Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _2__

Site Name: Larkin Mill Dam	**SITE ID #: LMD-05**
Town, State/Province: Newbury, MA	**Stream Name: Parker River**
Pre-restoration Post-restoration (circle one)	**Date: June 8th, 2010**
Form completed by: Matt Collins	**Time (24hr): 14:00**
Investigators: P. Nadeau and M. Collins	

CROSS SECTION ID # LMD-05	**Left Monument (UTM)**	**N See 2008 Data Sheets E**
	Right Monument (UTM)	**N E**

Location Description: Upstream of I-95	**Benchmark Description: USGS staff gauge**
Left Monument Description: See 2008 Data Sheets	**Right Monument Description: See 2008 Data Sheets**

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft.	ft.	ft.	ft.	ft.	
	5.58			2.5	Elevation measured on USGS Gauge--add 23.46 for NGVD
3.0			3.39		Top of pin
3.0			3.75		Base of pin
10.8			4.51		Upland
21.3			5.77		Upland
28.5			7.07		LEW
35.0			8.65		Woody debris, gravel, mud
42.0			9.00		Large Stones, mud
49.0			8.82		Gravel/cobble
56.0			8.66		Gravel/cobble
63.0			8.24		Gravel/cobble
70.0			8.46		Gravel/cobble
77.0			9.02		Gravel/cobble
84.0			9.92		Base of boulder
91.0			10.08		Boulder
98.0			10.76		Cobble
105.0			10.85		Cobble
112.0			10.29		Cobble/Boulder

Legend **HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS**

	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_2_ of _2__

Site Name: Larkin Mill Dam	SITE ID #:	XS ID # LMD-05
Date: June 8th, 2010	Investigators: P. Nadeau and M. Collins	

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
119.0			9.95		Gravel
126.0			9.35		Gravel/sand
133.0			9.68		Sand/mud/organics
140.0			9.86		Mud/organics
147.0			9.50		Mud/organics
154.0			8.31		Mud/organics
161.0			7.74		Mud/organics
168.9			7.16		Edge of water (island) emergent v
172.2			7.16		Edge of water (island) emergent v
182.0			7.79		Emergent veg., mud, sand, some
188.0			8.01		Emergent veg., mud, sand, some
192.4			7.12		REW, fine sand
197.0			6.15		Approx. on bank
208-2			4.32		Upland
219-2			2.71		Upland
229.4-2			1.37		Base of pin
229.4-2			0.79		Top of pin

Legend	HI = ELEV + BS;	TP ELEV = HI - FS;	New HI = TP ELEV + BS
	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _2__

Site Name: Larkin Mill Dam	**SITE ID #:** LMD-01
Town, State/Province: Newbury, MA	**Stream Name:** Parker River
Pre-restoration	**Date:** June 9, 2008
Form completed by: Beth Lambert	**Time (24hr):** 10 to 12
Investigators: Matt Collins, Lisa Wade	

CROSS SECTION ID #	**Left Monument (UTM)**	**N** 42°45.196' **W** 70°56.759'
	Right Monument (UTM)	**N** 42°45.201' **W** 70°56.750'

Location Description Reference Section.	**Benchmark Description** USGS staff gage by I-95
Left Monument Description Foot of young double trunked oak tree between bas of hill and stream.	**Right Monument Description** 20 ft DS of old stone wall by red oak.

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft.	ft.	ft.	ft.	ft.	
	15.11			2.5	+ 23.46 ft to reach NGVD elevation reading from the staff
LM(0)			10.17		top of pin (LB monument)
0.0			10.64		base of pin (LB monument)
8.0			10.92		
20.0			12.25		
27.6			13.16		by chewed off beaver stump
33.2			14.72		top of LB
33.7			15.79		LEW
36.0			16.73		soft bottom. Muck with organics
37.4			16.93		boulder
39.6			17.84		muck and organic, wood
41.7			18.61		muck and organic, wood
44.0			19.20		wood
47.0			19.62		sand and fines
48.5			19.86		thalwag
51.0			18.72		rock, boulder

Legend **HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS**

	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_2 of _2__

Site Name: Larkin Mill Dam | **SITE ID #:** LMD | **XS ID #:** LMD-01

Date: June 9, 2008 | **Investigators:** Matt Collins, Lisa Wade, Beth Lambert

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
55.0			19.98		sandy bottom, base of boulder
58.0			19.53		sand and gravel
61.0			19.10		sand and gravel. WSE = 3.9ft
64.0			18.50		sand and gravel
67.5			18.19		sand, fines, organics
71.9			17.10		sand, fines, organics
77.5			15.80		REW
78.8			14.75		Right lower bank top
80.2			13.54		base of stone wall
82.0			12.04		top of stone wall
83.5			12.97		ground surface
86.7			12.97		ground surface on a log 6 inches upstream of tape.
94.0			13.25		ground surface
94.9			11.49		large log
96.0			13.27		ground surface
99.2			12.83		ground surface
105.0			13.24		ground surface
117.7			12.92		base of boulder
119.6			11.59		base of boulder
122.3			12.67		base of boulder
128.0			11.50		
133.3			11.92		base of pin, RB
133.3			11.32		top of pin, RB

Legend

HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS

LB = Left Bank; LEW = Left Edge of Water; BKF = Bankfull; BM = Benchmark

RB = Right Bank; REW = Right Edge of Water; CL = Center Line; TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _2__

