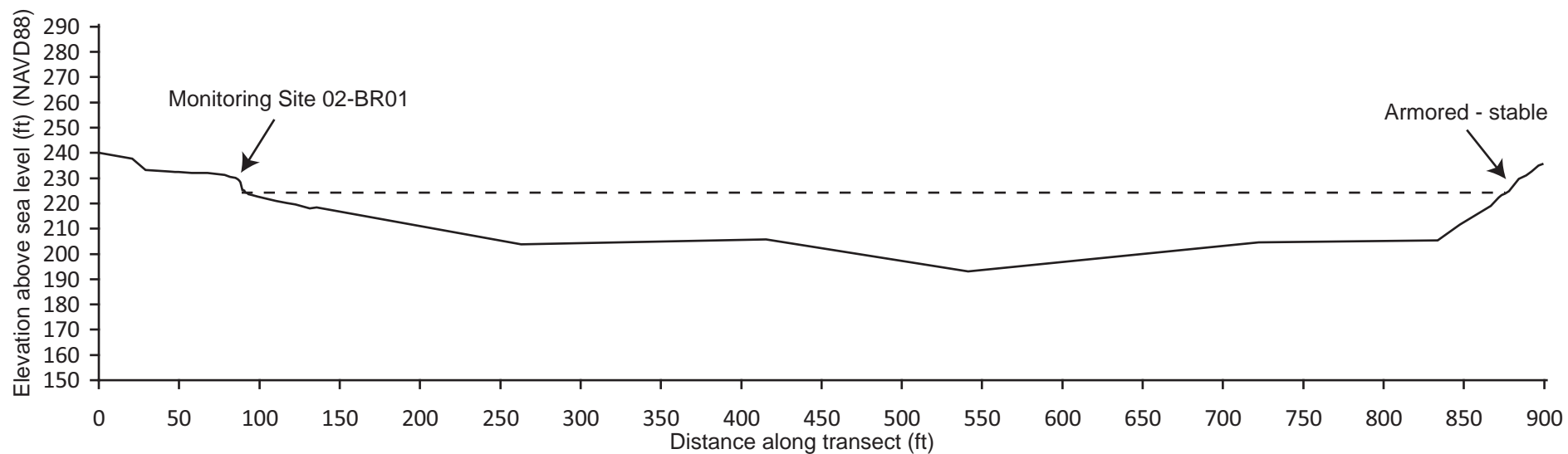


Top elevation = 229.0 feet above sea level (NAVD88)

Unit 1: [3.1 ft thick] (10YR 4/1 dry, 10YR 3/1 wet), weak small granular, fine sandy loam with minor silt and clay and abundant small roots; sharp contact with Unit 2.

Unit 2: [0.9 ft thick] (GLE Y1 4/10Y wet), medium strength large blocky clay loam, minor organics and abundant small oxidized nodules.

Stratigraphic column of 02-BR01 (Walpole Beach Site).



Note: View looking downstream

Vertical exaggeration = 1.5x

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

Full river transect for 02-BR01 (Walpole Beach Site).

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-BR01	1	43.1306750	-72.4390817	82	Straight on view from end of transect
02-BR01	2	43.1307283	-72.4391550	151	DS view from transect
02-BR01	3	43.1307200	-72.4391017	7	US view from transect
02-BR01	4	43.1312267	-72.4395783	141	DS overview of site from beach upstream

Ground photograph locations at 02-BR01 (Walpole Beach Site).



Photo 1: 2013-11-12 17:20



Photo 1: 2014-09-18 09:35



Photo 1: 2014-07-23 14:21



Photo 1: 2014-11-11 09:24



Photo 1: 2015-05-19 10:00



Photo 1: 2015-07-09 10:55



Photo 1: 2015-09-17 12:24



Photo 1: 2015-12-01 10:35



Photo 2: 2013-11-12 17:20



Photo 2: 2014-07-23 14:21



Photo 2: 2014-09-18 09:37



Photo 2: 2014-11-11 09:23



Photo 2: 2015-05-19 09:59



Photo 2: 2015-09-17 12:24



Photo 2: 2015-07-09 10:54



Photo 2: 2015-12-01 10:35



Photo 3: 2013-11-12 17:20



Photo 3: 2014-07-23 14:21



Photo 3: 2014-09-18 09:36



Photo 3: 2014-11-11 09:24



Photo 3: 2015-05-19 10:00



Photo 3: 2015-07-09 10:56



Photo 3: 2015-09-17 12:25



Photo 3: 2015-12-01 10:36



Photo 4: 2013-11-12 17:32

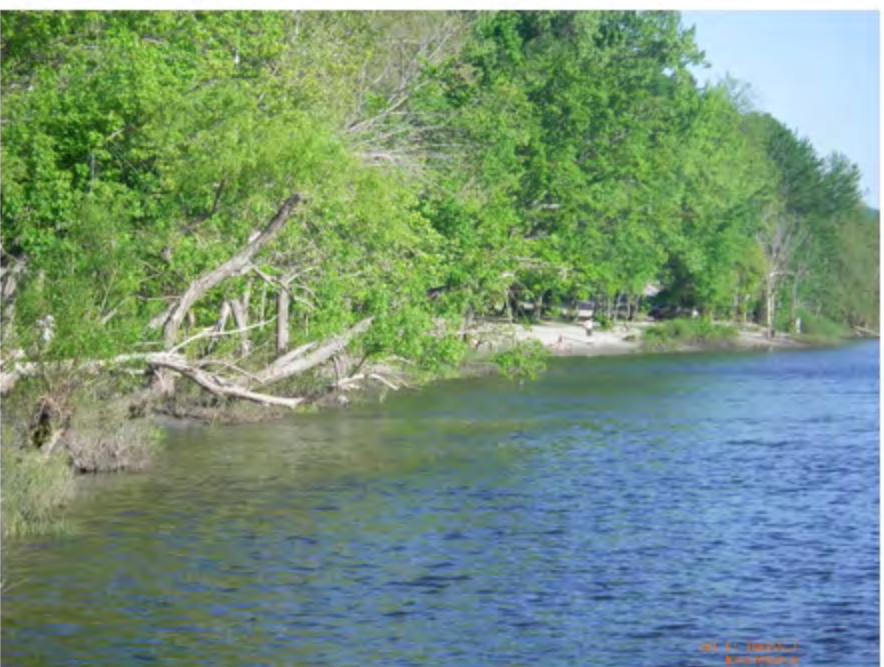


Photo 4: 2014-06-02 17:48



Photo 4: 2014-09-18 09:38



Photo 4: 2014-11-11 09:21



Photo 4: 2015-05-19 10:03



Photo 4: 2015-07-09 10:52



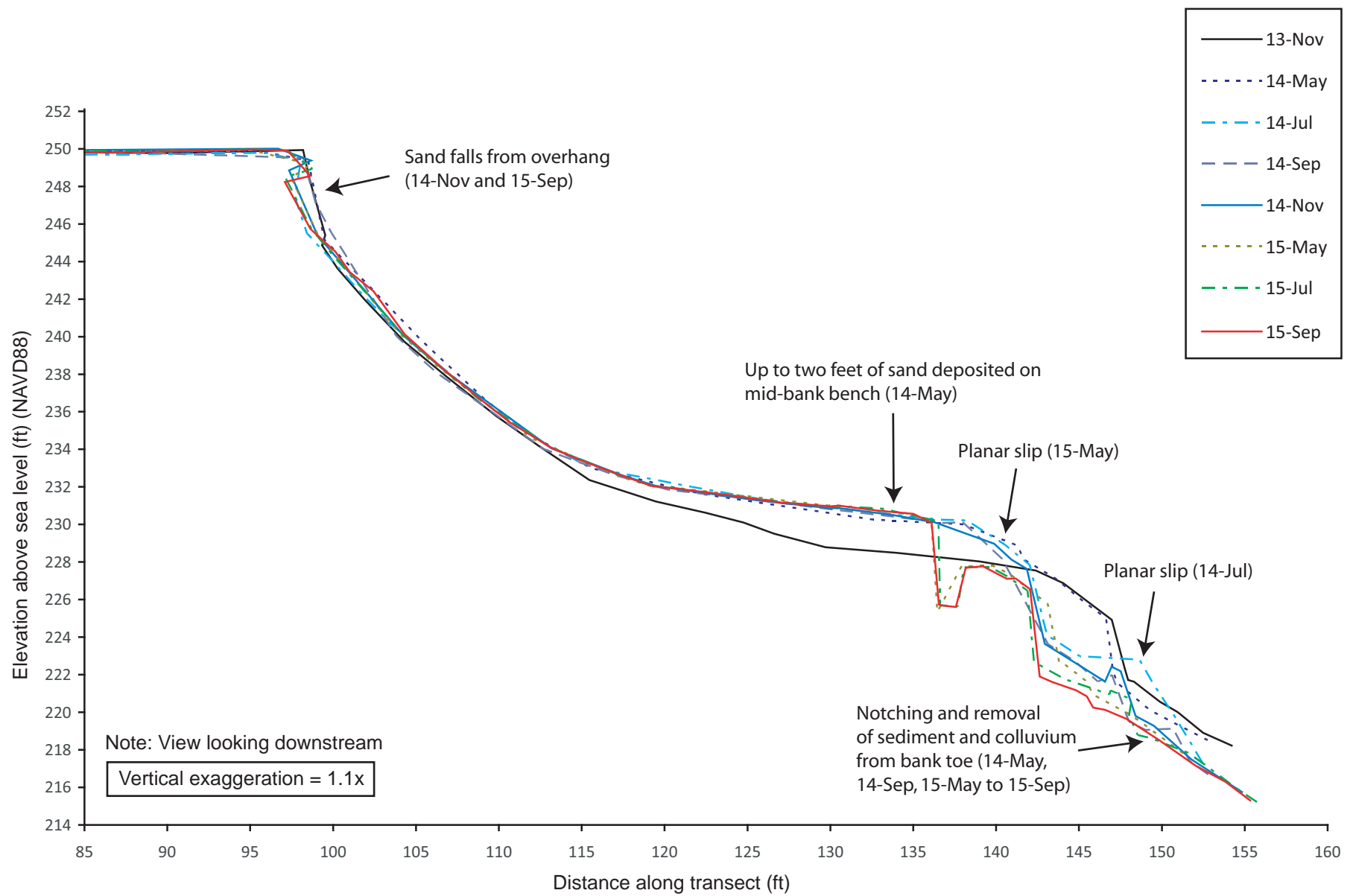
Photo 4: 2015-09-17 12:27



Photo 4: 2015-12-01 10:38



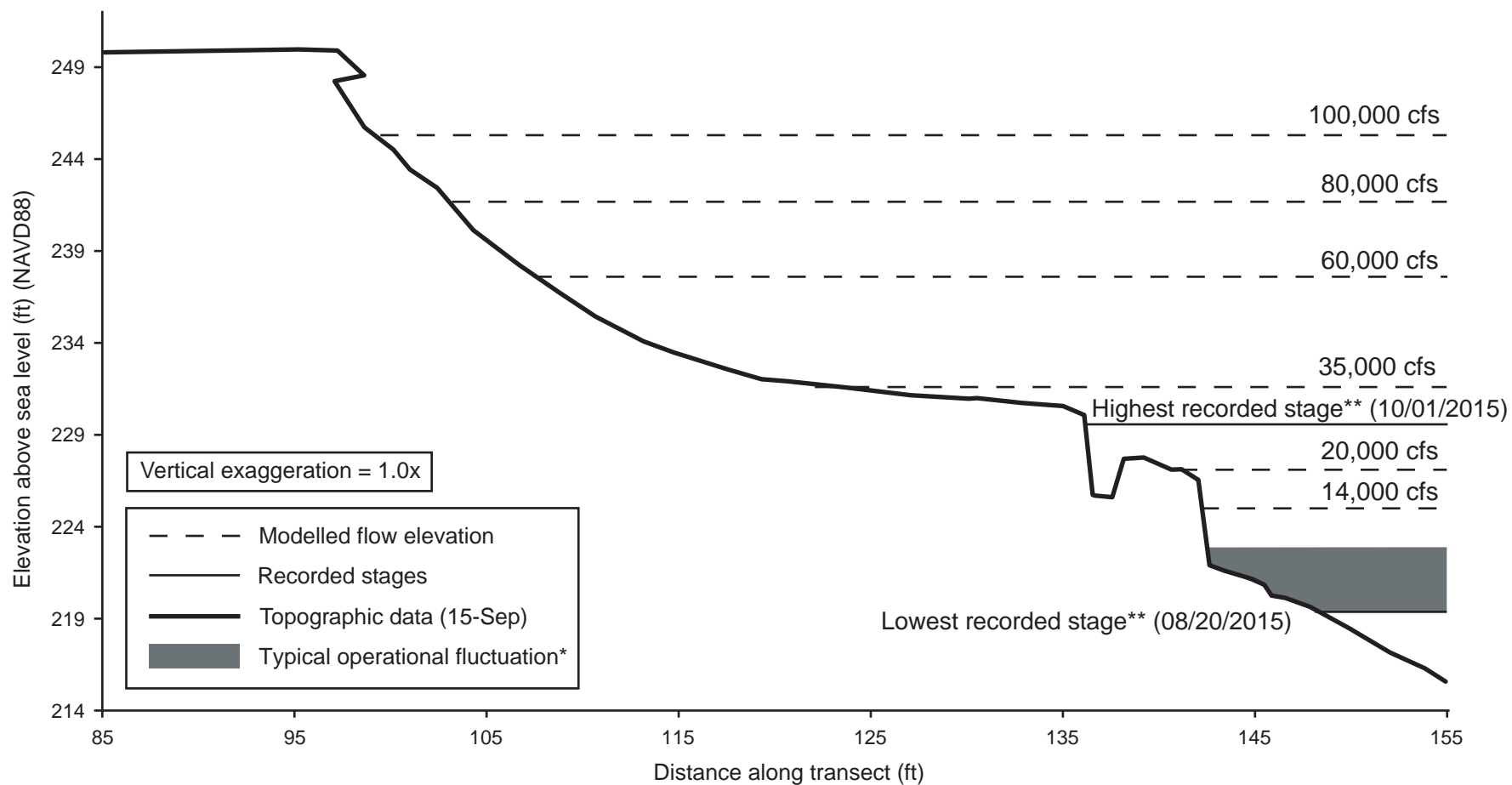
Site map for 02-BR05 (Malnati Site).



Erosion monitoring transect for 02-BR05 (Malnati Site).

Time period	Observed changes
Summary	No retreat at top of bank. Large volume of fine sand deposited on mid-bank bench from Nov-13 to May-14, along with recruited LWD. Planar slips in lower bank occur twice (Jul-14 and May-15) removing front of mid-bank bench. Overall toe of bank retreated 2.9 feet.
Initial survey (Nov-13)	Site consists of high arcuate slip with sand exposed in upper scarp. Mid-bank bench appears to be slip block that detached from upper scarp face. Herbaceous vegetation and sumac in transect.
November 2013 to May 2014	Up to two feet of fine sand deposited on mid-bank bench around recruited LWD. Stress cracks noted on bench surface. Notching at toe of bank.
May to July 2014	Large planar slip in lower bank. Slip block deposited at bank toe.
July to September 2014	Disintegration of slip block at base of bank. Notching and removal of material from slip block causes bank toe to retreat 1.5 feet.
September to November 2014	Sand falling from overhanging top of bank increases depth of overhang.
November 2014 to May 2015	Large planar slip as block detaches from front of mid-bank bench. Removal of sediment from base of bank results in retreat of 2.1 feet at bank toe.
May to July 2015	Slip block at base of bank breaks apart into topples. Detachment at back of slip block widens.
July to September 2015	Topple blocks removed at base of bank. Sand falling from overhanging top of bank increases depth of overhang.

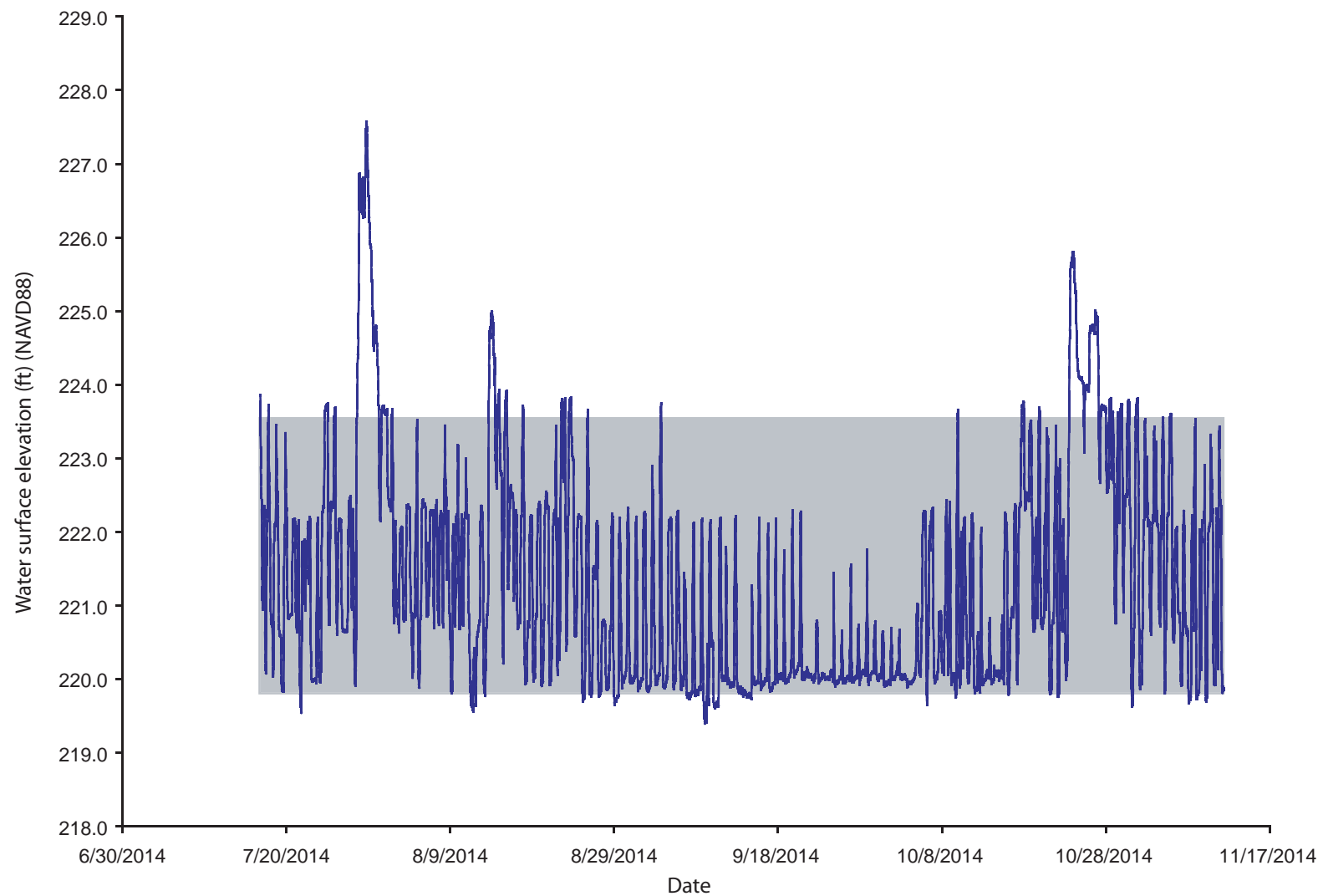
Narrative of observed changes at 02-BR05 (Malnati Site).



*Note: Typical operational fluctuation at site equals 3.5 feet

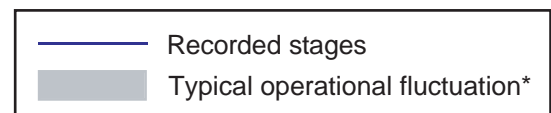
**Note: Flow stage recorded at site from 06/2014 - 11/2014 and 07/2015 - 11/2015

Selected river stages at 02-BR05 (Malnati Site).