Site Name: Larkin Mill Dam	**SITE ID #: LMD-01**
Town, State/Province: Newbury, MA	**Stream Name: Parker River**
Pre-restoration Post-restoration (circle one)	**Date: June 7th, 2010**
Form completed by: Patrick Nadeau	**Time (24hr): 11:00**
Investigators: P. Nadeau and M. Collins	

CROSS SECTION ID # LMD-01	**Left Monument (UTM)**	**N See 2008 Data Sheets E**
	Right Monument (UTM)	**N E**

Location Description: Reference Section	**Benchmark Description: USGS Stream Gauge by I-95**
Left Monument Description: Foot of young double trunked oak tree between base of hill and stream	**Right Monument Description: 20 ft. Downstream of old stone wall by red oak tree**

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft.	ft.	ft.	ft.	ft.	
	9.04			2.9	Elevation measured on USGS Gauge--add 23.46 for NGVD
1.0			4.52		Top of Pin
1.0			4.94		Base of Pin, Organics, Upland
9.9			5.29		Upland Organics
15.0			6.01		Base of root beaver felled tree
16.0			6.11		
23.0			6.44		Upland
28.7			7.48		Base of beaver stump
34.4			9.17		Top of band
34.9			10.27		LEW
38.6			11.27		Boulder
42.0			13.15		Muck and Organics
46.0			14.03		Thalweg, packed fine sand
51.1			13.63		Wood
53.6			13.14		Boulder
56.2			14.24		Firm sand (some muck)
59.4			13.86		Base of log, course substrate (grav
59.9			12.98		On top of log

Legend **HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS**

LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_2_ of __2__

Site Name: Larkin Mill Dam	SITE ID #:	XS ID # LMD-01
Date: June 7th, 2010	Investigators: P. Nadeau and M. Collins	

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
60.1			15.76		Far side of log, firm sand/gravel
66.9			12.82		Firm sand/gravel
71.0			11.93		Woody organic debris and muck
75.3			10.65		Boulder
78.2			10.27		REW, fine sand some muck
79.6			9.27		Top of Bank
81.0			8.62		Between two boulders
83.1			6.35		Top of Boulder
87.0			7.55		Floodplain Surface, Organics
95.0			7.68		Organics
95.4			6.18		Floodplain, top of log
96.1			7.53		Floodplain Organics
102.4			7.67		Floodplain Organics
118.9			7.22		Base of boulder, water stained or
120.0			6.08		Side of boulder
129.0			6.47		Floodplain Organics
134.2			6.21		Base of pin
134.2			5.63		Top of pin

Legend	HI = ELEV + BS;	TP ELEV = HI - FS;	New HI = TP ELEV + BS
	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _3__

Site Name: Larkin Mill Dam	**SITE ID #:** LMD-02
Town, State/Province: Newbury, MA	**Stream Name:** Parker River
Pre-restoration	**Date:** June 9, 2008
Form completed by: Beth Lambert	**Time (24hr):** 13:50 -15:00
Investigators: Matt Collins, Lisa Wade, Beth Lambert	

CROSS SECTION ID #	**Left Monument (UTM)**	**N 42° 45.168" W 70° 56.738"**
	Right Monument A (UTM)	**N 42° 45.168" W 70° 56.753"**
	Right Monument B (UTM)	**N 42° 45.158" W 70° 56.744"**

Location Description: By USGS gauge.	**Benchmark Description:** See LMD-01
Left Monument Description: Metal stake - USGS (?) behind gauge house.	**Right Monument Description**

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft.	ft.	ft.	ft.	ft.	
					RB part of x-section is configured as a dog leg with two monuments, RBA and RBB, with RBA being closer to the stream
		See LMD-01			
LM(0)			10.57		base of pin
0.0			10.33		top of pin
6.0			10.72		top of terrace
12.0			11.28		top of terrace
17.0			11.97		top of bank. Edge of LB slope. Poison ivy
19.8			13.24		halfway down LB slope. Poison ivy
21.7			14.84		halfway down LB slope. Poison ivy
25.1			15.75		LEW, boulder
26.2			15.54		boulder
27.6			17.77		boulder
30.0			18.20		boulder
31.3			18.28		cobbles, thalway (?)
34.1			17.74		cobbles.
35.5			17.37		base of large boulder
36.9			16.36		top of boulder

37.6			16.79		woody debris
39.7			17.31		boulders

Legend	HI = ELEV + BS;	TP ELEV = HI - FS;	New HI = TP ELEV + BS
	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_2_ of _3__

Site Name: Larkin Mill Dam	**SITE ID #:** LMD	**XS ID #:** LMD-02
Date: June 9, 2008	**Investigators:** Matt Collins, Lisa Wade, Beth Lambert	

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
40.4			17.07		boulder
41.0			15.95		boulder
41.3			15.84		REW, boulder
42.8			13.92		top of boulder
44.1			15.43		base of boulder
44.8			15.15		bank slope
44.8			14.27		top of bank
47.7			14.56		ground surface
50.3			12.59		top of boulder
51.8			13.68		ground surface
54.3			13.44		brambles
56.0			12.96		brambles
61.8			12.78		brambles
66.3			12.42		ground surface
71.3			12.39		base of pin (moved tape to RBA)
0.0			12.39		base fo pin
1.0			12.39		
5.0			12.99		edge of moss. Seasonally wet area
9.7			13.30		top of bank flood chute, mossy
12.7			14.51		edge of moss and water. Stained leaves, seasonally wet with groundwater
16.0			15.23		wet leaves
18.7			14.74		top of rock
20.0			14.73		top of boulder
23.6			15.03		leaves
26.8			12.92		leaves
31.3			12.21		base of boulder
31.2			10.39		boulder
37.0			11.29		

Legend	HI = ELEV + BS;	TP ELEV = HI - FS;	New HI = TP ELEV + BS

	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_3_ of _3__

Site Name: Larkin Mill Dam | **SITE ID #:** LMD | **XS ID #:** LMD-02

Date: June 9, 2008 | **Investigators:** Matt Collins, Lisa Wade, Beth Lambert

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
43.5			10.43		
47.2					RBB pin. Can't get there.