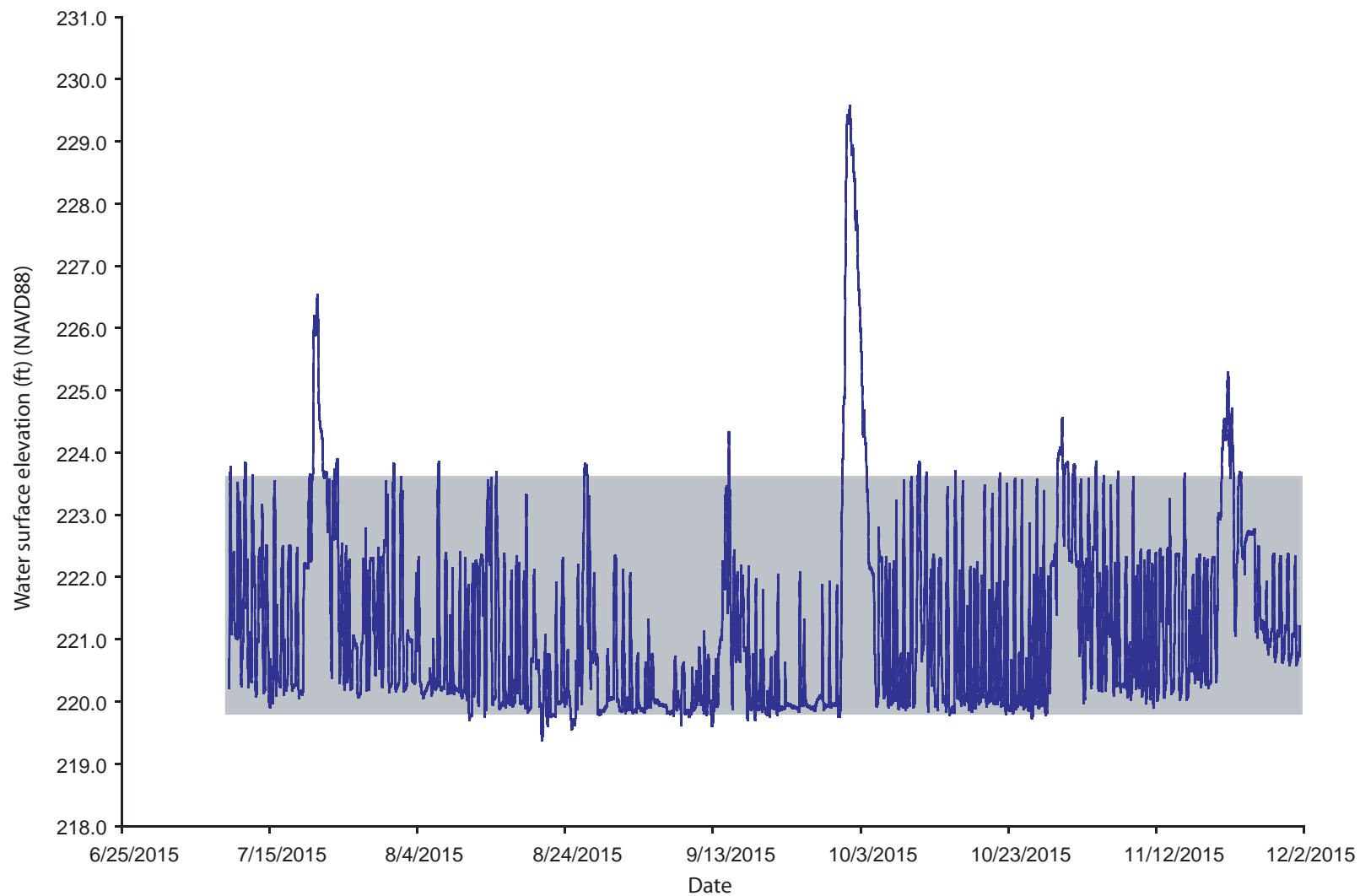


Note: Stage data in 15-minute intervals. No drawdowns below the normal minimum operating WSE at Bellows Falls dam occurred due to high inflows during the water level logger period of record in 2014.

*Note: Typical operational fluctuation at site equals 3.79 feet



Water surface elevation data (2014) for 02-BR05 (Malnati Site).

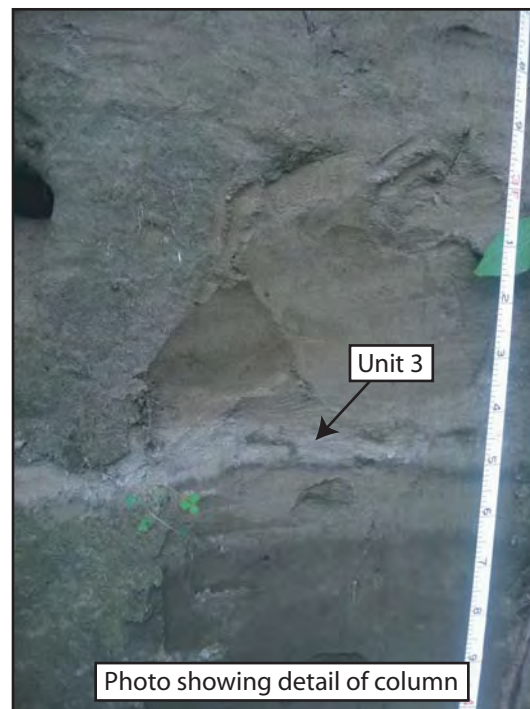
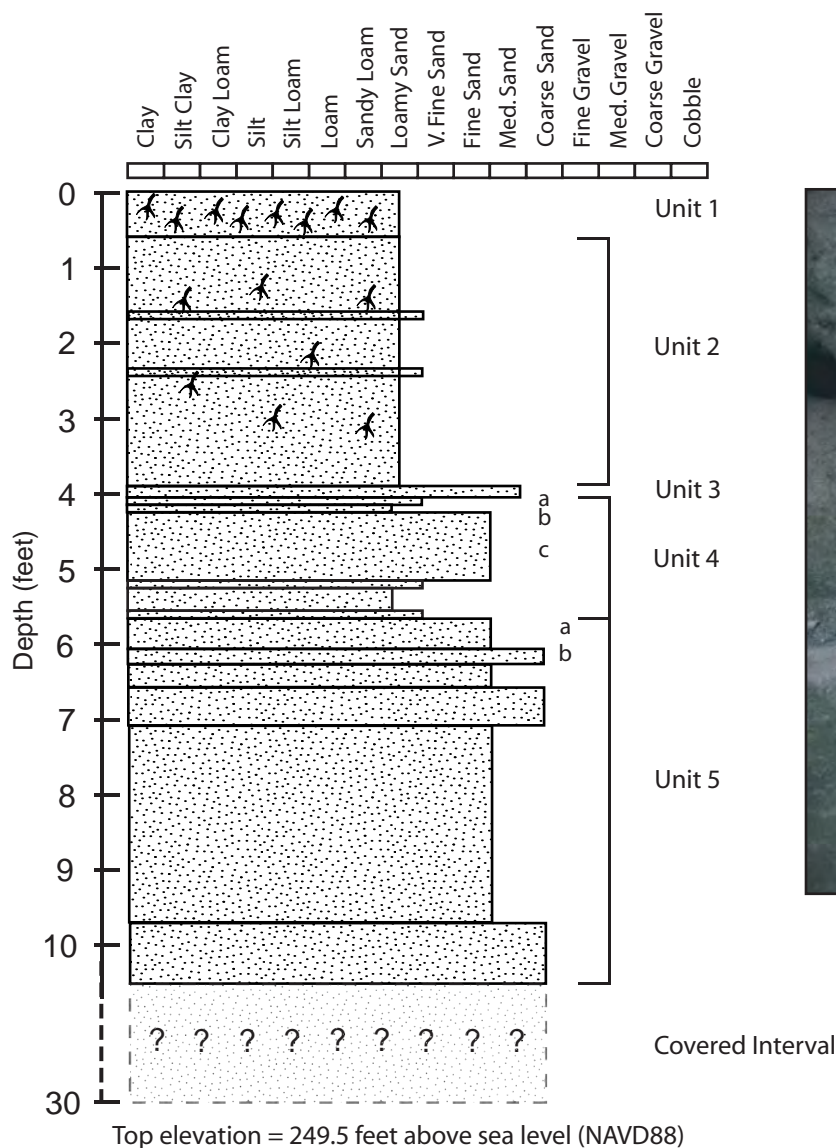


Note: Stage data in 15-minute intervals. No drawdowns below the normal minimum operating WSE at Bellows Falls dam occurred due to high inflows during the water level logger period of record in 2015.

*Note: Typical operational fluctuation at site equals 3.79 feet

— Recorded stages
— Typical operational fluctuation*

Water surface elevation data (2015) for 02-BR05 (Malnati Site).



Unit 1: [0.6 ft thick] (2.5Y 4/3 dry, 10YR 2/1 wet), medium size granular, silty fine sand with some organics and abundant small roots; sharp contact with Unit 2.

Unit 2: [3.3 ft thick] (2.5Y 3/3 wet), weak medium platy structure, fine sand with silt and some small roots, whiter sandier lenses; sharp contact with Unit 3.

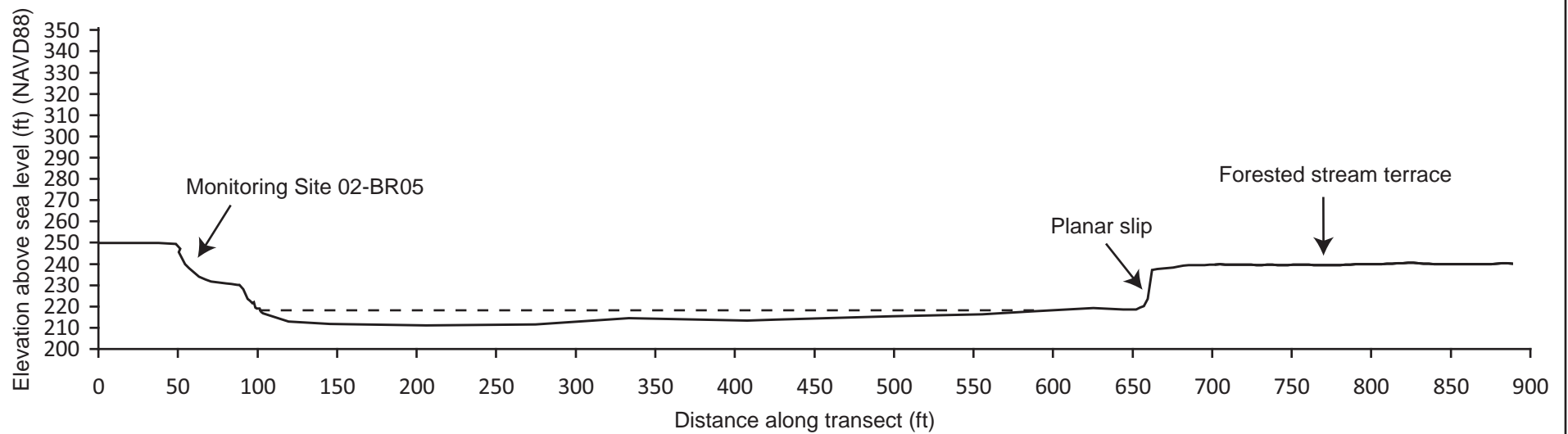
Unit 3: [0.2 ft thick] (2.5Y 3/2 wet), weak platy small texture, medium to coarse sand, white, with quartz most abundant; sharp contact with Unit 4.

Unit 4: [1.6 ft thick] Interbedded unit consisting of: a) [0.1 ft thick] (2.5Y 3/1 wet), small weak granular, medium to fine sand with some silt and organics; b) [0.1-0.3 ft thick] (5Y 3/2 wet), medium platy, tan, medium to fine sand with some silt, and c) [1.0 ft thick] (2.5Y 3/1 wet), small granular weak, fine to medium sand with minor silt.

Unit 5: [4.8 ft thick] Interbedded unit consisting of: a) [0.3-2.6 ft thick] (2.5Y 4/2 wet), medium platy weak granular, fine to medium sand; diffuse contacts with b) [0.2-0.8 ft thick] (2.5Y 4/2 wet), medium platy weak granular, coarse sand.

Covered Interval: [19.5 ft thick] Presumed coarse sand.

Stratigraphic column of 02-BR05 (Malnati Site).



Note: View looking downstream

Vertical exaggeration = 1.3x

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

Full river transect for 02-BR05 (Malnati Site).

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-BR05	1	43.0963683	-72.4377517	127	From end of transect, view of lower bank
02-BR05	2	43.0964317	-72.4377683	340	US view of toe from end of transect
02-BR05	3	43.0963983	-72.4377533	156	DS view of toe from end of transect
02-BR05	4	43.0962472	-72.4377528	91	Straight on view
02-BR05	5	43.0962472	-72.4377528	143	DS view of lower bank
02-BR05	6	43.0963783	-72.4375967	331	US view from rebar at TOB
02-BR05	7	43.0964250	-72.4375867	177	DS oblique view of upper scarp in transect
02-BR05	8	43.0963500	-72.4375983	253	View from top of bank of midbank in transect

Ground photograph locations at 02-BR05 (Malnati Site).