Legend | **HI = ELEV + BS;** | **TP ELEV = HI - FS;** | **New HI = TP ELEV + BS**

LB = Left Bank | LEW = Left Edge of Water | BKF = Bankfull | BM = Benchmark

RB = Right Bank | REW = Right Edge of Water | CL = Center Line | TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _2__

Site Name: Larkin Mill Dam	**SITE ID #:** LMD-03
Town, State/Province: Newbury, MA	**Stream Name:** Parker River
Pre-restoration	**Date:** June 9, 2008
Form completed by: Lisa Wade	**Time (24hr):** 15:32
Investigators: Matt Collins, Lisa Wade, Beth Lambert	

CROSS SECTION ID #	**Left Monument (UTM) °**	**N** **E**
	Right Monument (UTM)	**N** **E**

Location Description: Across x-section of USGS gage weir	**Benchmark Description:** USGS staff gage
Left Monument Description: 15ft DS of USGS rebar which is the pin for LMD-02	**Right Monument Description:** 15-20ft from RM, near boulder cluster

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft.	ft.	ft.	ft.	ft.	
		Same as LMD-01			
LM(0)			10.57		base of pin
0.0			10.33		top of pin
6.0			10.51		
12.0			10.68		
18.3			11.23		edge of concrete curtain
23.5			11.19		edge of spillway wall
24.7			15.81		spillway. Weir lip, Edge of water
27.8			16.12		going across top of weir
30.4			16.41		
32.2			16.57		deepest part of weir
34.5			16.32		
37.2			16.06		
38.5			15.84		edge of water
39.8			15.74		right lip of weir
40.7			11.74		top of decayed abuttment
			11.17		parrallel reading of 40.7 to caputre highest point of abuttment
45.7			11.00		along x-section. Embankment

Legend **HI = ELEV + BS;** **TP ELEV = HI - FS;** **New HI = TP ELEV + BS**

	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_2_ of _2__

Site Name: Larkin Mill Dam | **SITE ID #:** LMD | **XS ID #:** LMD-02

Date: June 9, 2008 | **Investigators:** Matt Collins, Lisa Wade, Beth Lambert

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
51.0			10.38		
56.0			10.13		
61.0			9.98		
63.2			10.06		base of pin
63.2			9.73		top of pin

Legend

HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS

LB = Left Bank; LEW = Left Edge of Water; BKF = Bankfull; BM = Benchmark

RB = Right Bank; REW = Right Edge of Water; CL = Center Line; TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _3__

Site Name: Larkin Mill Dam	**SITE ID #:** LMD-04
Town, State/Province: Newbury, MA	**Stream Name:** Parker River
Pre-restoration	**Date:** June 10, 2008
Form completed by: Lisa Wade	**Time (24hr):** 10:30 - 11:50
Investigators: Matt Collins, Lisa Wade	

CROSS SECTION ID #	**Left Monument (UTM)**	**N** 42° 45.174" **W** 70° 56.716"
	Right Monument (UTM)	**N** 42° 45.152" **W** 70° 56.732"

Location Description: downstream of weir for hydraulic modeling	**Benchmark Description:** UGS staff gage
Left Monument Description: a ways upslope where weir embankment ties into contour	**Right Monument Description:** base of boulder

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft.	ft.	ft.	ft.	ft.	
	5.55	8.59		3.04	+23.46 to get to NGVD
LM(0)			0.62		top of pin
0.0			1.25		base of pin
6.0			2.24		
12.0			3.24		
18.0			4.93		
24.0			4.62		
30.0			5.01		
36.0			5.59		
38.1			5.67		Edge of recent flood
42.0			6.02		
48.0			6.27		
49.5			6.51		top of low bank
52.3			7.25		LEW on twigs/organics
55.4			8.55		mixed organics, fines and sand
58.0			8.90		mixed organics, fines and sand
60.7			9.36		cobble, sand, gravel, large wood
64.3			9.89		sand and cobble
67.2			9.82		

Legend **HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS**

	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_2_ of _3__

Site Name: Larkin Mill Dam	**SITE ID #:** LMD	**XS ID #:** LMD-04
Date: June 10, 2008	**Investigators:** Matt Collins, Lisa Wade	

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
69.5			8.75		boulder
71.5			9.00		boulder
72.5			8.07		on boulder
73.8			9.71		more boulders
76.5			10.49		boulder
78.5			8.81		boulder
79.8			9.76		boulder
81.1			9.52		boulder
83.4			9.29		boulder
85.2			10.25		boulder
86.0			7.20		out of water on a boulder
88.4			7.27		REW (on a boulder)
90.0			6.75		out of water on a boulder
92.0			5.98		out of water on a boulder
93.6			9.04		in water
95.6			5.28		boulder
98.3			4.39		boulder
100.1			7.18		Seasonally flooded, groundwater stained leaves
102.0			7.25		Seasonally flooded, groundwater stained leaves
103.3			5.49		boulder
104.5			6.42		ground
106.8			6.14		ground
107.3			4.34		large woody debris
108.3			5.67		ground
110.6			5.57		ground, base of boulder
114.0			3.43		top of boulder
115.5			4.05		

Legend

HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS

LB = Left Bank; LEW = Left Edge of Water; BKF = Bankfull; BM = Benchmark

RB = Right Bank; REW = Right Edge of Water; CL = Center Line; TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_3_ of _3__

Site Name: Larkin Mill Dam | **SITE ID #:** LMD | **XS ID #:** LMD-04

Date: June 10, 2008 | **Investigators:** Matt Collins, Lisa Wade

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
120.3			3.76		base of pin
120.3			3.30		top of pin
					Distance between LMD-03 and LMD-04 cross sections on Left bank= 35ft

Legend

HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS

LB = Left Bank | LEW = Left Edge of Water | BKF = Bankfull | BM = Benchmark

RB = Right Bank | REW = Right Edge of Water | CL = Center Line | TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _2__

Site Name: Larkin Mill Dam	**SITE ID #:** LMD-05
Town, State/Province: Newbury, MA	**Stream Name:** Parker River
Pre-restoration	**Date:** June 10, 2008
Form completed by: Lisa Wade	**Time (24hr):** 13:50
Investigators: Matt Collins, Lisa Wade	

CROSS SECTION ID #	**Left Monument (UTM)**	**N** **E**
	Right Monument (UTM)	**N** 42° 45.141 **W** 70° 56.714

Location Description	**Benchmark Description:** USGS staff as ref in LMD-04
Left Monument Description: 23ft from water edge. Base of embankment	**Right Monument Description:** 33ft from REW. Offset from concrete drainage swale.

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft.	ft.	ft.	ft.	ft.	
		See LMD-04			
LM(0)			3.85		top of pin
13.8			5.45		
21.1			6.64		bank top
23.0			7.38		LEW
27.4			8.21		organics and muck
31.0			9.02		
38.0			9.86		cobble and sand
46.0			9.04		cobble and sand
52.0			9.54		cobble and sand
58.0			8.56		
62.0			8.82		
68.0			9.28		
74.0			9.52		
82.0			10.58		
90.0			10.97		boulder/cobble/sand
100.0			11.21		boulder/cobble/sand
108.0			10.83		
114.5					left bridge wall
114.0			10.73		

Legend	**HI = ELEV + BS;**	**TP ELEV = HI - FS;**	**New HI = TP ELEV + BS**	
	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark

RB = Right Bank REW = Right Edge of Water CL = Center Line TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_2_ of _2__

Site Name: Larkin Mill Dam | **SITE ID #:** LMD | **XS ID #:** LMD-05

Date: June 10, 2008 | **Investigators:** Matt Collins, Lisa Wade

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
122.0			10.03		sandy/gravel
128.4			9.45		log
133.0			10.46		organics/mud
135.0			11.08		
137.4			11.19		
141.0			10.63		
149.9			9.45		
157.0			8.62		organic mat
163.0			8.27		organic mat and pond weed
169.0			8.27		organic mat and pond weed
175.0			8.49		organic mat and pond weed
181.0			9.04		organic mat and pond weed
186.0			8.33		organic mat and pond weed
190.7			7.29		REW
193.1			6.13		bank top
197.9			5.53		
204.0			4.68		
220.0			2.39		
224.6			1.90		base of pin
			1.28		top of pin
152.5					right bridge wall

Legend

HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS

LB = Left Bank; LEW = Left Edge of Water; BKF = Bankfull; BM = Benchmark

RB = Right Bank; REW = Right Edge of Water; CL = Center Line; TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _2__

Site Name: Larkin Mill Dam	**SITE ID #:** LMD-06
Town, State/Province: Newbury, MA	**Stream Name:** Parker River
Pre-restoration	**Date:** June 11, 2008
Form completed by: Lisa Wade	**Time (24hr):** 11:00
Investigators: Matt Collins, Lisa Wade	

CROSS SECTION ID #	**Left Monument (UTM)**	**N** 42° 45.121" **W** 70° 56.654"
	Right Monument (UTM)	**N** 42° 45.095" **W** 70° 56.667"

Location Description: Downstream edge of I-95 bridge. Just along base of enbamkmetn	**Benchmark Description:** TMB#1. See description on site information data sheet.
Left Monument Description: 35 ft upslope of LEW at base of enbankment. DS of concrete drainage slage	**Right Monument Description:** under conifers

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft.	ft.	ft.	ft.	ft.	
TBM# 1	5.69	8.93		3.24	+NGVD adjustment
LM(0)			1.84		top of pin
0.0			2.55		base of pin
4.0			3.08		
7.0			3.62		riprap adjacent to wing walls
11.3			4.29		riprap adjacent to wing walls
17.3			3.68		
20.9			4.99		
24.6			5.50		
31.0			6.54		bank top
33.2			7.57		LEW
34.4			8.11		boulder
37.8			10.61		mud
40.6			12.54		boulders with muck
46.0			14.81		muck
51.0			16.46		sandy
57.0			15.62		top of boulder
61.4			14.19		WS=12.68
68.0			14.46		