Photo 1: 2013-11-12 15:28



Photo 1: 2014-07-15 15:23



Photo 1: 2014-06-03 17:05



Photo 1: 2014-09-22 13:48



Photo 1: 2015-05-19 11:23



Photo 1: 2015-07-09 12:25



Photo 1: 2015-09-17 13:53



Photo 1: 2015-12-01 11:09



Photo 2: 2013-11-12 15:28



Photo 2: 2014-06-03 17:05



Photo 2: 2014-09-22 13:49



Photo 2: 2014-11-12 10:06



Photo 2: 2015-05-19 11:22



Photo 2: 2015-07-09 12:26



Photo 2: 2015-09-17 13:54



Photo 2: 2015-12-01 11:08



Photo 3: 2013-11-12 15:28



Photo 3: 2014-09-22 13:56



Photo 3: 2014-06-03 17:05



Photo 3: 2014-11-12 10:06



Photo 3: 2015-05-19 11:23



Photo 3: 2015-09-17 13:54



Photo 3: 2015-07-09 12:29



Photo 3: 2015-12-01 11:08



Photo 4: 2013-11-12 15:40



Photo 4: 2014-06-03 17:02



Photo 4: 2014-07-15 15:38



Photo 4: 2014-11-12 10:38

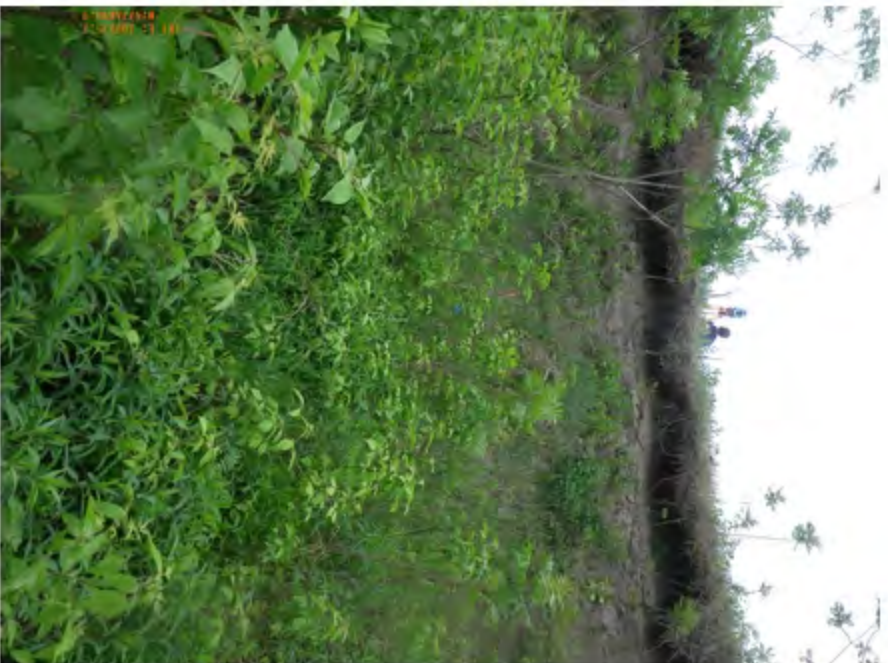


Photo 4: 2015-05-19 11:26



Photo 4: 2015-07-09 12:32



Photo 4: 2015-09-17 13:49



Photo 4: 2015-12-01 11:13



Photo 5: 2013-11-12 15:40



Photo 5: 2014-06-03 17:03



Photo 5: 2014-11-12 10:37



Photo 5: 2015-07-09 12:33



Photo 5: 2015-12-01 11:11



Photo 6: 2013-11-12 16:11



Photo 6: 2014-06-03 17:08



Photo 6: 2015-05-19 11:30



Photo 6: 2015-07-09 12:16



Photo 6: 2015-09-17 13:45



Photo 7: 2013-11-12 16:13



Photo 7: 2014-06-03 17:09



Photo 7: 2014-07-15 16:07



Photo 7: 2014-11-12 09:40



Photo 7: 2015-05-19 11:32



Photo 7: 2015-09-17 14:00



Photo 7: 2015-07-09 12:20



Photo 7: 2015-12-01 11:16



Photo 8: 2013-11-12 16:14



Photo 8: 2014-07-15 16:05



Photo 8: 2014-06-03 17:09



Photo 8: 2014-09-22 13:45



Photo 8: 2015-05-19 11:31



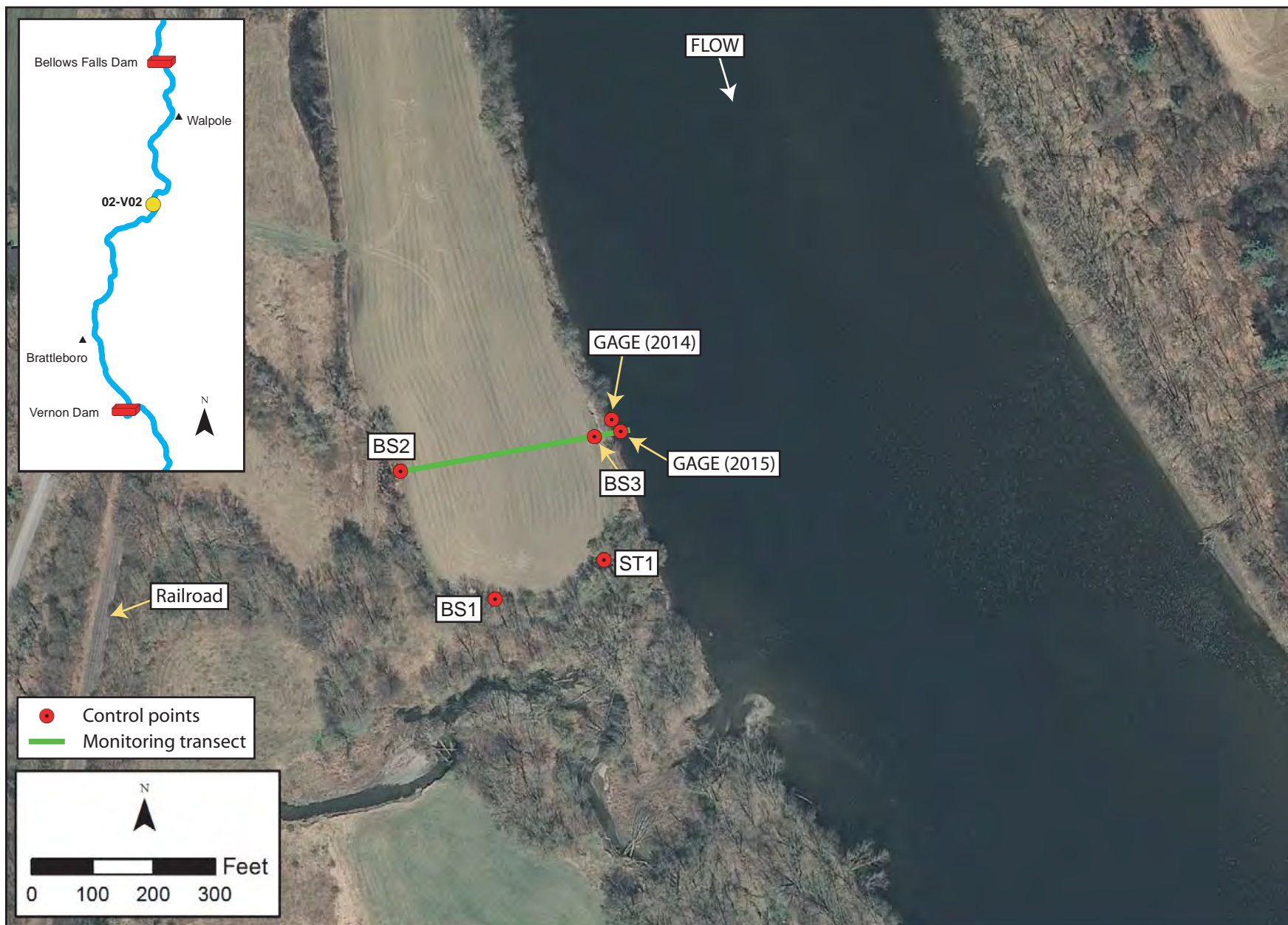
Photo 8: 2015-07-09 12:17

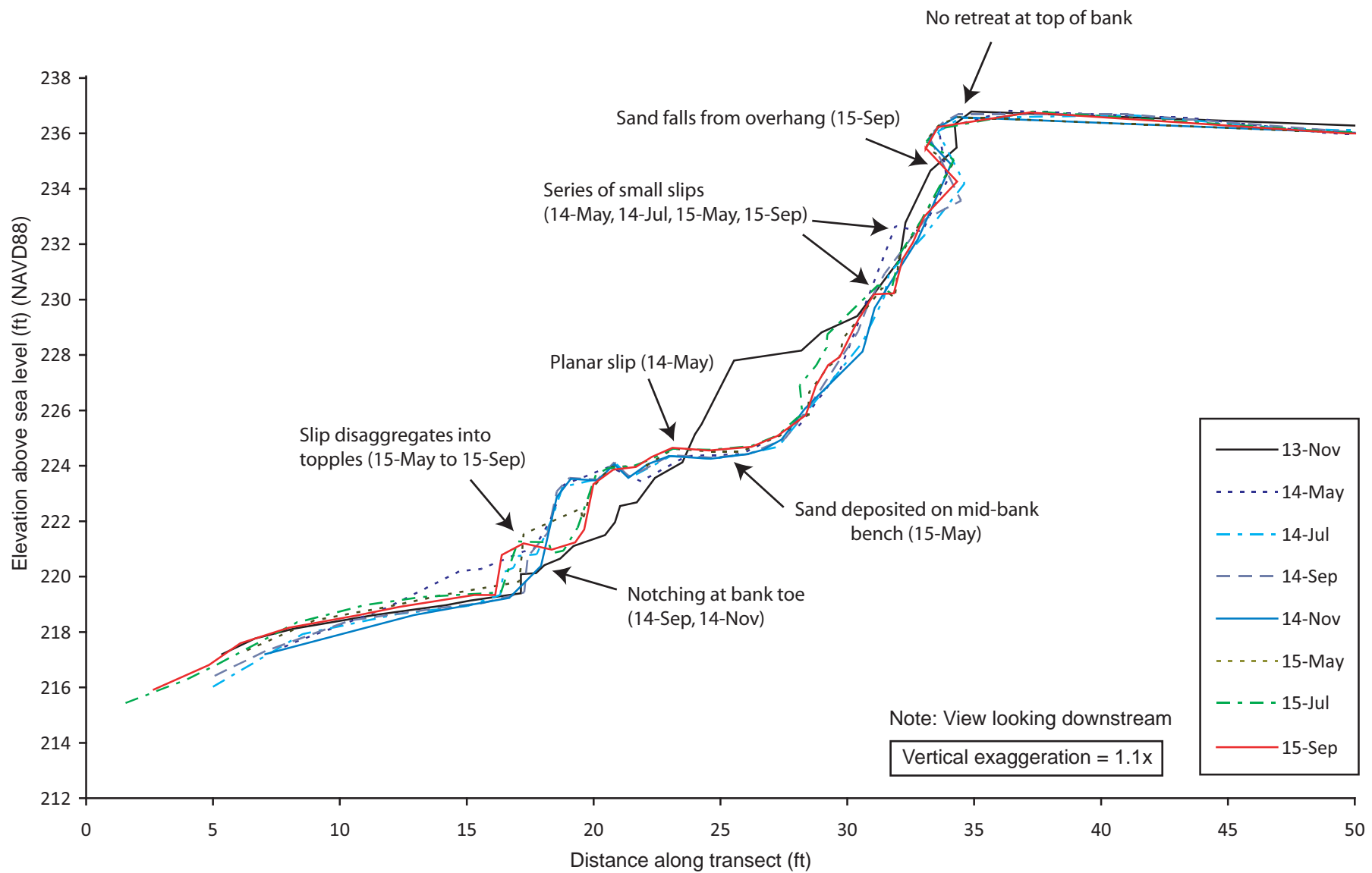


Photo 8: 2015-09-17 14:00



Photo 8: 2015-12-01 11:15

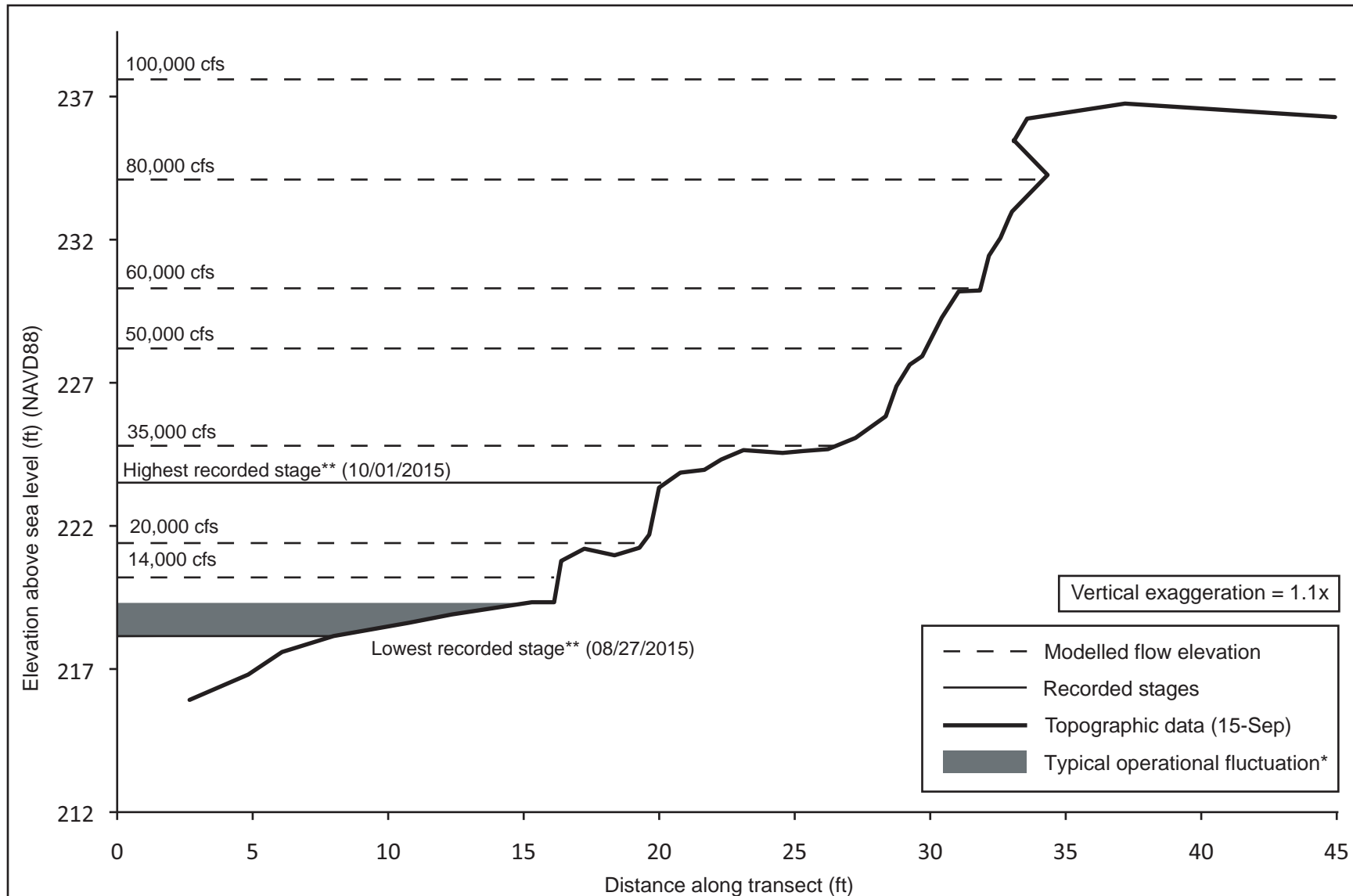




Erosion monitoring transect for 02-V02 (River View Farm US Site).

Time period	Observed changes
Summary	Large planar slip detached from mid-bank between Nov-13 to May-14. Notching into front of this slip block removes colluvial material, while multiple smaller slips are observed in upper bank scarp. Sand is deposited on mid-bank bench between Nov-14 and May-15.
Initial survey (Nov-13)	Noted presence of large slip block in mid-bank and steep scarp along upper terrace riser. Site vegetated by sumac and herbaceous plants.
November 2013 to May 2014	Large planar slip detaches from mid-bank and has been deposited at the base of bank, extending the bank toe out 1.5 feet. Smaller slip block detaches in upper bank.
May to July 2014	Notching at bank toe. Small slip block in upper bank has moved downslope.
July to September 2014	Notching into slip block at base of bank.
September to November 2014	Notching into slip block at base of bank.
November 2014 to May 2015	Small slip block detaches at upper bank and slip in lower bank colluvium. Sand deposition on mid-bank bench surface.
May to July 2015	Slip block in lower bank further disaggregates into topples which accumulate along the back of the beach at bank toe.
July to September 2015	Further disaggregation of lower bank colluvium into topples. Downslope movement of small slips in upper bank. Fine sediment falls from upper bank overhang.

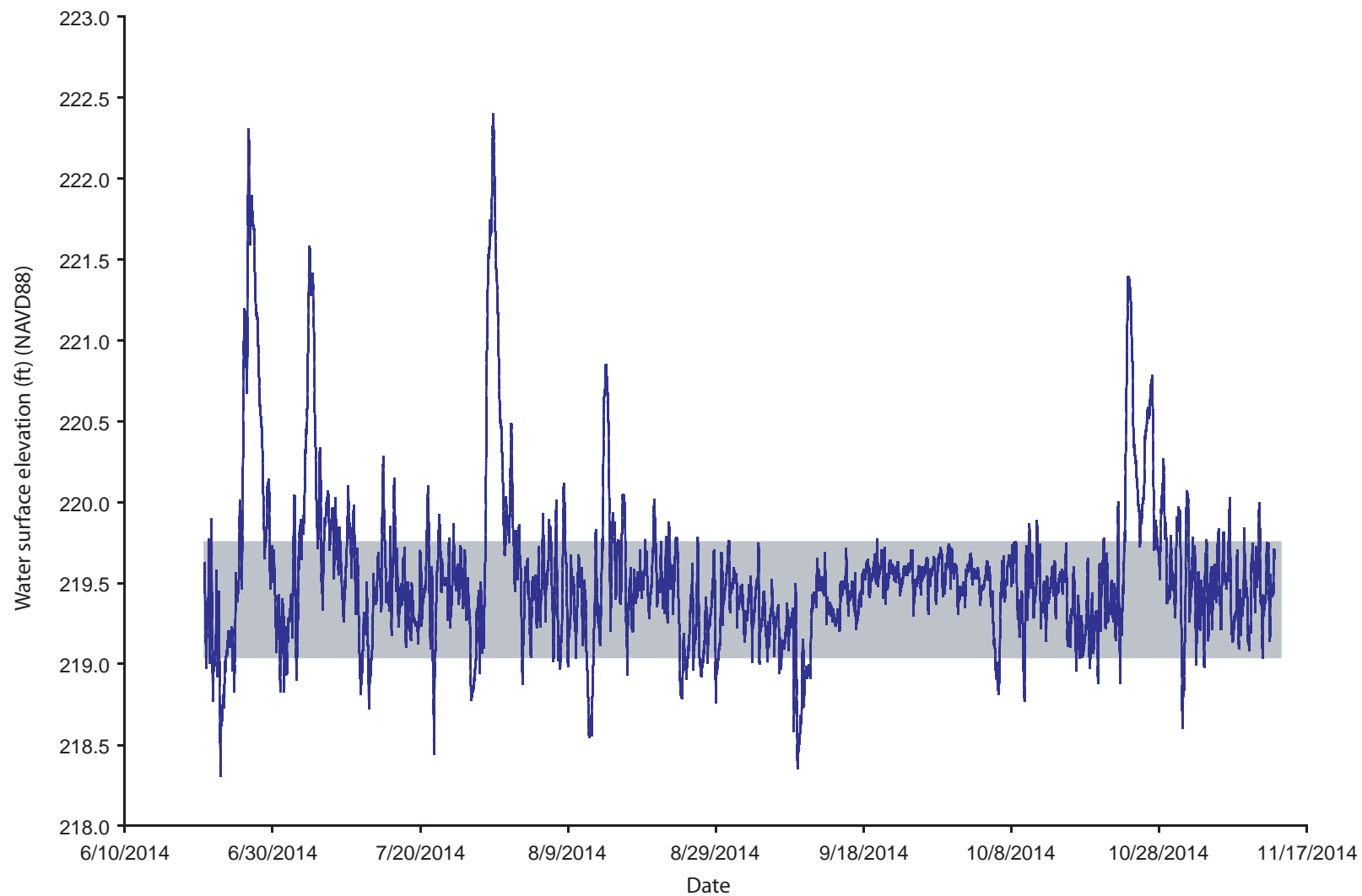
Narrative of observed changes at 02-V02 (River View Farm US Site).



*Note: Typical operational fluctuation at site equals 0.7F feet

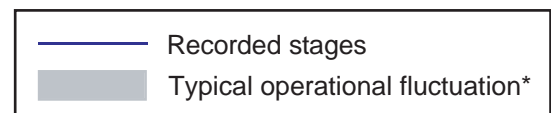
**Note: Flow stage recorded at site from 06/2014 - 11/2014 and 07/2015 - 11/2015

Selected river stages at 02-V02 (River View Farm US Site).

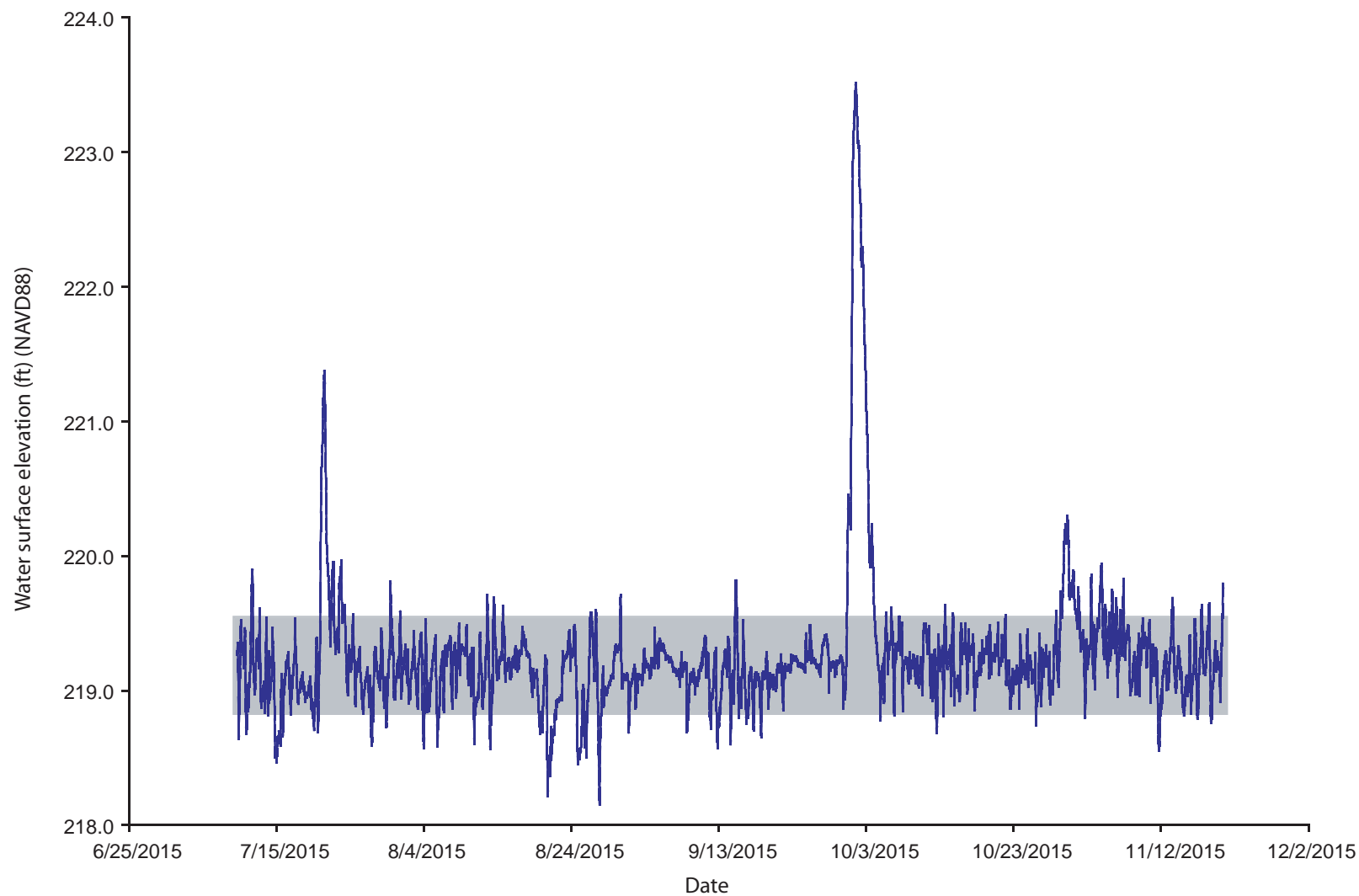


Note: Stage data in 15-minute intervals. No drawdowns below the normal minimum operating WSE at Vernon dam occurred due to high inflows during the water level logger period of record in 2014.

*Note: Typical operational fluctuation at site equals 0.71 feet



Water surface elevation data (2014) for 02-V02 (River View Farm US Site).

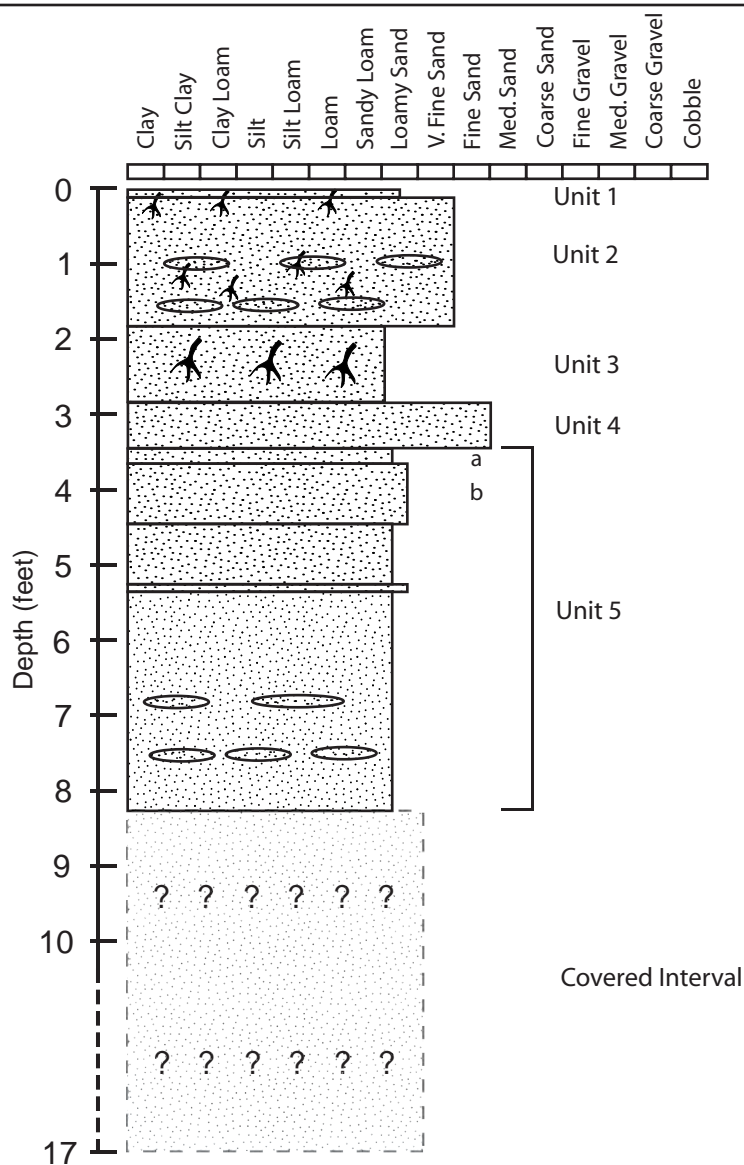


Note: Stage data in 15-minute intervals. No drawdowns below the normal minimum operating WSE at Vernon dam occurred due to high inflows during the water level logger period of record in 2015.

*Note: Typical operational fluctuation at site equals 0.71 feet

— Recorded stages
— Typical operational fluctuation*

Water surface elevation data (2015) for 02-V02 (River View Farm US Site).



Top elevation = 236.5 feet above sea level (NAVD88)

Unit 1: [0.1 ft thick] (10YR 4/3 dry, 10YR 3/2 wet), A Horizon, weak small granular, loamy sand with abundant small roots; gradational contact with Unit 2.

Unit 2: [1.7 ft thick] (7.5YR 3/4 dry, 7.5YR 3/1 wet), medium weak blocky granular, fine sand with minor silt, common roots, sandy lenses at 1 and 1.6 ft; gradational contact with Unit 3.

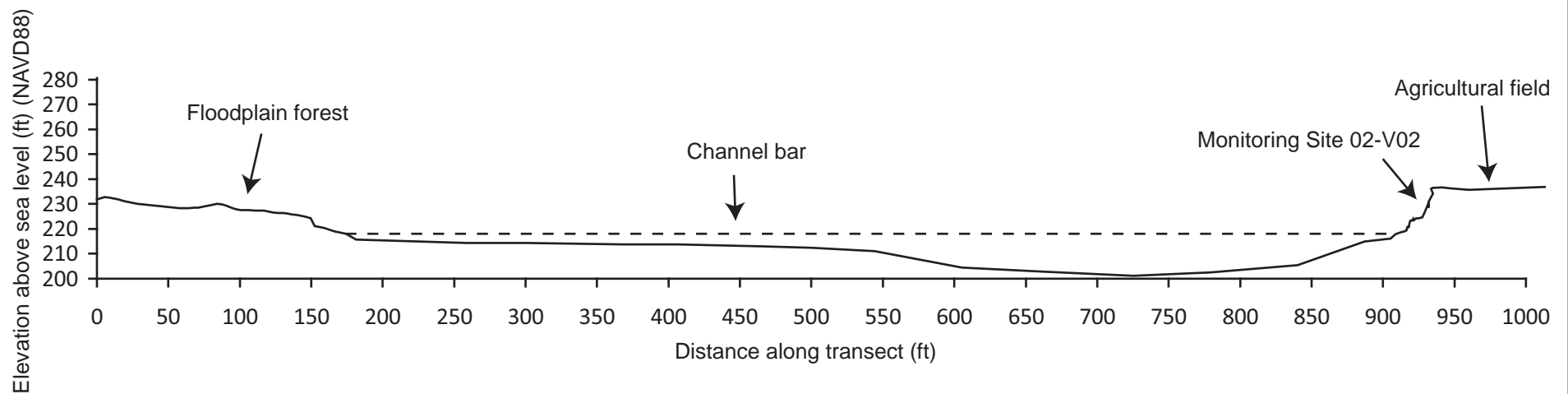
Unit 3: [1.0 ft thick] (10YR 4/4 dry, 10YR 3/2 wet), weak platy, silty fine sand, woody roots; sharp contact with Unit 4.

Unit 4: [0.6 ft thick] (2.5 Y 5/3 dry, 2.5Y 3/2 wet), weak platy granular, medium to fine sand; sharp contact with Unit 5.

Unit 5: [4.8 ft thick] Interbedded unit consisting of: a) [0.2-3.7 ft thick] (2.5Y 4/3 dry, 2.5Y 3/3 wet), weak platy tan sand with silt, two sand lenses at 6.8 and 7.5 ft; diffuse contacts with b) [0.1-.8 ft thick] (5Y 4/4 dry, 5Y 3/2 wet), medium very weak platy, sand with minor silt.