Legend **HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS**

	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_2_ of _2__

Site Name: Larkin Mill Dam | **SITE ID #:** LMD | **XS ID #:** LMD-06

Date: June 11. 2008 | **Investigators:** Matt Collins, Lisa Wade

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
73.5			13.77		muck
76.6			10.47		boulder
80.3			10.28		rock
82.5			10.03		2.49= WS. Better than previous
85.4			7.95		bouldery, muck, organics
89.0			8.33		organics and muck
92.5			7.59		REW
93.7			7.39		top of bank?
101.0			6.78		grass and woody debris
107.7			6.23		rip rap
109.7			5.05		rip rap
111.7			5.98		rip rap
120.0			5.69		rip rap
130.0			4.95		rip rap
140.0			4.50		rip rap
150.0			4.16		rip rap
155.9			3.99		base of pin
155.9			3.53		top of pin

Legend

HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS

LB = Left Bank; LEW = Left Edge of Water; BKF = Bankfull; BM = Benchmark

RB = Right Bank; REW = Right Edge of Water; CL = Center Line; TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _2_

Site Name: Larkin Mill Dam	**SITE ID #: LMD-06**
Town, State/Province: Newbury, MA	**Stream Name: Parker River**
Pre-restoration Post-restoration (circle one)	**Date: June 8th, 2010**
Form completed by: Patrick Nadeau	**Time (24hr): 15:00**
Investigators: P. Nadeau and M. Collins	

CROSS SECTION ID #	**Left Monument (UTM)**	**N See 2008 Data Sheets E**
	Right Monument (UTM)	**N E**

Location Description: Just downstream of I-95 bridges	**Benchmark Description: TBM #1**
Left Monument Description: See 2008 Data Sheets	**Right Monument Description: See 2008 Data Sheets**

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft.	ft.	ft.	ft.	ft.	
	4.38				To TBM #1
3.0			0.53		Top of pin
3.0			1.17		Base of pin
15.0			2.85		Rip Rap and upland vegetation
28.0			3.85		Rip Rap and upland vegetation
34.3			5.52		Top of bank (rip rap)
36.7			6.53		LEW
41.2			9.13		Rock, rip rap
48.0			12.97		Rock
55.0			15.13		Sand
62.0			13.99		Sand
69.0			12.97		Sand (some mud)
76.0			12.81		Sand (some mud)
83.0			9.30		Sand and mud in rip rap
94.4			6.56		REW
97.6			6.02		Edge of herbacious vegetation
103.4			5.46		Edge of shrubs
118.0			4.56		Grass

Legend **HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS**

	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_2_ of __2__

Site Name: Larkin Mill Dam	SITE ID #:	XS ID # LMD-06
Date: June 8th, 2010	Investigators: P. Nadeau and M. Collins	

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
132.0			3.74		Upland
158.8			2.68		Base of pin
158.8			2.20		Top of pin

Legend	HI = ELEV + BS;	TP ELEV = HI - FS;	New HI = TP ELEV + BS	
	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _2__

Site Name: Larkin Mill Dam	**SITE ID #:** LMD-07
Town, State/Province: Newbury, MA	**Stream Name:** Parker River
Pre-restoration	**Date:** June 11, 2008
Form completed by: Lisa Wade	**Time (24hr):** 14:30
Investigators: Matt Collins, Lisa Wade	

CROSS SECTION ID #	**Left Monument (UTM)**	**N** 42° 45.096' **W** 70° 56.623'
	Right Monument (UTM)	**N** 42° 45.081' **W** 70°56.659'

Location Description: expansion downstream of I-95 bridge. Just upstream of groundwater fed tributary.	**Benchmark Description:** TBM#1
Left Monument Description: Upstream of trib. Downstream base of large white pine	**Right Monument Description:** by fence. 25' upslope from REW.

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft.	ft.	ft.	ft.	ft.	
TMB#1	9.04	12.28		3.24	using TBM#1
LM(0)			4.03		top of pin
0.0			4.58		base of pin
6.0			5.48		pine needles/herbs
12.0			6.64		
18.0			7.59		
24.0			8.56		shrubs
30.0			9.43		
36.0			10.07		
44.4			10.98		LEW
45.2			11.36		
48.0			11.64		muck and emergent veg.
54.0			11.72		muck and emergent veg.
59.0			11.76		emergent veg. patch
66.0			12.12		muck/organics
72.0			12.67		soft mud and organics
78.0			12.83		soft mud and organics
82.0			13.16		soft mud and organics
88.0			14.67		soft mud and organics

Legend **HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS**

	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_2_ of _2__

Site Name: Larkin Mill Dam | **SITE ID #:** LMD | **XS ID #:** LMD-07

Date: June 11, 2008 | **Investigators:** Matt Collins, Lisa Wade

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
94.0			16.16		soft bottom
100.0			16.51		soft bottom
106.0			16.16		soft bottom
112.0			16.06		soft bottom
118.0			15.74		soft bottom
124.0			14.77		WS=3.85. soft bottom
130.0			14.15		WS=3.27. soft bottom
136.0			14.55		soft bottom
142.0			14.47		soft bottom
148.0			13.78		mud and emergent veg.
154.0			13.91		mud and emergent veg.
160.0			12.91		mud and emergent veg.
166.0			11.89		muck/organics
173.6			10.95		REW
177.6			10.35		bottom of bank scarp
178.2			9.60		top of bank
183.0			8.11		
187.0			7.44		
194.0			6.09		
199.8			4.64		base of pin
RM(199.8)			4.21		top of pin

Legend

HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS

LB = Left Bank; LEW = Left Edge of Water; BKF = Bankfull; BM = Benchmark

RB = Right Bank; REW = Right Edge of Water; CL = Center Line; TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _2_

Site Name: Larkin Mill Dam	**SITE ID #: LMD-07**
Town, State/Province: Newbury, MA	**Stream Name: Parker River**
Pre-restoration Post-restoration (circle one)	**Date: June 7th, 2010**
Form completed by: Patrick Nadeau	**Time (24hr): 14:00**
Investigators: P. Nadeau and M. Collins	

CROSS SECTION ID # LMD-07	**Left Monument (UTM)**	**N See 2008 Data Sheets E**
	Right Monument (UTM)	**N E**

Location Description: Expansion downstream of I-95 bridge, just upstream of groundwater fed tributary	**Benchmark Description: TBM #1 rebar monument**
Left Monument Description: See 2008 Data Sheets	**Right Monument Description: See 2008 Data Sheets**

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft.	ft.	ft.	ft.	ft.	
	5.22				To TBM #1
1.0			0.23		Top of pin
1.0			0.78		Base of pin
16.0			3.19		Edge of shrubs, on pine needles
31.0			5.65		In shrubs, pine needles and organic
37.0			6.22		Shrubs
41.0			6.67		Edge of shrubby vegetation, organi
47.2			7.50		LEW, Emergent veg., muck
53.0			7.82		Organics/muck, emergent veg.
59.0			7.99		Mud, organics, emergent veg.
67.2			8.41		Mud, organics, edge of emergent v
76.0			8.88		Mud and organics
83.0			9.39		Mud and organics, some sand
90.0			10.95		Mud and organics, some sand
97.0			12.51		Mud and organics, some sand
104.0			12.63		Mud and organics, some sand
111.0			12.13		Mud and organics, some sand
118.0			12.09		Mud and organics, some sand

Legend **HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS**

	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_2_ of _2_

Site Name: Larkin Mill Dam	SITE ID #:	XS ID # LMD-07
Date: June 7th, 2010	Investigators: P. Nadeau and M. Collins	

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
125.0			12.77		Mud, organics, some sand
132.0			10.25		Mud, organics, some sand
139.0			10.21		Mud, organics, some sand
146.0			10.19		Mud, organics, some sand
157.0			9.46		Mud, organics, some sand
164.0			8.25		Mud, organics, emergent veg.
172.7			7.39		REW, mud, organics
178.7			6.61		Base of bank, mud and organics
179.6			5.71		Top of bank, start of shrubs
187.0			3.76		Pine needles, organic duff
197.0			1.86		Pine needles, organic duff
201.0			0.88		Base of pin
201.0			0.42		Top of pin

Legend	HI = ELEV + BS;	TP ELEV = HI - FS;	New HI = TP ELEV + BS	
	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _2__

Site Name: Larkin Mill Dam	**SITE ID #:** LMD-08
Town, State/Province: Newbury, MA	**Stream Name:** Parker River
Pre-restoration	**Date:** June 13, 2008
Form completed by:	**Time (24hr):** 11:10
Investigators: Matt Collins, Lisa Wade	

CROSS SECTION ID #	**Left Monument (UTM)**	**N** 42° 45.033' **W** 70° 56.586'
	Right Monument (UTM)	**N** 42° 45.022' **W** 70° 56.618'

Location Description: Constriction	**Benchmark Description:** TBM# 1
Left Monument Description: Next to small rock US of large boulder	**Right Monument Description:** Base of large rock in open area.

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft.	ft.	ft.	ft.	ft.	
TBM#1	7.12	10.36		3.24	
LM(0)			4.89		top of pin
LM(0)			5.20		base of pin
3.5			5.88		upland leaf litter
4.5			6.19		upland leaf litter
11.0			7.17		upland leaf litter
15.1			7.81		tree root. bank top
17.0			8.49		wet leaves. Sponge
21.5			8.68		30 lb boulder
22.5			9.17		LEW
28.0			10.42		muck w/ organics
37.0			11.74		muck w/ organics
42.0			12.11		muck w/ organics
51.0			12.98		muck w/ organics
58.0			13.25		muck w/ organics
64.0			13.72		muck w/ organics
70.0			13.98		muck w/ organics
79.4			14.26		muck w/ organics
87.1			15.41		muck w/ organics

Legend **HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS**

	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_2_ of _2__

Site Name: Larkin Mill Dam	**SITE ID #:** LMD	**XS ID #:** LMD-08
Date: June 13, 2008	**Investigators:** Matt Collins, Lisa Wade	

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
93.0			16.56		muck, fines and organics
96.0			16.79		muck, fines and organics
101.0			16.30		muck, fines and organics
107.0			14.45		muck, fines and organics
113.0			11.93		muck, fines and organics
117.0			10.41		firmer substrate
119.0			9.69		fines and organics
121.6			9.12		REW
123.0			8.89		base of bank
126.2			6.83		top of bank
132.0			6.04		base of large maple
138.0			5.38		
143.0			4.76		
152.1			2.91		base of pin
RM			2.43		top of pin

Legend	**HI = ELEV + BS;**	**TP ELEV = HI - FS;**	**New HI = TP ELEV + BS**
	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _2_