Covered interval: [8.8 ft thick] alluvial bench composed of slipped material.

Stratigraphic column of 02-V02 (River View Farm US Site).



Note: View looking downstream

Vertical exaggeration = 1.7x

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

Full river transect for 02-V02 (River View Farm US Site).

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-V02	1	42.9873567	-72.4648267	242	Portrait straight on view of bank from end of transect
02-V02	2	42.9873250	-72.4648417	307	US view from end of transect
02-V02	3	42.9873167	-72.4648350	220	DS view from end of transect, rotated further down to track tree throw
02-V02	4	42.9873433	-72.4648233	270	Straight on closeup of transect
02-V02	5	42.9873167	-72.4648517	190	Close up of bank toe from end of transect
02-V02	6	42.9873267	-72.4648283	315	US view of bank from transect
02-V02	7	42.9873556	-72.4648278	220	Slight DS oblique view of transect

Ground photograph locations at 02-V02 (River View Farm US Site).



Photo 1: 2013-11-20 11:19



Photo 1: 2014-05-28 12:50



Photo 1: 2014-09-25 11:08



Photo 1: 2014-11-12 15:13



Photo 1: 2015-05-14 13:07



Photo 1: 2015-07-09 15:01



Photo 1: 2015-09-16 13:12



Photo 1: 2015-11-20 10:29



Photo 2: 2013-11-20 11:19



Photo 2: 2014-07-25 11:32



Photo 2: 2014-05-28 12:52



Photo 2: 2014-11-12 15:13



Photo 2: 2015-05-14 13:07



Photo 2: 2015-09-16 13:12



Photo 2: 2015-07-09 15:02



Photo 2: 2015-11-20 10:31



Photo 3: 2014-05-28 12:51



Photo 3: 2014-09-25 11:08



Photo 3: 2015-05-14 13:08



Photo 3: 2015-07-09 15:02



Photo 3: 2015-09-16 13:13



Photo 3: 2015-11-20 10:27



Photo 4: 2014-05-28 12:49



Photo 4: 2014-07-25 11:33



Photo 4: 2014-11-12 15:15



Photo 4: 2015-05-14 13:13



Photo 4: 2015-07-09 15:04



Photo 4: 2015-09-16 13:14



Photo 4: 2015-11-20 10:28



Photo 5: 2014-05-28 12:53



Photo 5: 2014-07-25 11:32



Photo 5: 2014-09-25 11:08



Photo 5: 2014-11-12 15:13



Photo 5: 2015-05-14 13:09



Photo 5: 2015-07-09 15:03



Photo 5: 2015-11-20 10:28



Photo 6: 2014-05-28 12:50



Photo 6: 2014-09-25 11:08



Photo 6: 2014-11-12 15:13



Photo 6: 2015-05-14 13:10



Photo 6: 2015-09-16 13:15



Photo 6: 2015-07-09 15:04



Photo 6: 2015-11-20 10:32



Photo 7: 2013-11-20 11:19



Photo 7: 2014-07-25 11:32



Photo 7: 2014-11-12 15:14



Photo 7: 2015-07-09 15:05



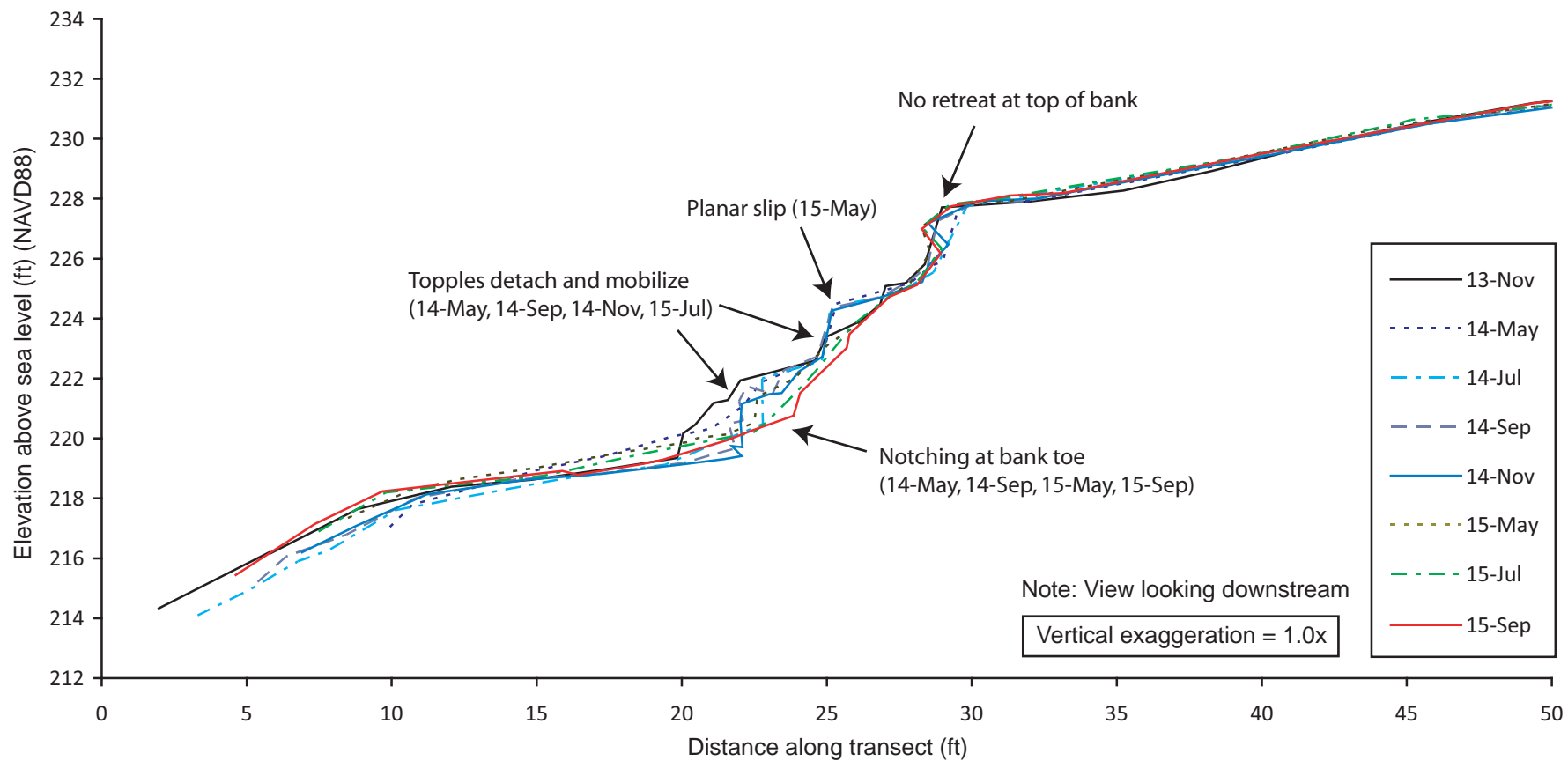
Photo 7: 2015-09-16 13:16



Photo 7: 2015-11-20 10:33



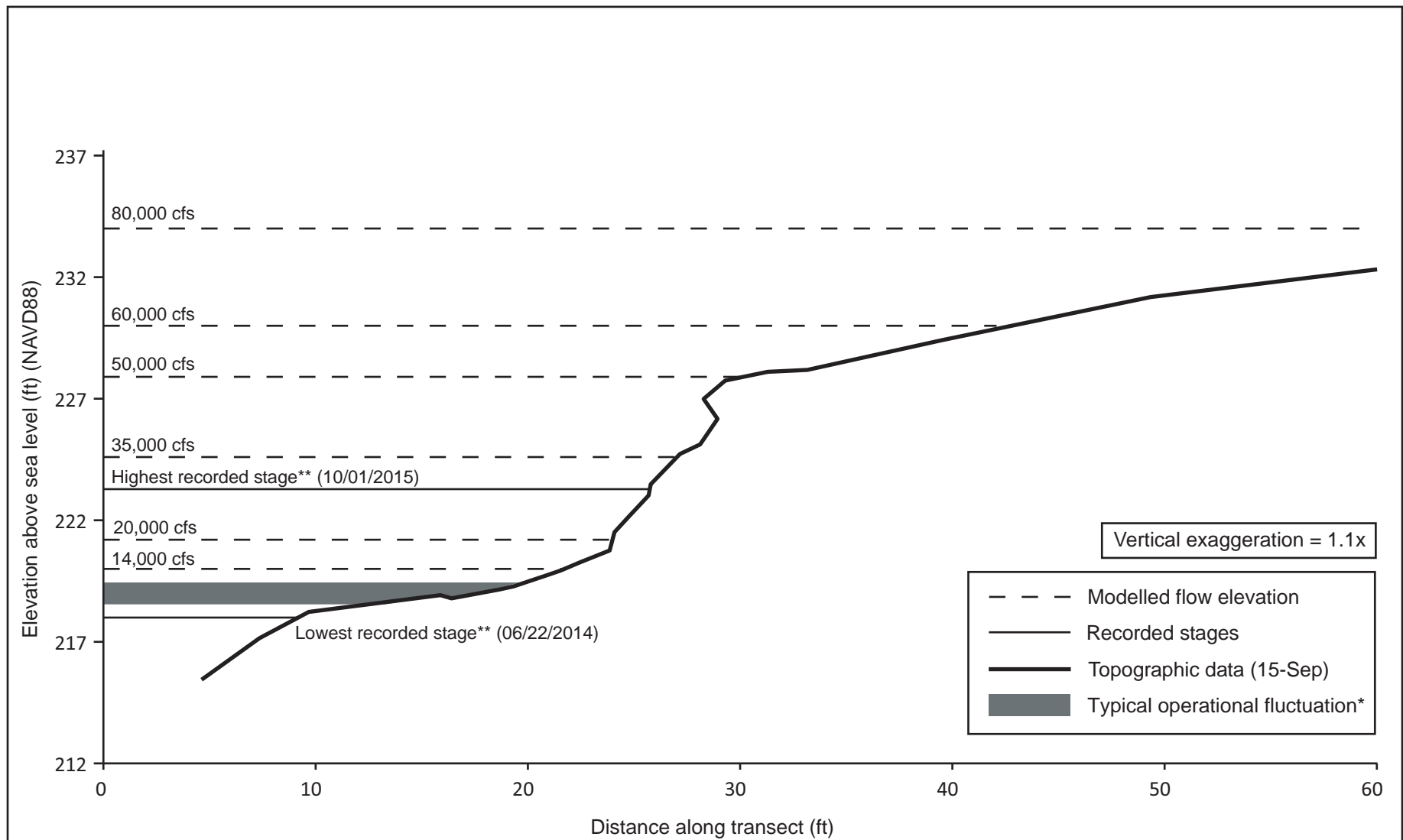
Site map for 02-V03 (River View Farm DS Site).



Erosion monitoring transect for 02-V03 (River View Farm DS Site).

Time period	Observed changes
Summary	No retreat at top of bank, although notching at bank toe has increased bank angle over study period. The detachment and downslope movement of topple blocks was observed throughout the study period.
Initial survey (Nov-13)	Low alluvial bank along unmowed herbaceous riparian buffer. Bank shows evidence of recent planar slip / topples and notching along beach face.
November 2013 to May 2014	Notching and removal of topple blocks at base of bank. Tension cracks develop in mid-bank.
May to July 2014	No observed changes.
July to September 2014	Topple blocks detached from lower bank as notching continues into colluvium at bank toe.
September to November 2014	Topple blocks in lower bank have rotated and collapsed.
November 2014 to May 2015	Large topple block detached from mid-bank and has been mobilized out of transect. Notching into colluvium at base of bank has caused bank toe to retreat 0.8 feet.
May to July 2015	Detachment of topple blocks from mid-bank.
July to September 2015	Notching into lower bank, as toe retreats, further steepening bank slope.

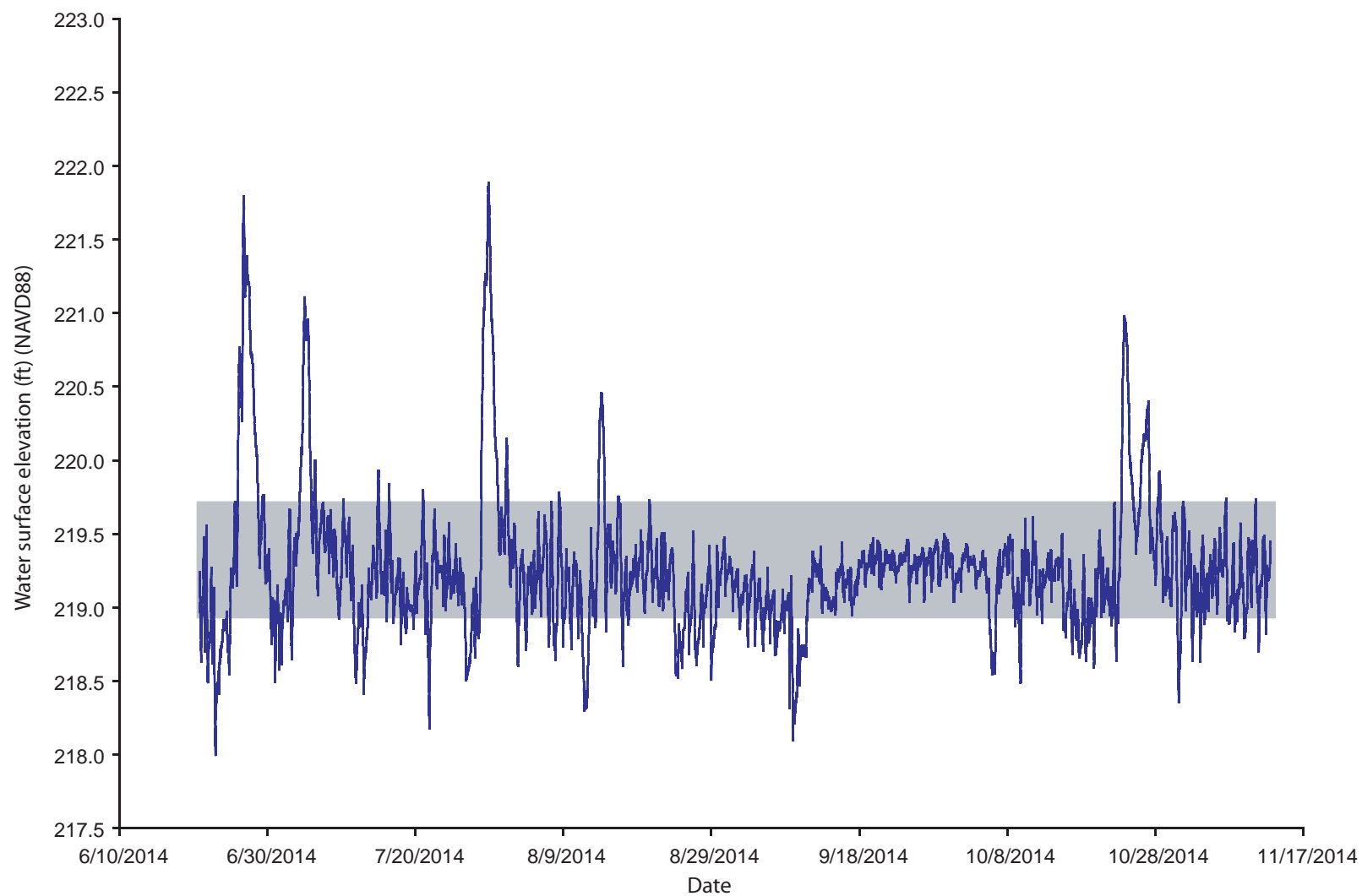
Narrative of observed changes at 02-V03 (River View Farm DS Site).



*Note: Typical operational fluctuation at site equals 0.7F feet

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

Selected river stages at 02-V03 (River View Farm DS Site).

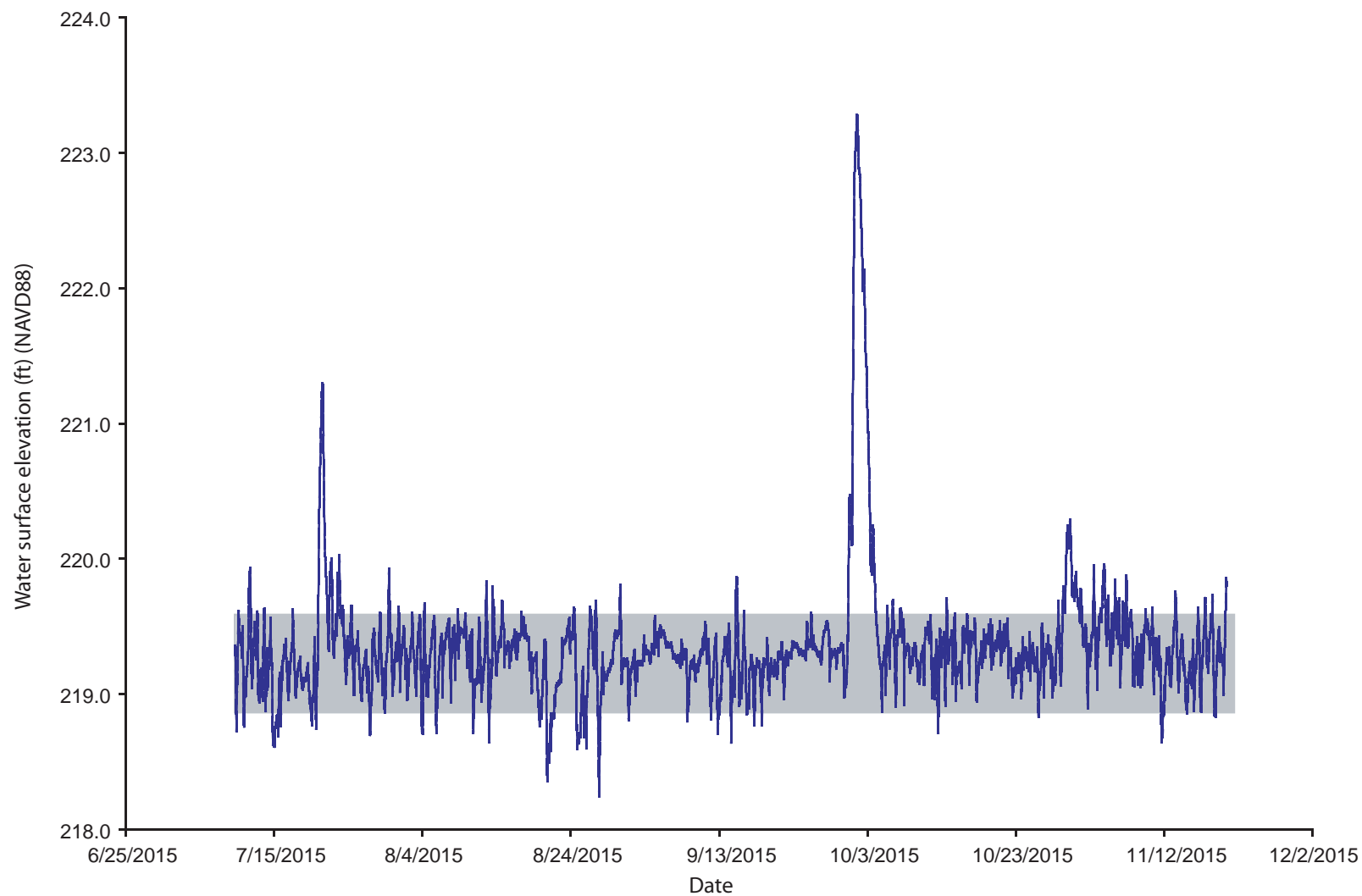


Note: Stage data in 15-minute intervals. No drawdowns below the normal minimum operating WSE at Vernon dam occurred due to high inflows during the water level logger period of record in 2014.

*Note: Typical operational fluctuation at site equals 0.71 feet

— Recorded stages
— Typical operational fluctuation*

Water surface elevation data (2014) for 02-V03 (River View Farm DS Site).

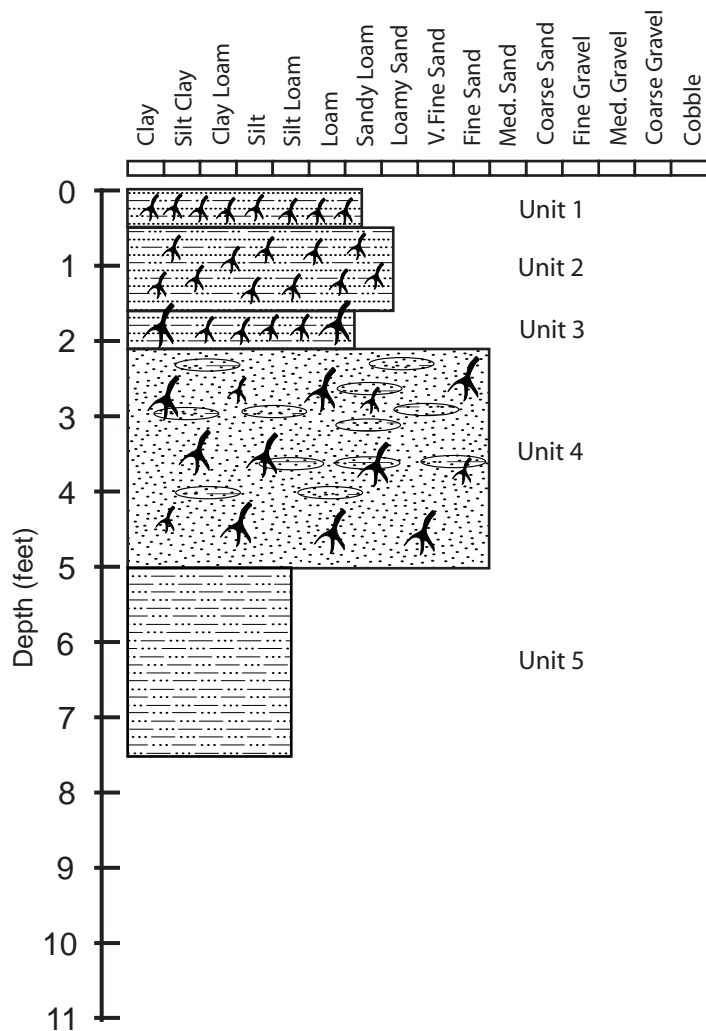


Note: Stage data in 15-minute intervals. No drawdowns below the normal minimum operating WSE at Vernon dam occurred due to high inflows during the water level logger period of record in 2015.