Site Name: Larkin Mill Dam	**SITE ID #: LMD-08**
Town, State/Province: Newbury, MA	**Stream Name: Parker River**
Pre-restoration Post-restoration (circle one)	**Date: June 8th, 2010**
Form completed by: Patrick Nadeau	**Time (24hr): 10:00**
Investigators: P. Nadeau and M. Collins	

CROSS SECTION ID # LMD-08	**Left Monument (UTM)**	**N See 2008 Data Sheets E**
	Right Monument (UTM)	**N E**

Location Description: Constriction	**Benchmark Description: TBM #1**
Left Monument Description: See 2008 Data Sheets	**Right Monument Description: See 2008 Data Sheets**

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft.	ft.	ft.	ft.	ft.	
	8.39				To TBM #1
1.0			6.21		Top of pin
1.0			6.61		Base of pin, organic detritus
5.0			7.32		Organic detritus
11.0			8.37		Organic detritus
17.0			8.98		Root, edge of water stained leaves
24.4			10.62		LEW, mud/organics
33.0			12.36		Mud/organics
40.0			13.16		Mud/organics
47.2			14.90		Mud/organics
54.0			14.42		Mud/organics
61.0			14.75		Mud/organics
68.0			14.89		Mud/organics
75.0			15.51		Mud/organics
82.0			15.90		Mud/organics
89.0			17.12		Mud/organics
96.0			18.30		Mud/organics

Legend **HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS**

	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_2_ of _2_

Site Name: Larkin Mill Dam	SITE ID #:	XS ID # LMD-08
Date: June 8th, 2010	Investigators: P. Nadeau and M. Collins	

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
102.6			17.48		Mud/organics
110			15.31		Mud/organics
117			12.14		Mud/organics
122.3			10.56		REW, mud/organics
124.5			10.24		Base of bank, mud/organics
127.6			8.18		Top of bank, organic detritus, beg
133.8			7.19		Base of tree, shrubs, organic detr
145.4			5.91		Organic detritus
153.4			4.21		Base of pin, organic detritus
153.4			3.70		Top of pin

Legend	HI = ELEV + BS;	TP ELEV = HI - FS;	New HI = TP ELEV + BS	
	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _2__

Site Name: Larkin Mill Dam	**SITE ID #:** LMD-09
Town, State/Province: Newbury, MA	**Stream Name:** Parker River
Pre-restoration	**Date:** June 13, 2008
Form completed by: Eric Hutchins	**Time (24hr):** 13:45
Investigators: Matt Collins, Lisa Wade, Eric Hutchins	

CROSS SECTION ID #	**Left Monument (UTM) °**	**N** **E**
	Right Monument (UTM)	**N** **E**

Location Description: expansion	**Benchmark Description:** TBM#1
Left Monument Description: In dead tree stub. 7 meters from pin to old stone wall.	**Right Monument Description**

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
Meters	ft.	ft.	ft.	ft.	
	10.86	14.1		3.24	
ALL STATIONS ARE IN METERS					
LM (0)			9.55		top of pin
LM (0)			10.16		bottom of pin
1.30			10.88		edge of seasonall wet area
2.50			10.97		midddle of wet area
4.00			11.08		edge of wet area
6.15			10.86		base of wall
6.60			9.82		top of stone wall
8.30			10.97		ground. River side of wall
9.90			10.65		on top of boulder
10.90			11.49		low between boulders
11.70			9.20		top of boulder
12.90			10.94		base of pine tree
13.60			11.84		base of flat rock (River side)
16.10			12.57		seasonally wet leaves
19.60			12.93		LEW
22.50			13.80		organic muck
24.60			14.30		organic muck
27.25			12.61		boulder out of water

Legend **HI = ELEV + BS;** **TP ELEV = HI - FS;** **New HI = TP ELEV + BS**

LB = Left Bank LEW = Left Edge of Water BKF = Bankfull BM = Benchmark

RB = Right Bank REW = Right Edge of Water CL = Center Line TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_2_ of _2__

Site Name: Larkin Mill Dam | **SITE ID #:** LMD | **XS ID #:** LMD-09

Date: June 13, 2008 | **Investigators:** Matt Collins, Lisa Wade, Eric Hutchins

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
Meters	ft	ft	ft	ft	
27.4			13.66		on rock
28.4			11.96		rock out of water. Just off x-section
30.3			14.34		soft organic bottom
32.3			14.34		soft organic bottom
34.3			14.72		muck and organics
36.3			15.16		muck and organics
38.3			15.45		muck and organics
40.3			15.57		muck and organics
42.3			15.68		WS=2.87ft
44.3			15.67		muck and organics
46.3			16.01		muck and organics
48.3			17.35		muck and organics
50.3			19.43		muck and organics
52.3			19.88		muck and organics
54.3			21.59		muck and organics
56.3			21.85		muck and organics
58.3			20.66		muck and organics
60.3			19.44		muck and organics
62.3			16.92		muck and organics
64.3			15.06		muck and organics
67.4			12.92		REW (clay)
67.65			12.68		bottom of bank
68.05			10.71		top of bank
68.4			10.25		bench
70.45			8.32		adjacent to tree
71.75			6.89		base of pin
RM			6.51		top of pin

Legend

HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS

LB = Left Bank; LEW = Left Edge of Water; BKF = Bankfull; BM = Benchmark

RB = Right Bank; REW = Right Edge of Water; CL = Center Line; TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _2_