*Note: Typical operational fluctuation at site equals 0.71 feet

— Recorded stages
— Typical operational fluctuation*

Water surface elevation data (2015) for 02-V03 (River View Farm DS Site).



Top elevation = 227.7 feet above sea level (NAVD88)

Unit 1: [0.5 ft thick] (5Y 4/2 dry, 5Y 2.5/2 wet), medium fine granular, very fine sandy loam, organic rich with small abundant roots; gradational contact with Unit 2.

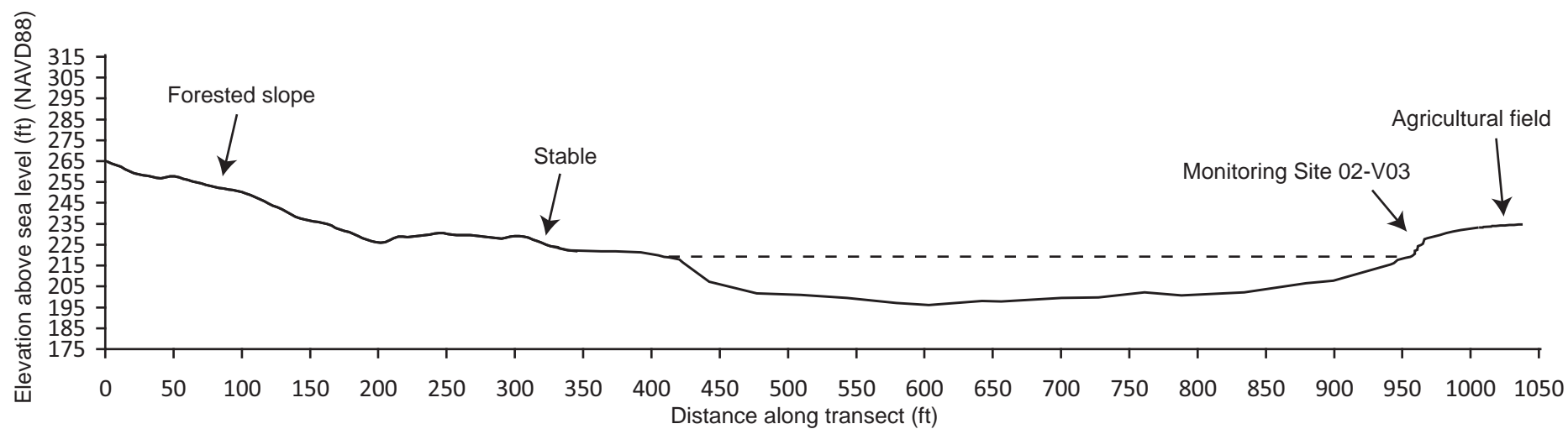
Unit 2: [1.1 ft thick] (2.5Y 3/3 dry, 2.5Y 3/2 wet), moderate strength, fine granular loamy sand, more sand, abundant small roots; sharp contact with Unit 3.

Unit 3: [0.5 ft thick] (5Y 3/2 dry, 5Y 2.5/2 wet), coarse blocky with moderate strength texture, silty fine sandy loam with abundant roots; sharp contact with Unit 4.

Unit 4: [2.9 ft thick] (5Y 4/3 dry, 2.5Y 3/2 wet), weak medium blocky, silty medium sand with buried organic matter and fewer fine roots, more coarse roots, contains darker silt lenses; gradational contact with Unit 5.

Unit 5: [2.5 ft thick] (2.5Y 3/2 wet), medium blocky medium strength silt loam with blue/grey weathered nodules.

Stratigraphic column of 02-V03 (River View Farm DS Site).



Note: View looking downstream

Vertical exaggeration = 1.5x

- - - Water surface at time of survey

— Topographic data (14-Jul)

Full river transect for 02-V03 (River View Farm DS Site).

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-V03	1	42.9832433	-72.4618650	280	Straight on view of bank from end of transect
02-V03	2	42.9832267	-72.4618617	330	US view from end of transect
02-V03	3	42.9832483	-72.4618633	190	DS view from end of transect
02-V03	4	42.9832400	-72.4618200	80	View of transect from top of bank
02-V03	5	42.9832483	-72.4619567	280	Looking at end of transect on flood plain

Ground photograph locations at 02-V03 (River View Farm DS Site).



Photo 1: 2013-11-15 17:53



Photo 1: 2014-05-28 16:31



Photo 1: 2014-09-10 19:14



Photo 1: 2014-11-12 12:23



Photo 1: 2015-05-14 14:19

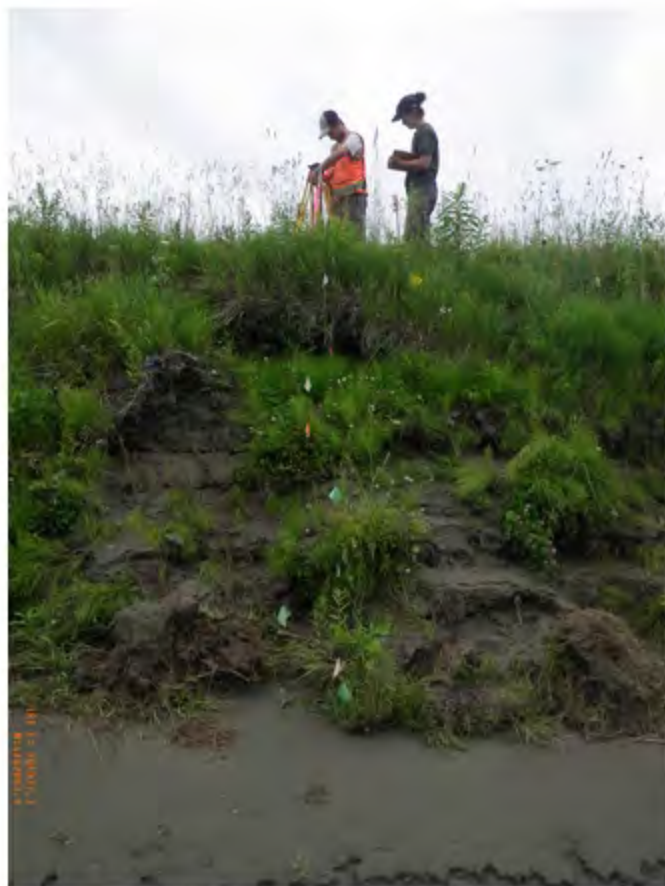


Photo 1: 2015-07-09 15:55



Photo 1: 2015-09-16 14:20



Photo 1: 2015-11-20 11:07



Photo 2: 2013-11-15 17:53



Photo 2: 2014-09-10 19:15



Photo 2: 2014-07-25 14:28



Photo 2: 2014-11-12 12:23



Photo 2: 2015-05-14 14:19



Photo 2: 2015-09-16 14:20



Photo 2: 2015-07-09 15:56



Photo 2: 2015-11-20 11:09



Photo 3: 2013-11-15 17:53



Photo 3: 2014-05-28 16:31



Photo 3: 2014-07-25 14:28



Photo 3: 2014-11-12 12:24



Photo 3: 2015-05-14 14:20



Photo 3: 2015-07-09 15:56



Photo 3: 2015-09-16 14:21



Photo 3: 2015-11-20 11:08



Photo 4: 2013-11-15 18:07



Photo 4: 2014-05-28 16:53



Photo 4: 2014-09-10 19:13



Photo 4: 2014-11-12 12:21



Photo 4: 2015-05-14 14:25



Photo 4: 2015-07-09 15:59



Photo 4: 2015-09-16 14:18



Photo 4: 2015-11-20 11:05



Photo 5: 2014-05-28 16:53



Photo 5: 2014-07-25 14:31



Photo 5: 2015-05-14 14:24



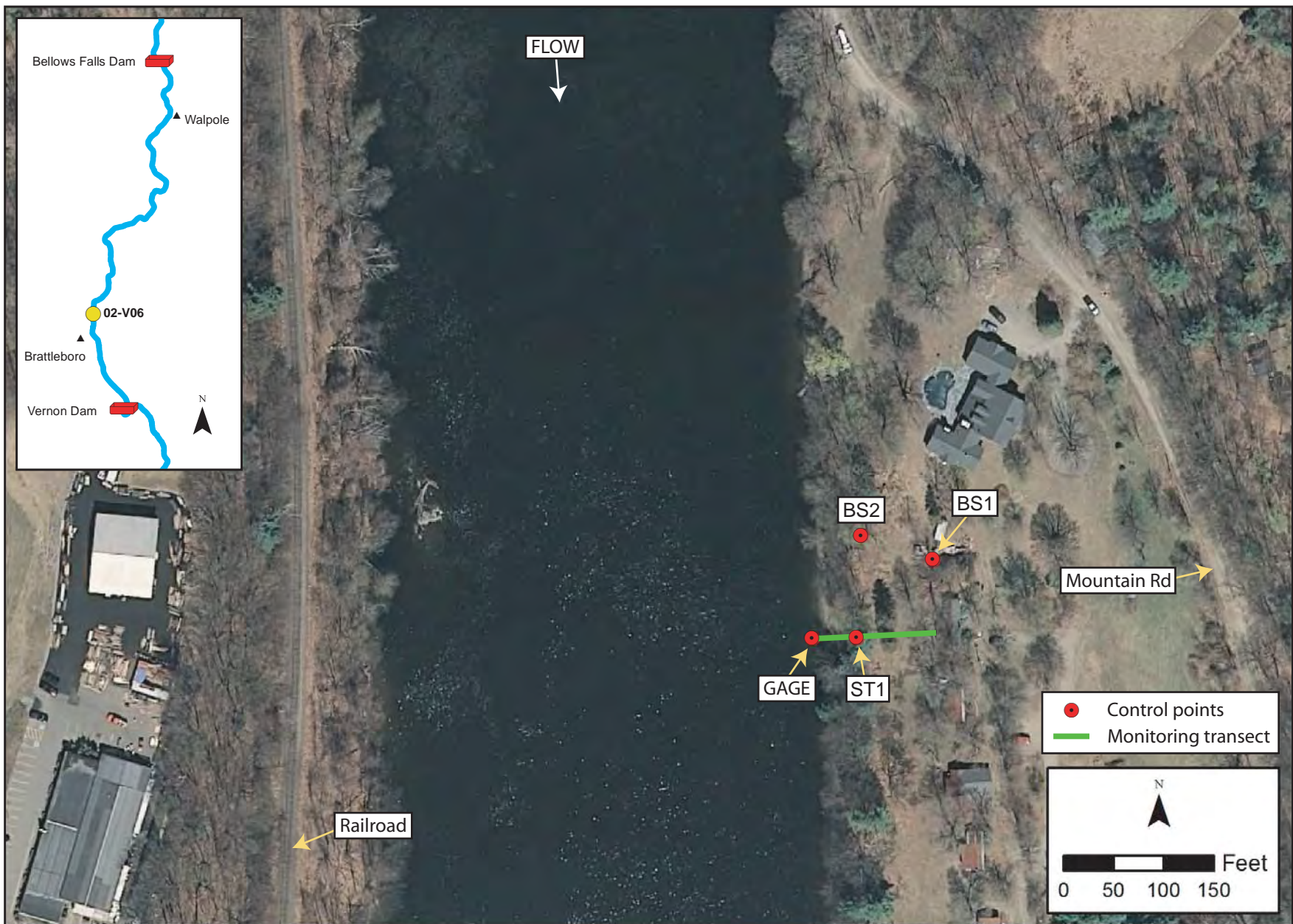
Photo 5: 2015-07-09 16:00



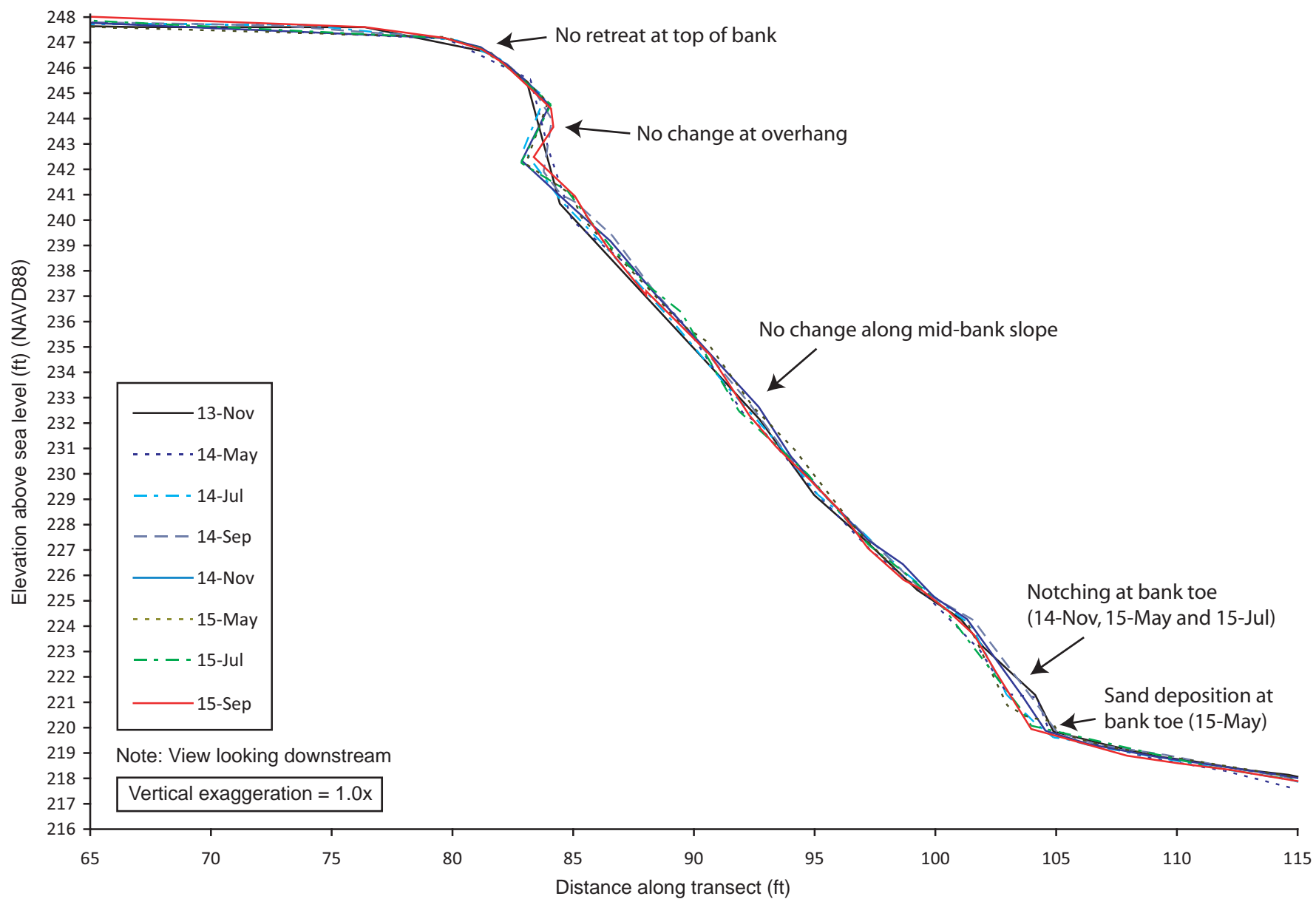
Photo 5: 2015-09-16 14:19



Photo 5: 2015-11-20 11:05



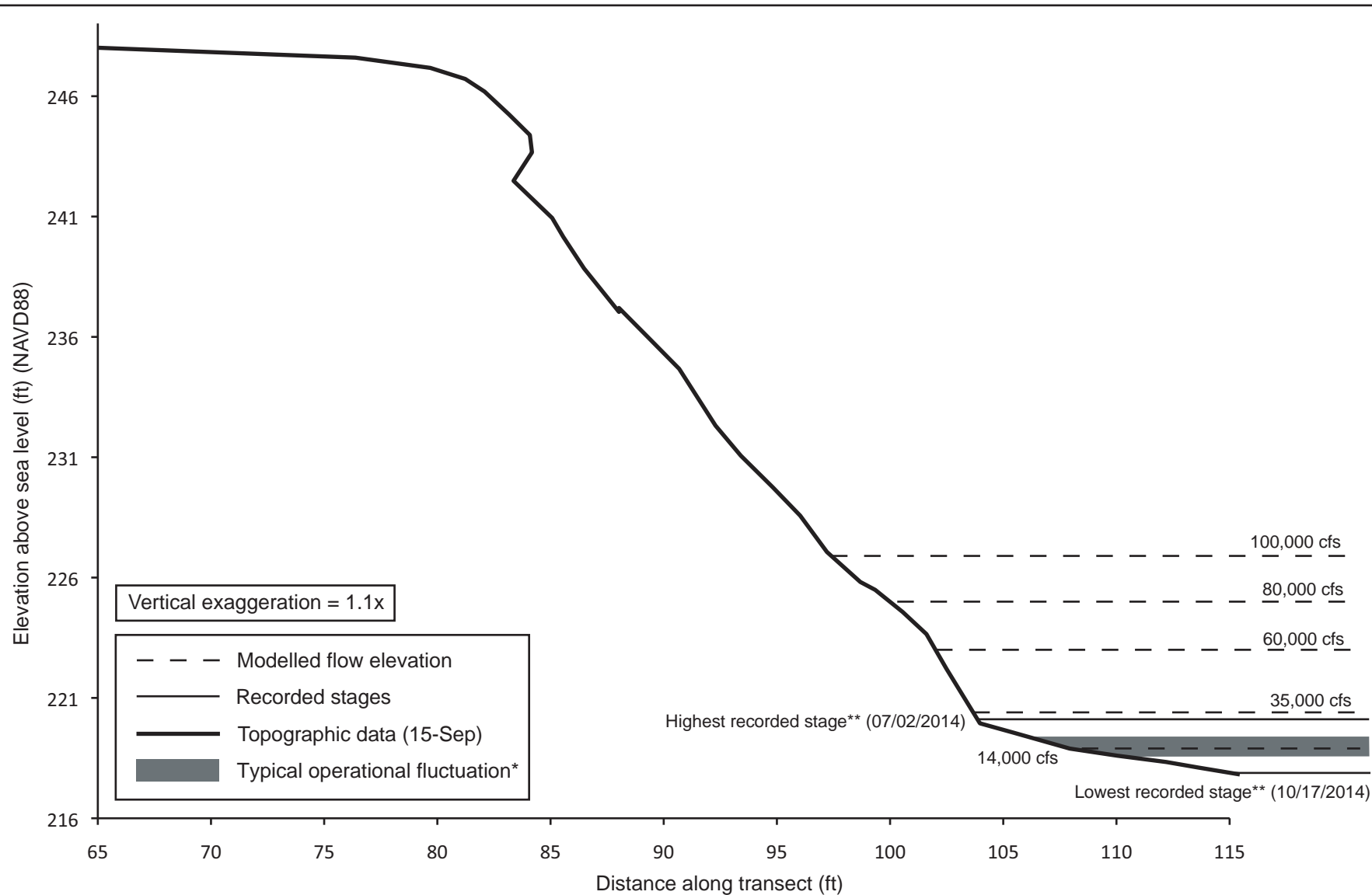
Site map for 02-V06 (LaCroix Site).



Erosion monitoring transect for 02-V06 (LaCroix Site).

Time period	Observed changes
Summary	No retreat at top of bank. Change limited to lower bank, where notching has removed 1.0 foot of material over the study period.
Initial survey (Nov-13)	Site characterized as steep forested bank covered by leaves and detritus. Cobbles exposed at toe of bank.
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	Notching into lower bank scarp, toe of bank retreats 0.3 feet.
November 2014 to May 2015	Further notching into lower bank scarp and deposition of sand bench along bank toe.
May to July 2015	Sandy bench has been removed from bank toe as notching continues into lower bank slope.
July to September 2015	No observed changes.

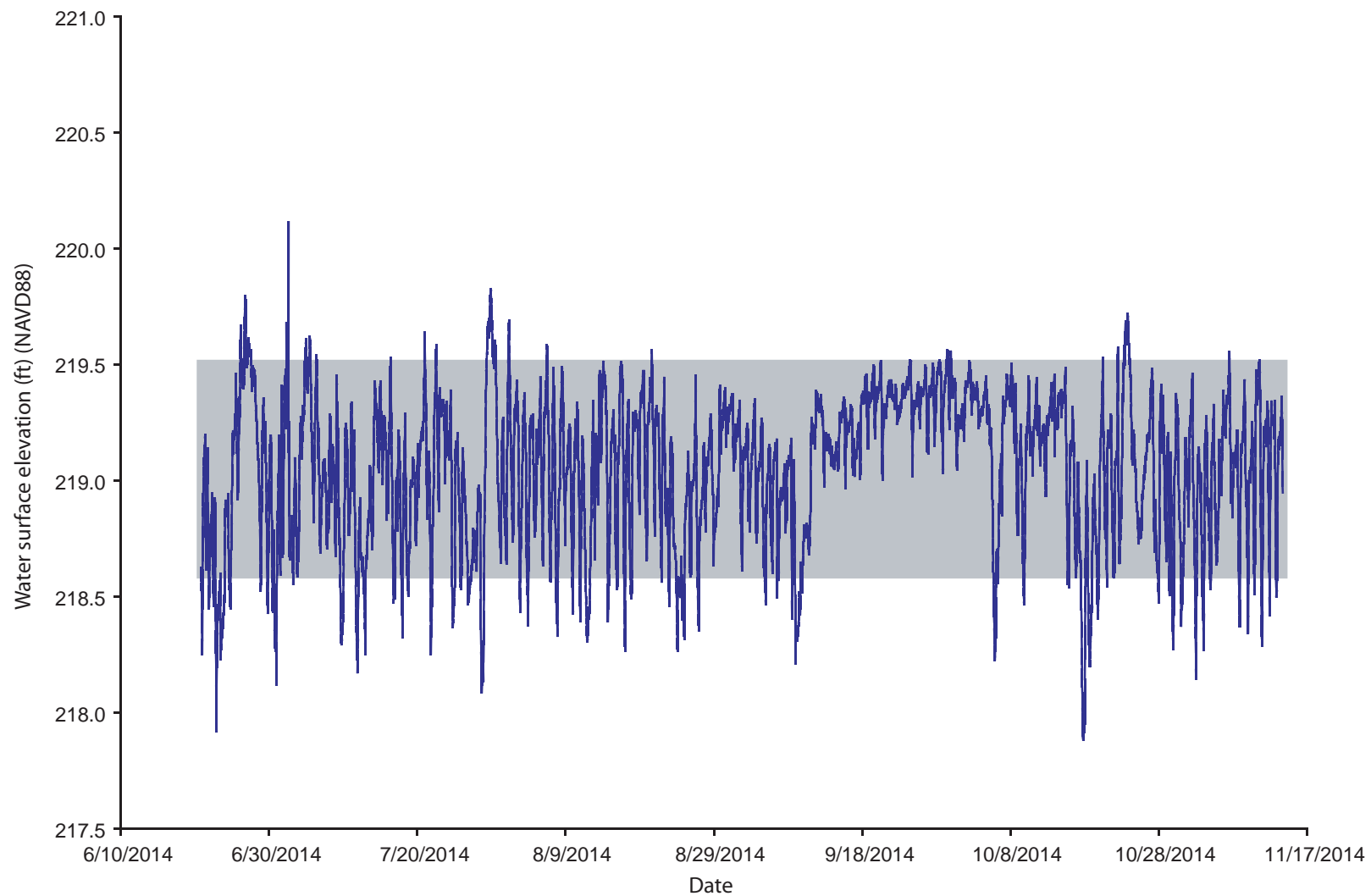
Narrative of observed changes at 02-V06 (LaCroix Site).



*Note: Typical operational fluctuation at site equals 0.9H feet

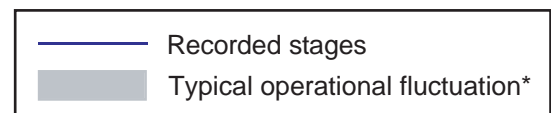
**Note: Flow stage recorded at site from 06/2014 - 11/2014 and 07/2015 - 11/2015

Selected river stages at 02-V06 (LaCroix Site).



Note: Stage data in 15-minute intervals. No drawdowns below the normal minimum operating WSE at Vernon dam occurred due to high inflows during the water level logger period of record in 2014.

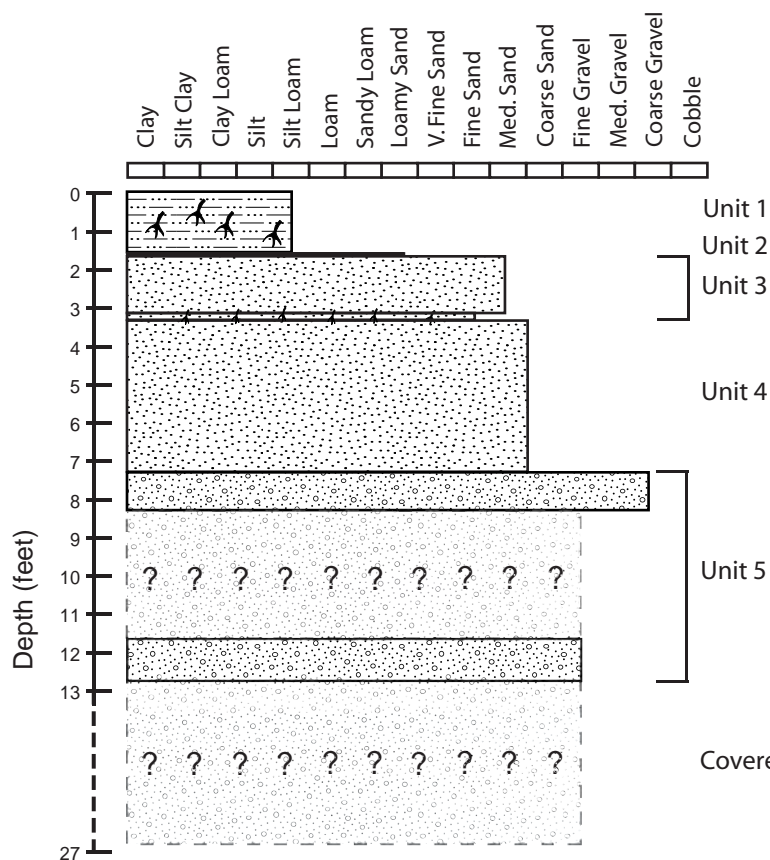
*Note: Typical operational fluctuation at site equals 0.93 feet



Water surface elevation data (2014) for 02-V06 (LaCroix Site).

No valid 2015 water level data to report

Water surface elevation data (2015) for 02-V06 (LaCroix Site).



Top elevation = 246.7 feet above sea level (NAVD88)

Unit 1: [1.6 ft thick] (10YR 2/1 dry, 5YR 2.5/1 wet), strong small granular, organic-rich silt loam.

Unit 2: [0.02 ft thick] (2.5Y 4/3 dry, 2.5Y 3/3 wet), medium blocky, loamy fine sand.

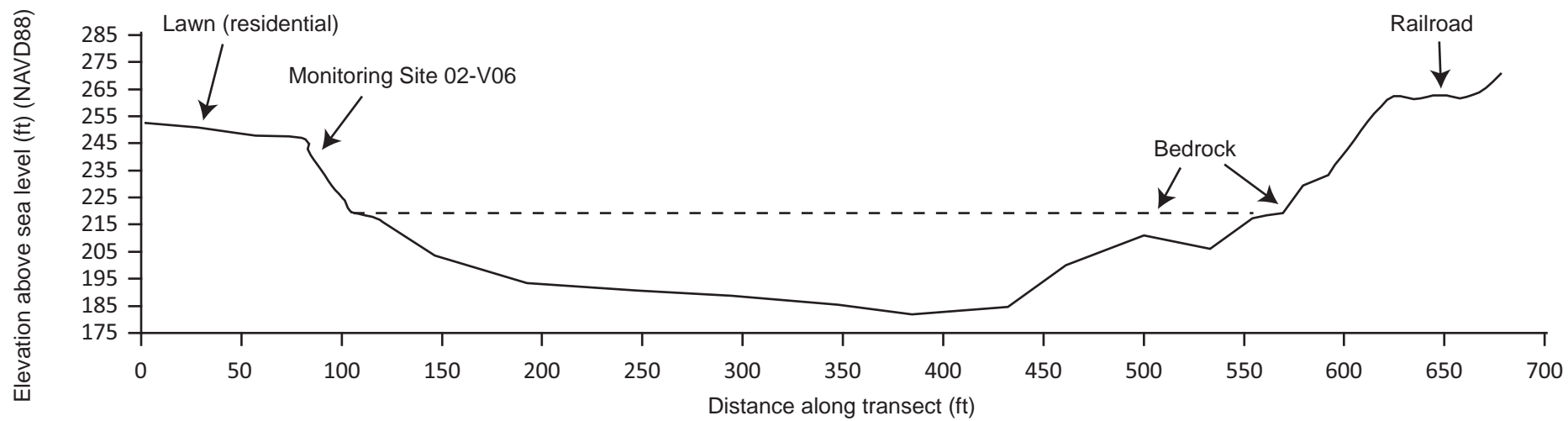
Unit 3: [1.68 ft thick] Interbedded unit consisting of: a) [1.5 ft thick] (10YR 3/3 dry, 10YR 3/2 wet), weak coarse blocky, medium sand with silt, and b) [0.18 ft thick] (10YR 3/4 dry, 10YR 3/2 wet), weak structure, fine sand with fine roots.

Unit 4: [4 ft thick], medium to coarse sand with quartz, and biotite and muscovite mica present, no silt, sharp contact with Unit 5.

Unit 5: [5.5 ft thick], coarse gravelly deposit observed at top, then covered interval, bottom is poorly sorted, sub angular coarse sand to rounded medium gravel matrix.

Covered Interval: [13.6 ft thick] Presumed coarse sand and gravel.

Stratigraphic column of 02-V06 (LaCroix Site).



Note: View looking downstream

Vertical exaggeration = 1.3x

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

Full river transect for 02-V06 (LaCroix Site).

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-V06	1	42.8718350	-72.5534083	94	Portrait straight on from end of transect
02-V06	2	42.8718883	-72.5534500	132	DS view from end of transect
02-V06	3	42.8719083	-72.5534617	32	US view from end of transect
02-V06	4	42.8719117	-72.5533067	309	Looking down on transect from TOB

Ground photograph locations at 02-V06 (LaCroix Site).



Photo 1: 2013-11-20 14:00



Photo 1: 2014-05-30 14:38



Photo 1: 2014-09-10 15:48



Photo 1: 2014-11-13 16:22



Photo 1: 2015-05-14 16:24



Photo 1: 2015-07-15 16:07



Photo 1: 2015-09-17 15:36



Photo 1: 2015-11-20 17:15



Photo 2: 2013-11-20 14:00



Photo 2: 2014-09-10 15:49



Photo 2: 2014-05-30 14:39



Photo 2: 2014-11-13 16:23



Photo 2: 2015-05-14 16:24



Photo 2: 2015-07-15 16:08



Photo 2: 2015-09-17 15:35



Photo 2: 2015-11-20 17:16



Photo 3: 2013-11-20 14:00



Photo 3: 2014-07-25 09:24



Photo 3: 2014-05-30 14:39



Photo 3: 2014-11-13 16:23



Photo 3: 2015-05-14 16:23



Photo 3: 2015-07-15 16:09



Photo 3: 2015-09-17 15:36



Photo 3: 2015-11-20 17:16



Photo 4: 2014-07-25 09:18



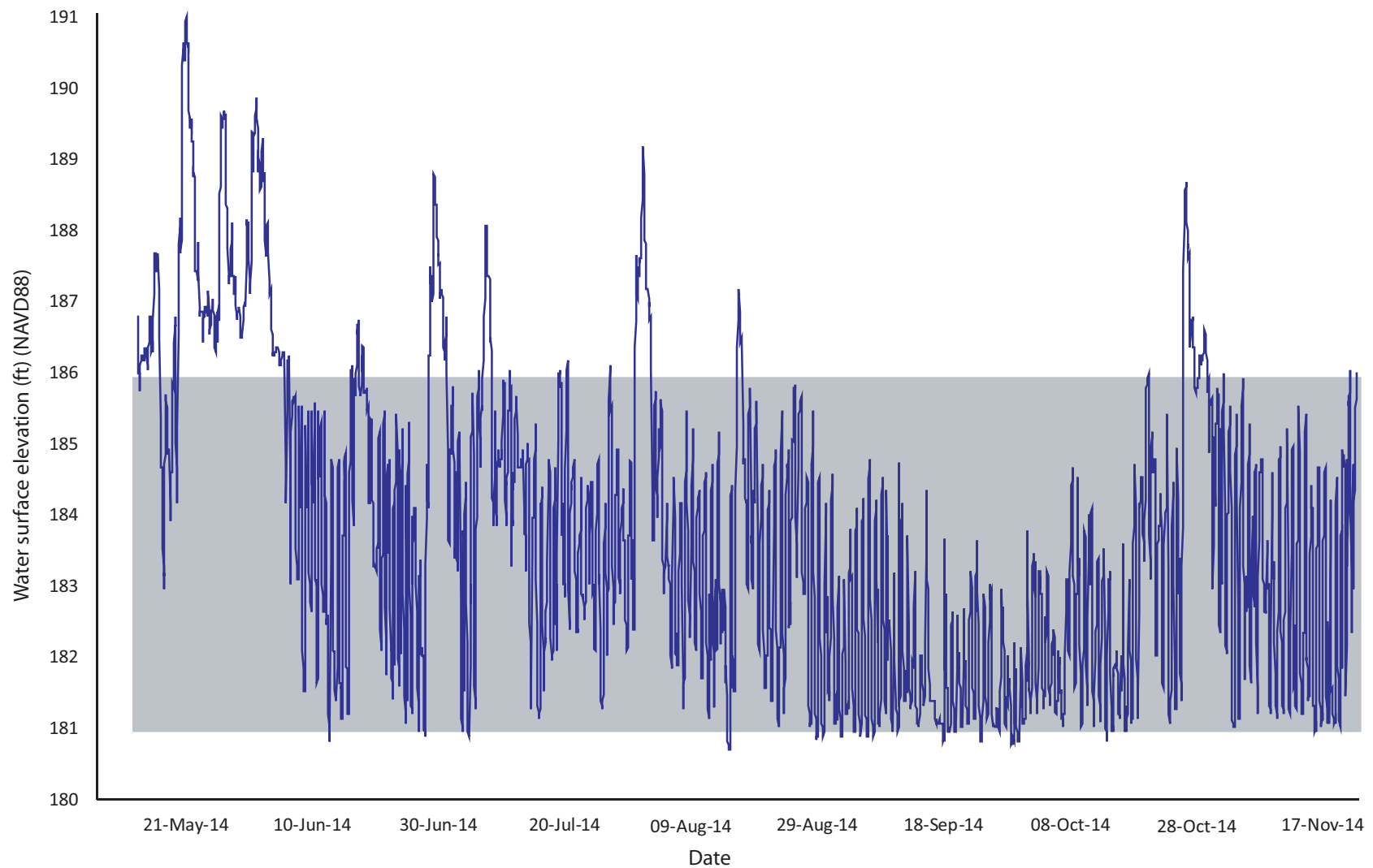
Photo 4: 2014-11-13 16:14



Photo 4: 2015-05-14 16:09

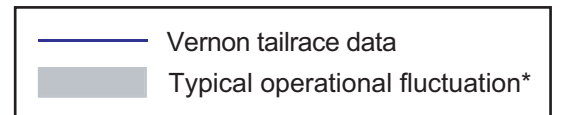


Photo 4: 2015-07-15 17:14

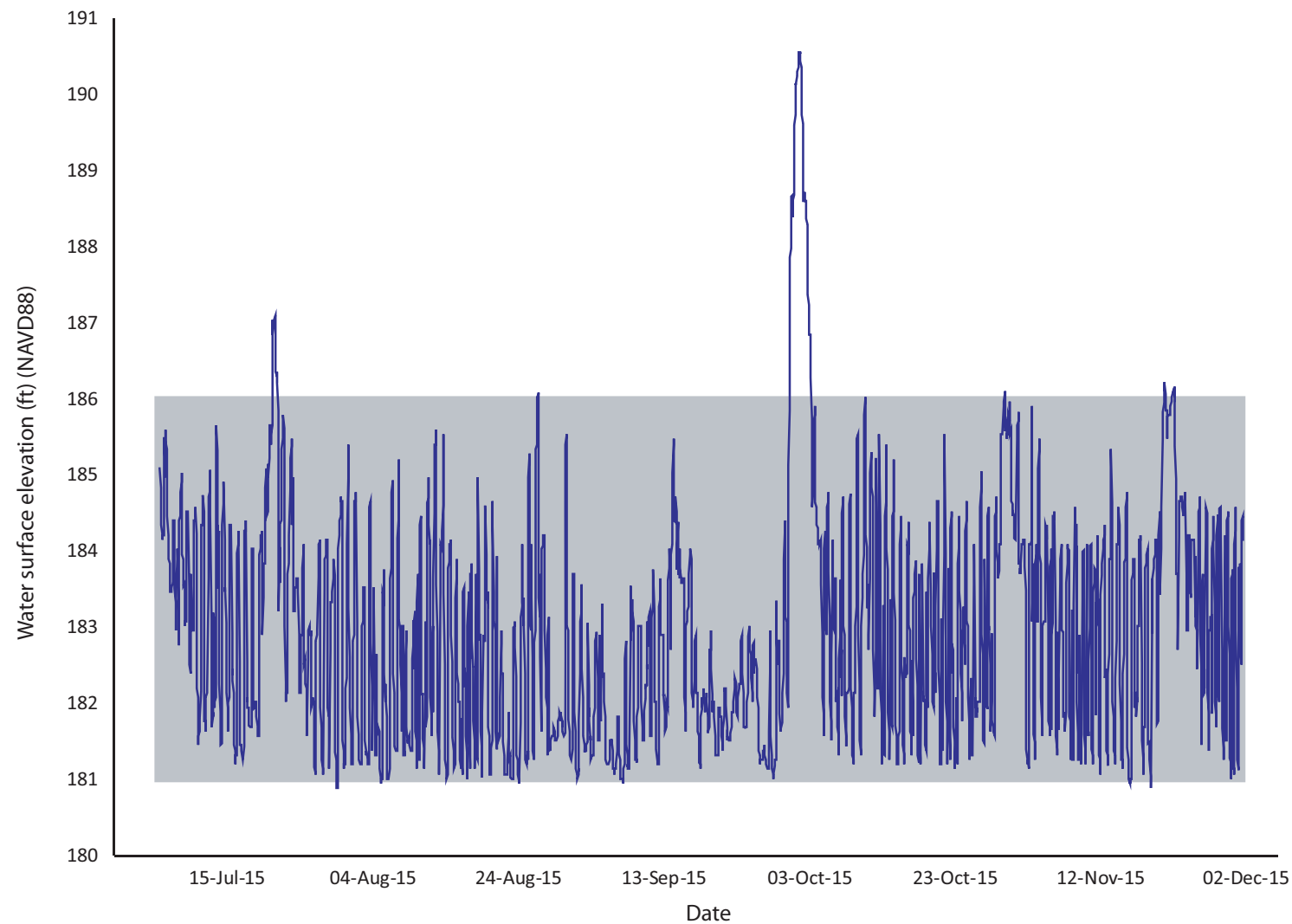


Note: Vernon tailrace stage data in 1-hour intervals. Tailrace data used as substitute for missing water level logger data at this site. No drawdowns below the normal minimum operating WSE at Vernon dam occurred due to high inflows during the Study 2 monitoring period in 2014.

*Note: Typical operational fluctuation at site equals 4.93 feet

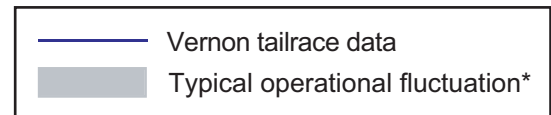


Water surface elevation data (2014) for 02-VR01 (Vernon Bank Site).

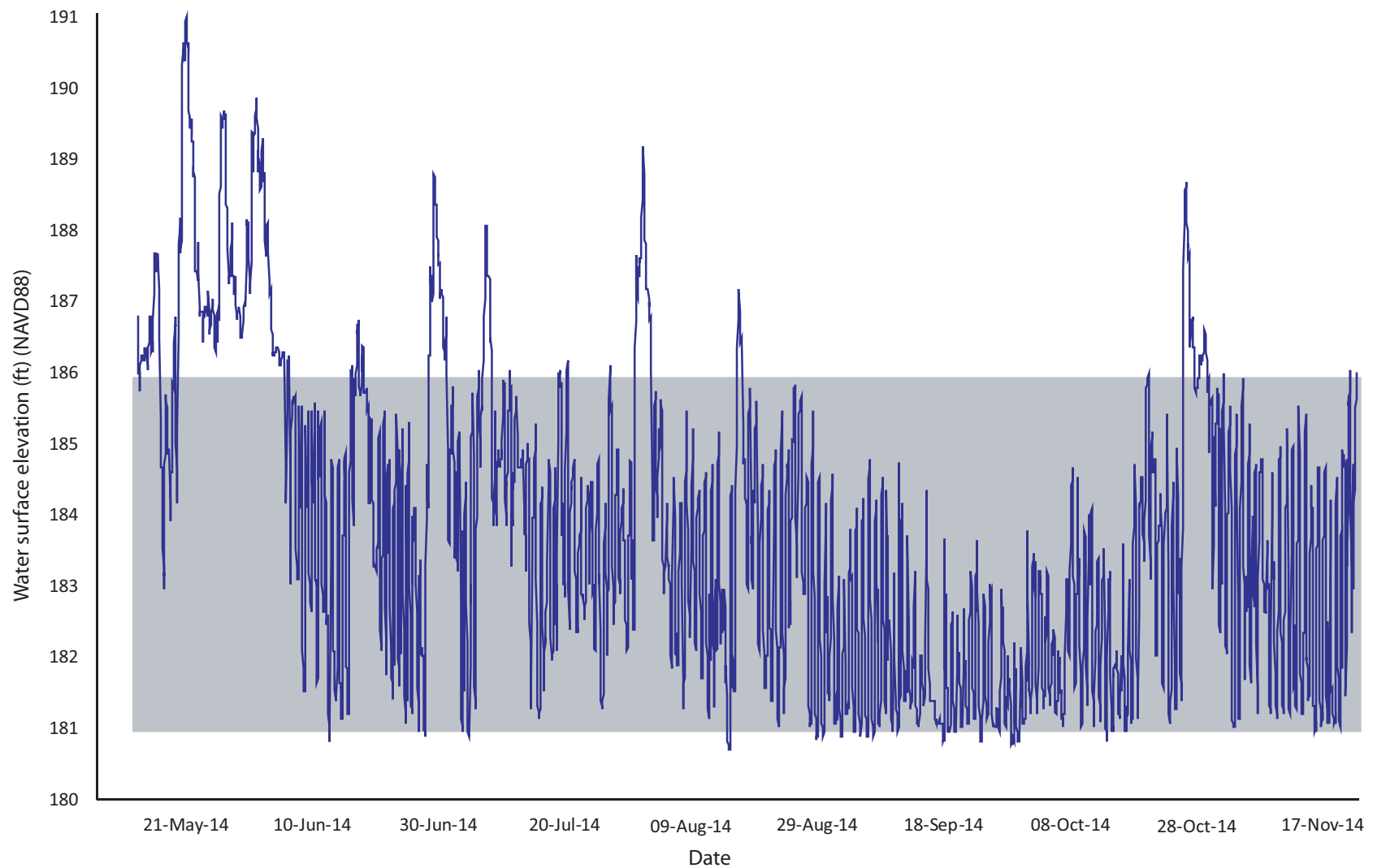


Note: Vernon tailrace stage data in 1-hour intervals. Tailrace data used as substitute for missing water level logger data at this site. No drawdowns below the normal minimum operating WSE at Vernon dam occurred due to high inflows during the Study 2 monitoring period in 2015.

*Note: Typical operational fluctuation at site equals 4.93 feet

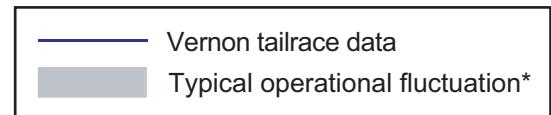


Water surface elevation data (2015) for 02-VR01 (Vernon Bank Site).

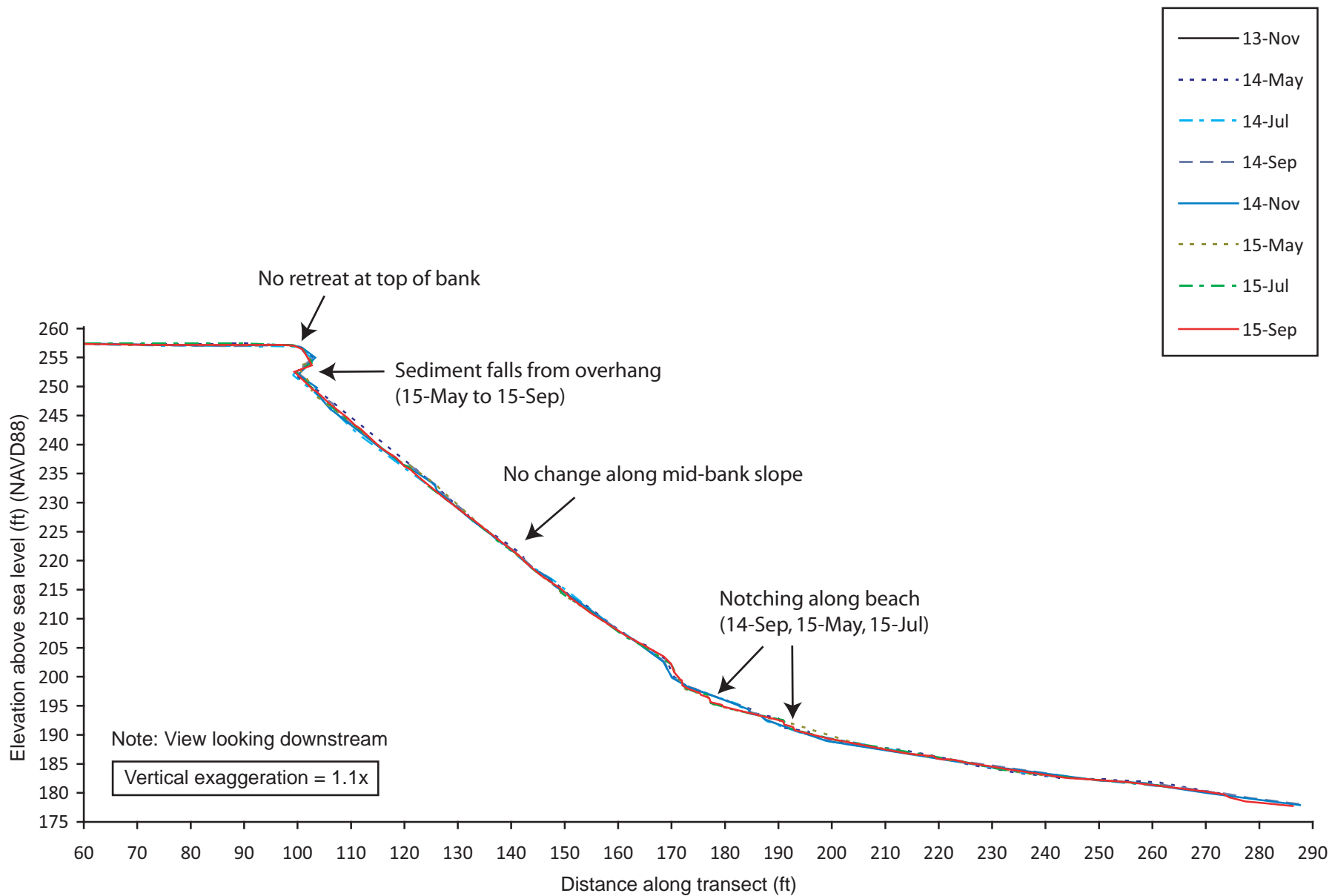


Note: Vernon tailrace stage data in 1-hour intervals. Tailrace data used as substitute for missing water level logger data at this site. No drawdowns below the normal minimum operating WSE at Vernon dam occurred due to high inflows during the Study 2 monitoring period in 2014.

*Note: Typical operational fluctuation at site equals 4.93 feet

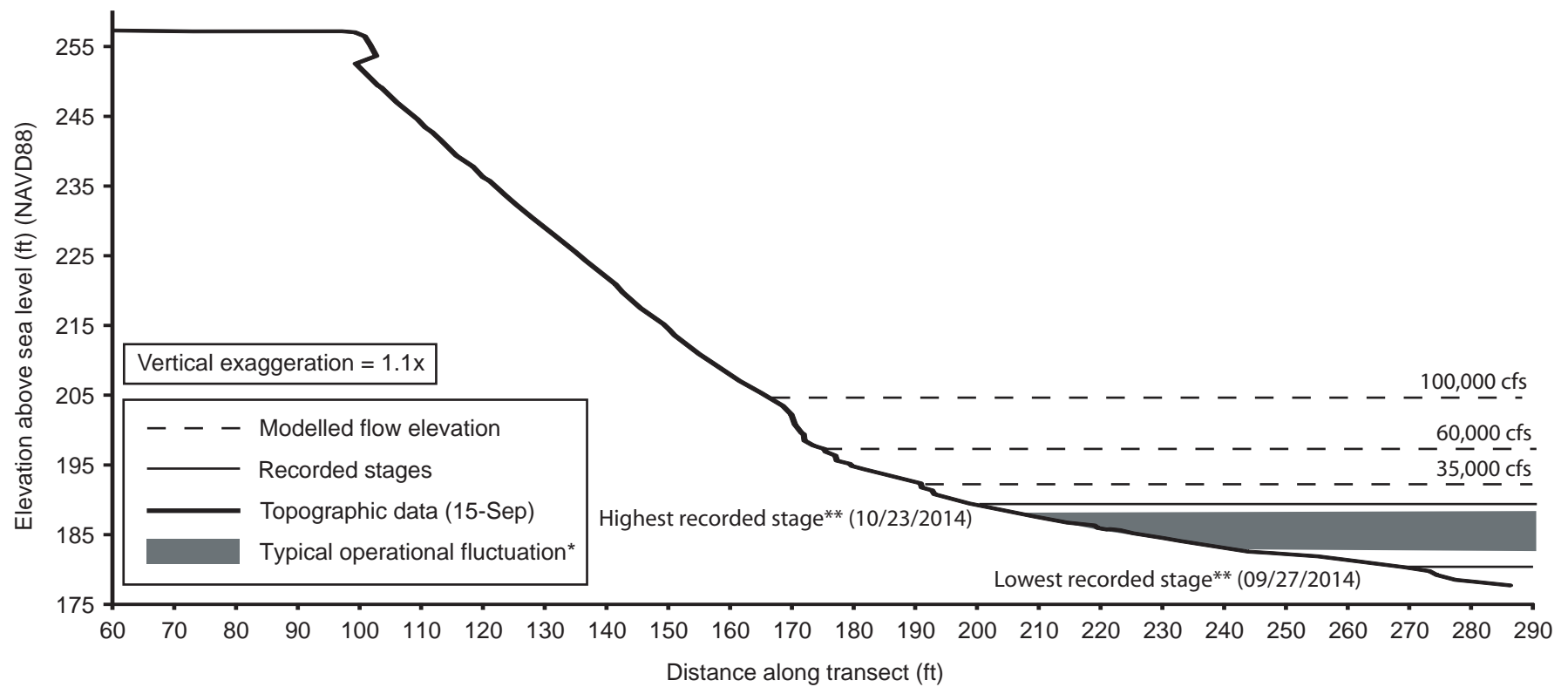


Water surface elevation data (2014) for 02-VR01 (Vernon Bank Site).



Time period	Observed changes
Summary	No retreat at top of bank. Upper and mid-bank consists of a grain flow surface at the angle of repose. While it is likely that sand grains are continuously mobilized along this slope the surveyed transects did not pick up any significant changes along the grain flow surface. Overhanging soil apron at top of bank has rotated as sandy loam has fallen from overhang. Seasonal changes in beach include sediment deposition, movement of rafted debris and notching along mid and upper beach surface. Transect not surveyed in November 2013, monitoring began in May 2014.
Initial survey (May-14)	Actively eroding high steep sandy bank just downstream of Vernon Dam. Bank erosion at this site has been monitored by the utility for a number of years.
May to July 2014	No observed changes.
July to September 2014	Notching in upper beach.
September to November 2014	No observed changes.
November 2014 to May 2015	Overhanging soil apron at top of bank has rotated downward as sediment falls from overhang. Deposition on middle portion of beach and notching in upper beach.
May to July 2015	Sandy loam has fallen from overhang at top of bank. Notching into middle of beach.
July to September 2015	Sandy loam has fallen from overhang at top of bank

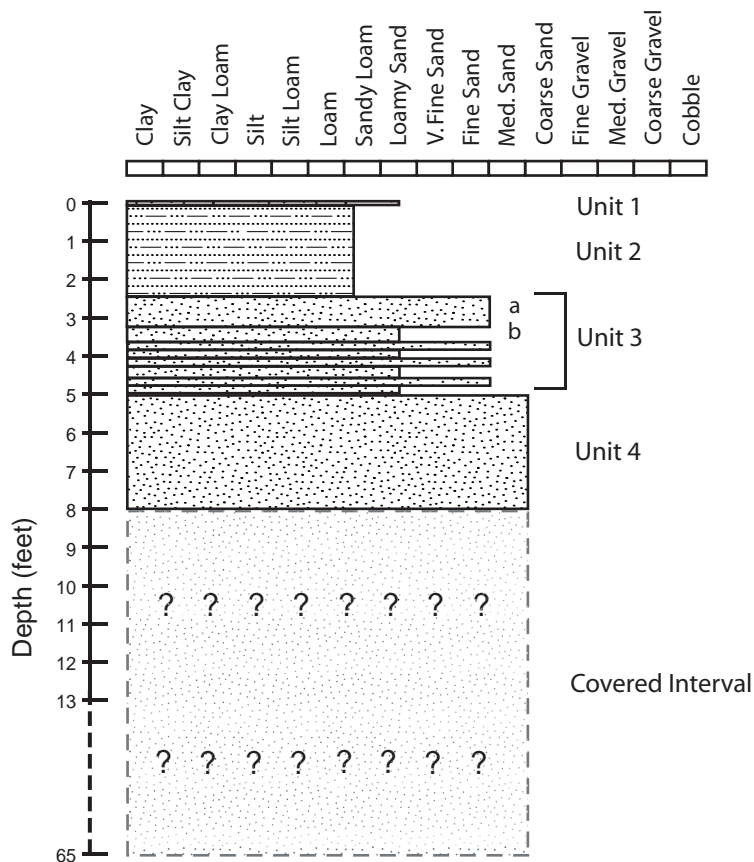
Narrative of observed changes at 02-VR01 (Vernon Bank Site).



*Note: Typical operational fluctuation at site equals 10 ft

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

Selected river stages at 02-VR01 (Vernon Bank Site).



Top elevation = 257.0 feet above sea level (NAVD88)

Unit 1: [0.1 ft thick] A Horizon (2.5Y 5/1 dry, 2.5Y 2.5/1 wet), strong coarse granular structure, loamy fine sand with abundant small roots; sharp contact with Unit 2.

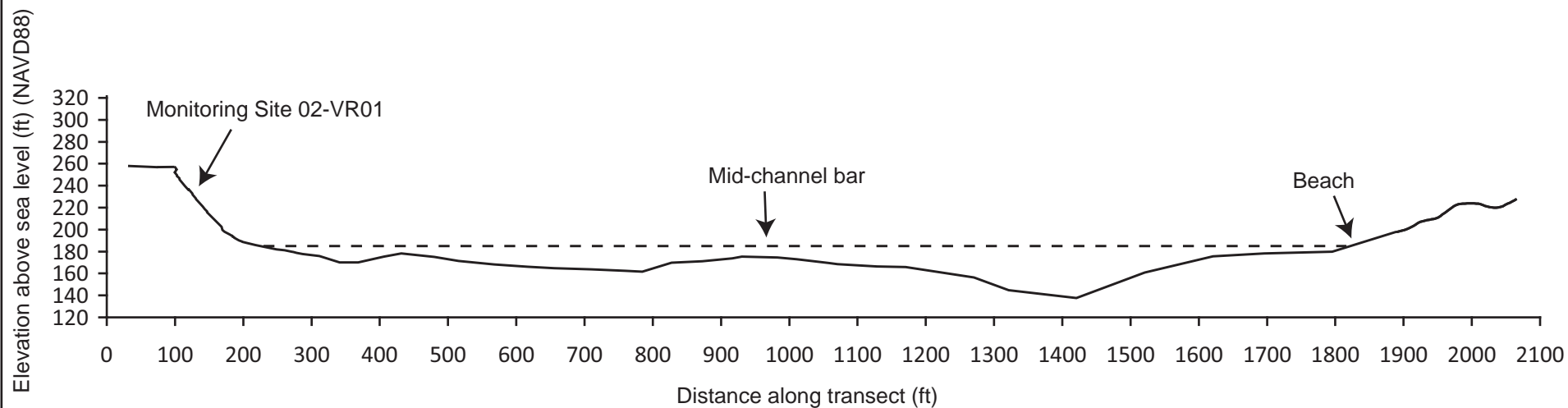
Unit 2: [2.4 ft thick] B Horizon (10YR 5/4 dry, 2.5Y 4/3 wet), medium strength small granular, fine sandy loam; sharp contact with Unit 3.

Unit 3: [2.5 ft thick] Interbedded unit consisting of: a) [0.2-0.8 ft thick] (2.5Y 5/4 dry, 2.5Y 3/3 wet), very weak small platy structure, fine to medium sand; sharp and diffuse contacts with b) [0.2-0.4 ft thick] (10YR 4/4 dry, 2.5Y 4/4 wet), weak medium platy, loamy sand.

Unit 4: [3 ft thick] Massive medium to coarse sand

Covered Interval: [57 ft thick] Presumed medium to coarse sand.

Stratigraphic column of 02-VR01 (Vernon Bank Site).



Note: View looking downstream

Vertical exaggeration = 1.5x

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

Full river transect for 02-VR01 (Vernon Bank Site).

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-VR01	1	42.7684567	-72.5112033	51	US overview of site from TOB downstream of transect
02-VR01	2	42.7688817	-72.5099150	300	Straight on view vertically down at transect from TOB
02-VR01	3	42.7691250	-72.5104633	130	Straight on view from end of transect
02-VR01	4	42.7691517	-72.5104383	45	US view from end of transect
02-VR01	5	42.7691450	-72.5104650	196	DS view from end of transect
02-VR01	6	42.7691750	-72.5104233	84	Oblique US view of beach
02-VR01	7	42.7691350	-72.5104383	176	Oblique DS view of riser from waters edge
02-VR01	8	42.7691583	-72.5104800	188	DS view of terrace riser downstream of transect end
02-VR01	9	42.7689550	-72.5100733	122	Straight on view of upper bank at transect from mid-bank
02-VR01	10	42.7689783	-72.5101683	159	DS view of mid-bank from transect
02-VR01	11	42.7689517	-72.5100417	145	Closeup of undercut upper bank at transect

Ground photograph locations at 02-VR01 (Vernon Bank Site).



Photo 1: 2013-11-21 11:58



Photo 1: 2014-06-02 12:41



Photo 1: 2014-11-13 15:14



Photo 1: 2015-05-20 11:30



Photo 1: 2015-07-15 13:02



Photo 1: 2015-09-18 12:05



Photo 1: 2015-11-30 15:25



Photo 2: 2014-06-03 11:06



Photo 2: 2014-07-21 17:00



Photo 2: 2014-09-26 14:05



Photo 2: 2014-11-13 15:18



Photo 2: 2015-05-20 11:27



Photo 2: 2015-07-15 13:26



Photo 2: 2015-09-18 11:34



Photo 2: 2015-11-30 15:31



Photo 3: 2014-06-03 11:47



Photo 3: 2014-09-26 12:45



Photo 3: 2014-07-21 16:02



Photo 3: 2014-11-13 15:21



Photo 3: 2015-05-20 11:07



Photo 3: 2015-07-15 12:15



Photo 3: 2015-09-18 11:41



Photo 3: 2015-11-30 14:59



Photo 4: 2014-06-03 11:47



Photo 4: 2014-07-21 16:03



Photo 4: 2014-09-26 12:41



Photo 4: 2014-11-13 15:23



Photo 4: 2015-05-20 11:09



Photo 4: 2015-07-15 12:16



Photo 4: 2015-09-18 11:41



Photo 4: 2015-11-30 15:02



Photo 5: 2014-07-21 16:03



Photo 5: 2014-09-26 12:55



Photo 5: 2015-05-20 11:09



Photo 5: 2015-07-15 12:16



Photo 5: 2015-11-30 15:01



Photo 6: 2014-06-03 11:47



Photo 6: 2014-07-21 16:02



Photo 6: 2014-09-26 12:44



Photo 6: 2014-11-13 15:22



Photo 6: 2015-05-20 11:11



Photo 6: 2015-07-15 12:21



Photo 6: 2015-11-30 15:03



Photo 7: 2014-06-03 11:47



Photo 7: 2014-07-21 16:03



Photo 7: 2014-09-26 12:52



Photo 7: 2014-11-13 15:24



Photo 7: 2015-05-20 11:12



Photo 7: 2015-07-15 12:22



Photo 7: 2015-11-30 15:04



Photo 8: 2014-06-03 11:47



Photo 8: 2014-11-13 15:24



Photo 8: 2015-05-20 11:15



Photo 8: 2015-07-15 12:25



Photo 8: 2015-09-18 11:41



Photo 9: 2014-06-03 11:49



Photo 9: 2014-11-13 15:28



Photo 9: 2015-05-20 12:02



Photo 9: 2015-07-15 12:53



Photo 9: 2015-09-18 11:48



Photo 9: 2015-11-30 15:16



Photo 10: 2014-07-21 16:26



Photo 10: 2014-09-26 13:01



Photo 10: 2015-07-15 12:50



Photo 10: 2015-11-30 15:18



Photo 11: 2014-07-21 16:39



Photo 11: 2014-09-26 13:07



Photo 11: 2015-05-20 12:14



Photo 11: 2015-07-15 12:51



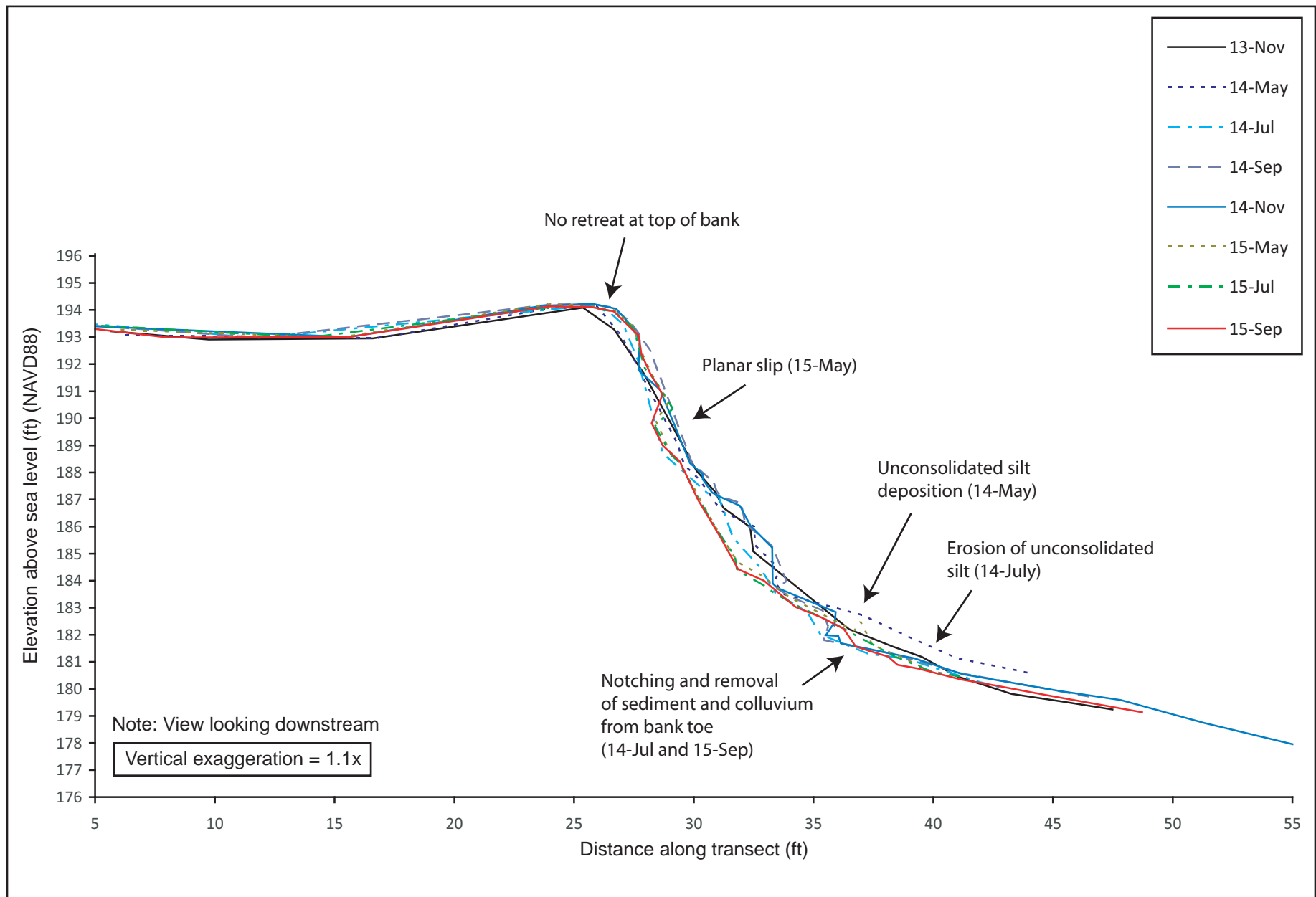
Photo 11: 2015-09-18 11:51



Photo 11: 2015-11-30 15:19



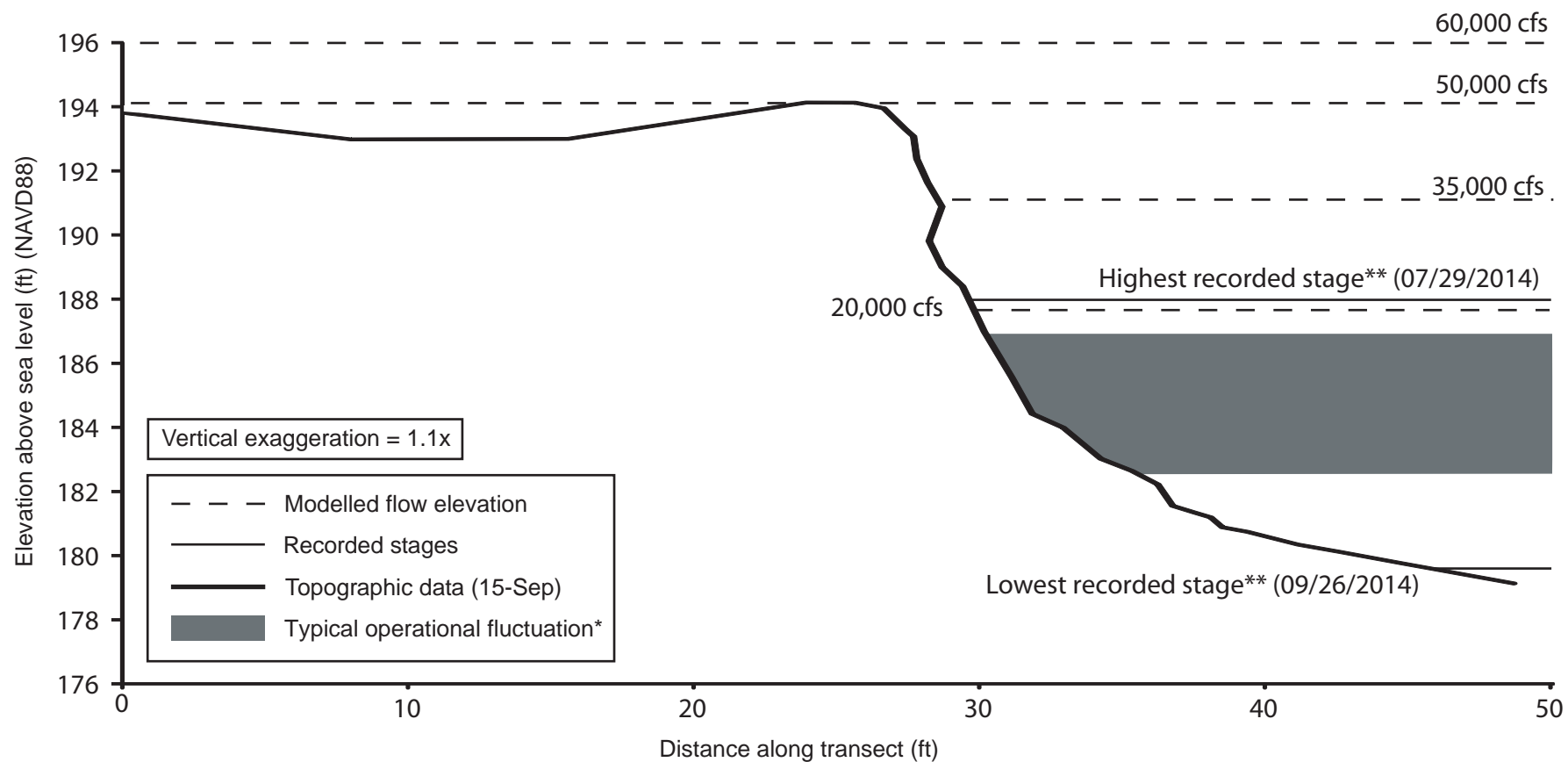
Site map for 02-VR02 (Stebbins Island Site).



Erosion monitoring transect for 02-VR02 (Stebbins Island Site).

Time period	Observed changes
Summary	Planar slip between Nov-14 and May-15 steepens bank slope. Topple blocks from upper and mid-bank detach and are mobilized and transported out of transect. Seasonal changes observed along bank toe and channel bed.
Initial survey (Nov-13)	Site consists of steep alluvial bank vegetated with deciduous trees and shrubs, gravel channel bed.
November 2013 to May 2014	Unconsolidated silt and fine sediment deposited along bank toe.
May to July 2014	Unconsolidated silt and fine sediment removed along bank toe.
July to September 2014	No observed changes.
September to November 2014	No observed changes.
November 2014 to May 2015	Planar slip as overhang develops in upper bank. Freshly eroding scarp along upper and mid-bank with topple blocks deposited along bank toe.
May to July 2015	Topple blocks removed from bank toe.
July to September 2015	Topple blocks detach from upper bank and are deposited along bank toe. Notching at toe of bank.

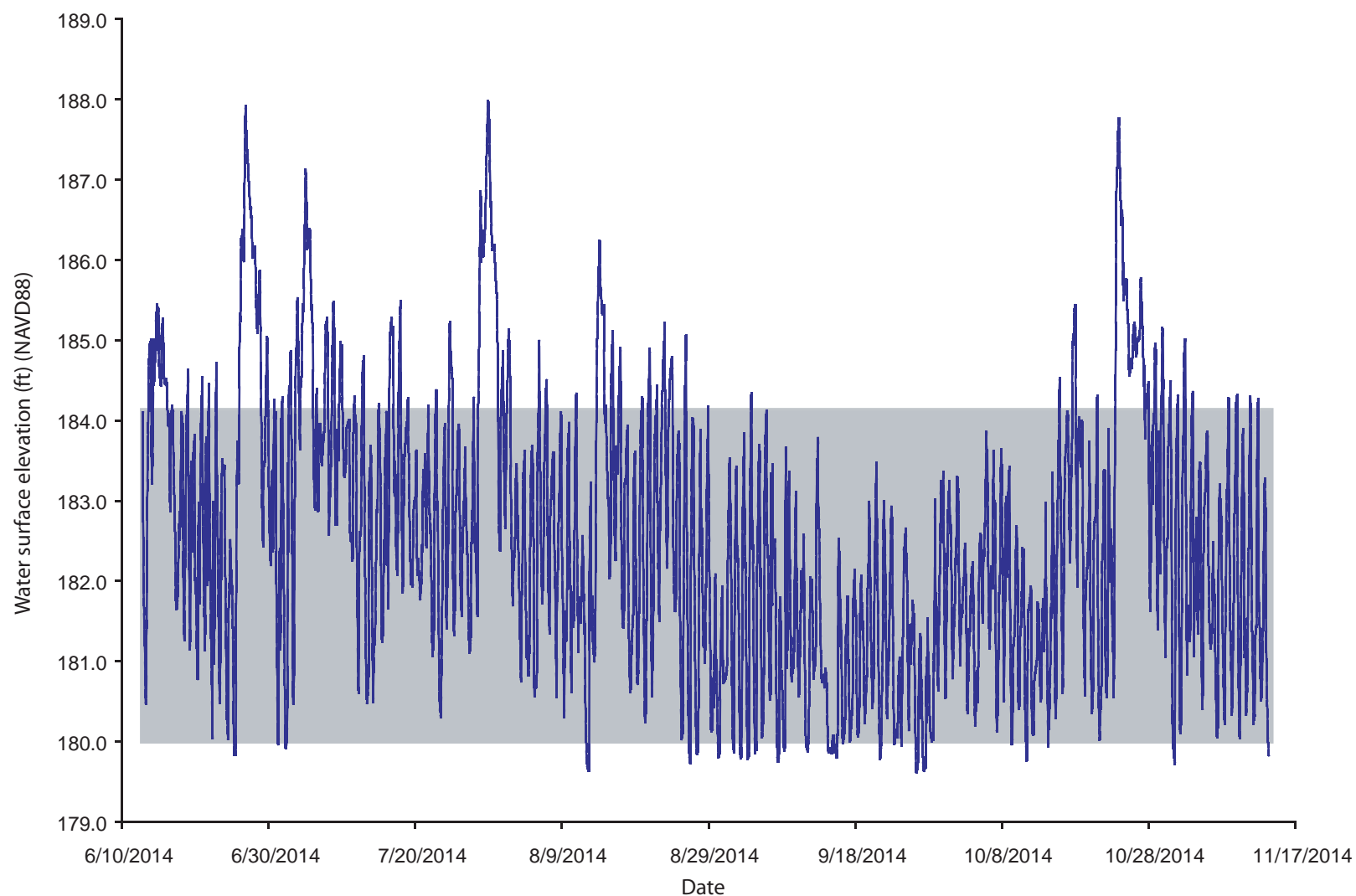
Narrative of observed changes at 02-VR02 (Stebbins Island Site).



*Note: Typical operational fluctuation at site equals 4.11 feet

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

Selected river stages at 02-VR02 (Stebbins Island Site).



Note: Stage data in 15-minute intervals. No drawdowns below the normal minimum operating WSE at Vernon dam occurred due to high inflows during the water level logger period of record in 2014.

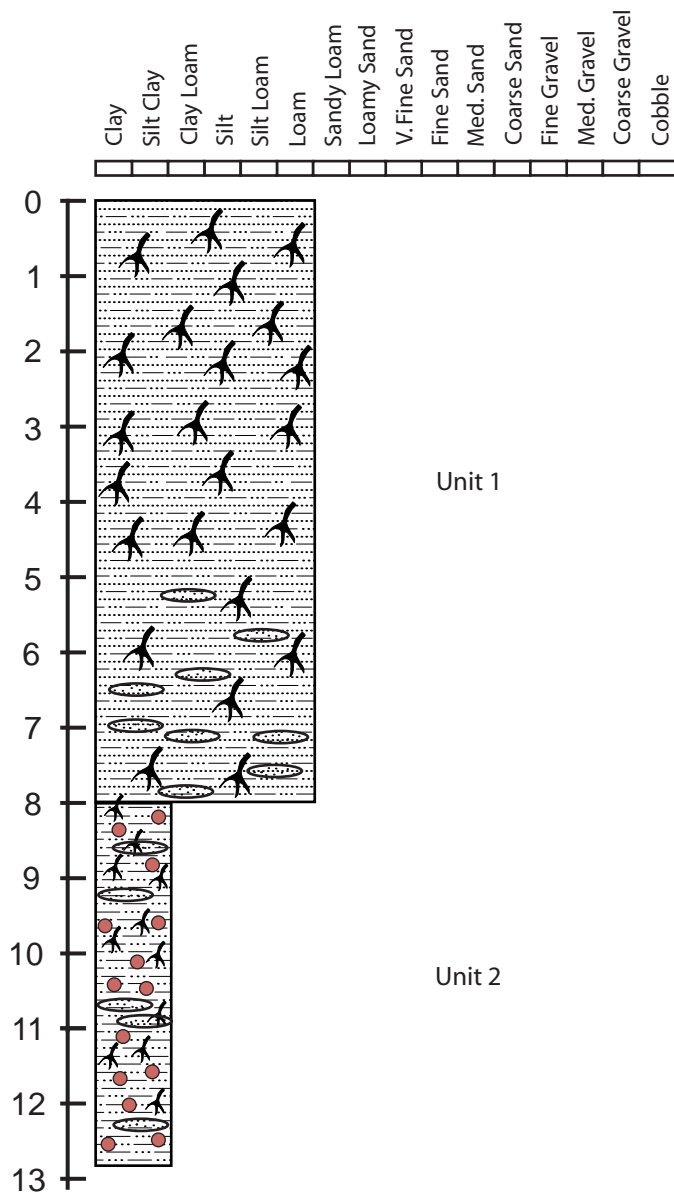
*Note: Typical operational fluctuation at site equals 4.14 feet

— Recorded stages
Typical operational fluctuation*

Water surface elevation data (2014) for 02-VR02 (Stebbins Island Site).

No valid 2015 water level data to report

Water surface elevation data (2015) for 02-VR02 (Stebbins Island Site).

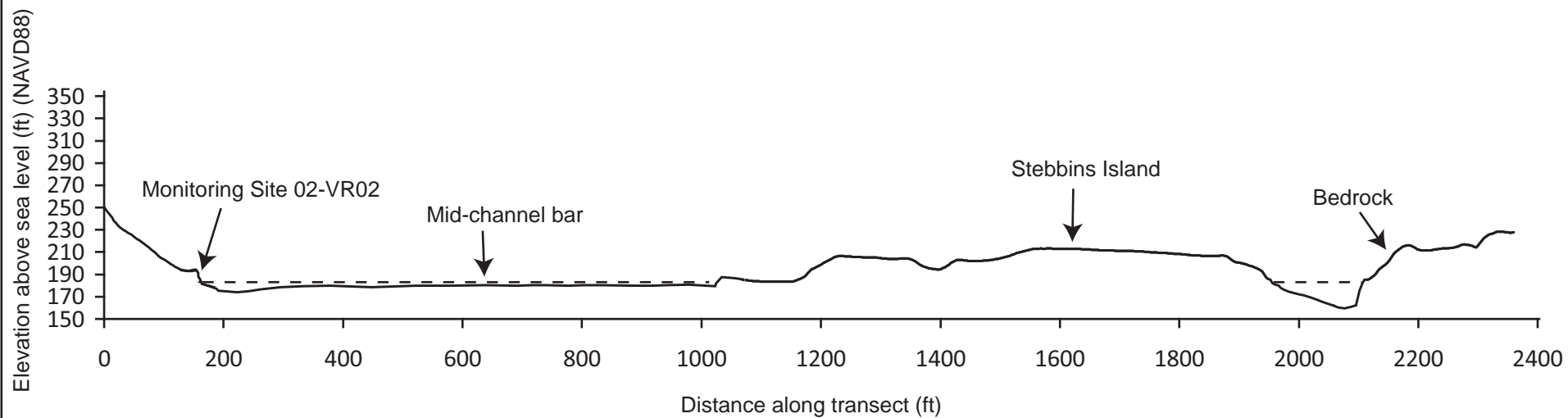


Top elevation = 193.9 feet above sea level (NAVD88)

Unit 1: [8 ft thick] (2.5Y 5/3 dry, 2.5Y 3/3 wet), fining-upward weak medium blocky sandy loam to loam with abundant coarse roots, small sandier lenses at bottom of unit.

Unit 2: [4.7 ft thick] (GLE Y 1 2.5/10 Y wet), medium small granular clay loam with abundant small roots and sandy lenses, abundant oxidized nodules up to 2cm in diameter, assumed to extend to cobble bed.

Stratigraphic column of 02-VR02 (Stebbins Island Site).



Note: View looking downstream

Vertical exaggeration = 1.5x

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

Full river transect for 02-VR02 (Stebbins Island Site).

Site	Photo #	Latitude	Longitude	Azimuth	Subject
02-VR02	1	42.7713817	-72.5060917	313	Portrait overview of bank from end of transect
02-VR02	2	42.7713683	-72.5061350	229	US view of river bank from end of transect
02-VR02	3	42.7713517	-72.5061300	23	DS of transect from end of transect
02-VR02	4	42.7712767	-72.5061750	299	Straight on closeup of bank toe at transect
02-VR02	5	42.7712778	-72.5061750	317	DS oblique view of bank adjacent to transect
02-VR02	6	42.7713800	-72.5064400	116	Portrait vertically down at transect from TOB

Ground photograph locations at 02-VR02 (Stebbins Island Site).



Photo 1: 2013-11-21 12:54



Photo 1: 2014-06-03 12:54



Photo 1: 2014-09-30 13:55



Photo 1: 2014-11-13 11:39



Photo 1: 2015-05-20 09:29



Photo 1: 2015-07-15 14:07



Photo 1: 2015-09-18 13:30



Photo 1: 2015-11-30 15:47



Photo 2: 2013-11-21 12:54



Photo 2: 2014-09-30 13:56



Photo 2: 2014-06-03 12:54



Photo 2: 2014-11-13 11:39



Photo 2: 2015-05-20 09:26



Photo 2: 2015-09-18 13:29



Photo 2: 2015-07-15 14:08



Photo 2: 2015-11-30 15:48



Photo 3: 2014-06-03 12:54



Photo 3: 2014-07-21 13:45



Photo 3: 2014-09-30 13:56



Photo 3: 2015-05-20 09:27



Photo 3: 2015-07-15 14:09



Photo 3: 2015-09-18 13:29



Photo 3: 2015-11-30 15:49



Photo 4: 2014-06-03 12:55



Photo 4: 2014-07-21 13:45



Photo 4: 2014-09-30 13:55



Photo 4: 2015-05-20 09:28



Photo 4: 2015-07-15 14:09



Photo 4: 2015-09-18 13:30



Photo 4: 2015-11-30 15:50



Photo 5: 2013-11-21 12:55



Photo 5: 2014-11-13 11:40



Photo 5: 2015-07-15 14:10



Photo 5: 2015-09-18 13:31



Photo 5: 2015-11-30 15:51



Photo 6: 2014-09-30 13:59



Photo 6: 2014-11-13 11:42



Photo 6: 2015-05-20 09:41

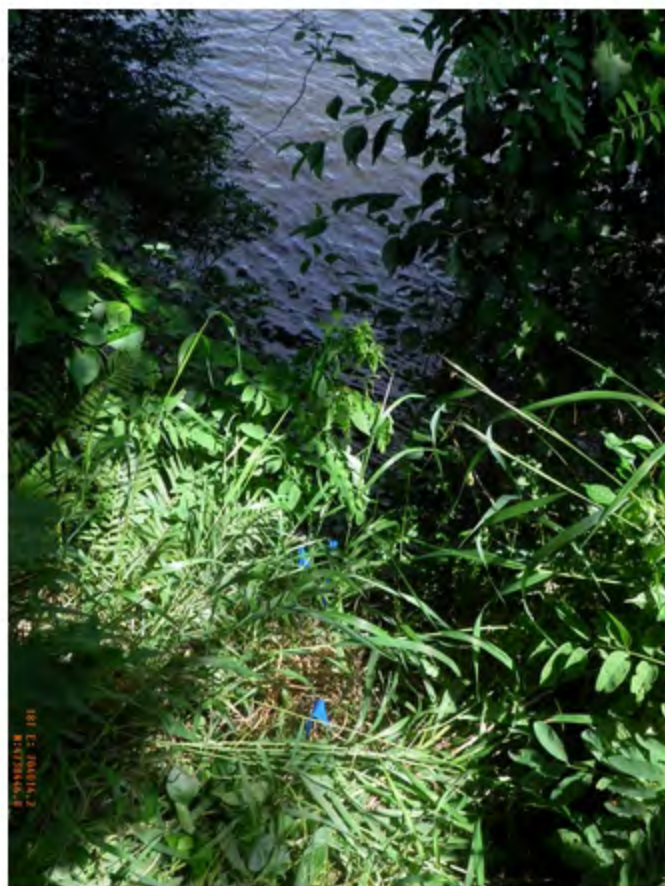


Photo 6: 2015-07-15 14:19



Photo 6: 2015-11-30 15:56