Site Name: Larkin Mill Dam	**SITE ID #: LMD-09**
Town, State/Province: Newbury, MA	**Stream Name: Parker River**
Pre-restoration Post-restoration (circle one)	**Date: June 9th, 2010**
Form completed by: Patrick Nadeau	**Time (24hr): 14:00**
Investigators: P. Nadeau and M. Collins	

CROSS SECTION ID # LMD-09	**Left Monument (UTM)**	**N See 2008 Data Sheets E**
	Right Monument (UTM)	**N E**

Location Description: See 2008 Data Sheets	**Benchmark Description: TBM #2**
Left Monument Description: See 2008 Data Sheets	**Right Monument Description: See 2008 Data Sheets**

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft.	ft.	ft.	ft.	ft.	
	6.72				To TBM #2
3.0			4.83		Top of pin
74.0			8.32		LEW
80.0			9.16		Mud and organics
89.0			8.97		Mud and organics over rock
96.0			9.38		Mud and organics
103.0			9.74		Mud and organics over rock
110.0			9.83		Rock
117.0			9.79		Mud and organics
124.0			10.65		Rock
131.0			10.87		Mud and organics
138.0			11.10		Mud and organics
145.0			10.95		Mud and organics
152.0			11.05		Mud and organics
159.0			11.93		Mud and organics
166.5			14.09		Mud and organics
173.0			14.45		Mud and organics
180.0			15.95		Mud and organics
187.0			17.05		Mud and organics

Legend **HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS**

	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_2_ of _2_

Site Name: Larkin Mill Dam	SITE ID #:	XS ID # LMD-09
Date: June 9th, 2010	Investigators: P. Nadeau and M. Collins	

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
194.0			16.03		Mud and organics
203.0-2.0			14.64		Mud and organics
210.0-2.0			12.25		On wood
214.0-2.0			11.03		Mud, organics, woody debris
219.0-2.0			9.61		Mud, organics, woody debris
225.4-2.0			8.27		REW (mud, organics, debris)
226.5-2.0			7.92		Base of bank (mud, organics, deb
227.8-2.0			5.91		Top of bank (moss, duff, shrubs)
235.1-2.0			4.14		Base of root
	Couldn't sight on right bank pin.				

Legend	HI = ELEV + BS;	TP ELEV = HI - FS;	New HI = TP ELEV + BS	
	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _2__

Site Name: Larkin Mill Dam	**SITE ID #:** LMD-10
Town, State/Province: Newbury, MA	**Stream Name:** Parker River
Pre-restoration	**Date:** June 16, 2008
Form completed by:	**Time (24hr):**
Investigators: Matt Collins, Lisa Wade	

CROSS SECTION ID #	**Left Monument (UTM) °**	**N** **E**
	Right Monument (UTM)	**N** **E**

Location Description: Bend upstream of dam	**Benchmark Description:** TBM#2. See site description sheet for details.
Left Monument Description: Stream side bsae of very large white pine. (18 ft from bank)	**Right Monument Description**

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft.	ft.	ft.	ft.	ft.	
	3.71				TBM#2
ALL STATIONS ARE OFFSET BY -1.0FT					
LM(0)			1.73		top of pin
0.0			2.14		base of pin
6.0			3.68		upland (pin needles)
8.4			4.26		upland (pin needles)
12.4			4.65		upland (pin needles)
14.2			4.46		upland (pin needles)
17.2			4.56		rock (boulder)
18.1			5.23		LEW
20.5			5.19		out of water boulder
21.8			6.08		base of boulder
27.0			6.48		muck and organics, adjacent to large woody debris
33.0			7.08		tree stump
39.0			7.52		
45.4			7.48		on top of wood
51.0			7.96		WS=2.71. muck
57.0			8.42		muck
63.0			8.71		muck
69.0			8.84		muck

Legend **HI = ELEV + BS;** **TP ELEV = HI - FS;** **New HI = TP ELEV + BS**

	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_2_ of _2__

Site Name: Larkin Mill Dam | **SITE ID #:** LMD | **XS ID #:** LMD-10

Date: June 16, 2008 | **Investigators:** Matt Collins, Lisa Wade

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
75.0			8.87		muck
81.0			9.43		muck
86.0			9.84		muck
92.0			10.78		muck
98.0			11.93		muck
104.0			11.92		muck
110.0			12.19		muck
116.0			11.81		muck
122.0			10.92		muck
128.0			9.91		muck
134.0			8.84		muck and twigs
140.0			7.24		stump, large woody debris
144.0			6.44		organics. Firmer substrate
149.2			5.21		REW
150.4			4.74		base of moss
153.0			2.51		top of bank
156.1			1.91		
161.0			1.04		base of pin
RM			0.60		top of pin

Legend

HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS

LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _2_

Site Name: Larkin Mill Dam	**SITE ID #: LMD-10**
Town, State/Province: Newbury, MA	**Stream Name: Parker River**
Pre-restoration Post-restoration (circle one)	**Date: June 9th, 2010**
Form completed by: Patrick Nadeau	**Time (24hr): 11:30**
Investigators: P. Nadeau and M. Collins	

CROSS SECTION ID #	**Left Monument (UTM)**	**N**	**E**
	Right Monument (UTM)	**N**	**E**

Location Description	**Benchmark Description**
Left Monument Description	**Right Monument Description**

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft.	ft.	ft.	ft.	ft.	
	8.90				To TBM #2
	3.63				To LMD-08 RB Top of pin
3.0			6.76		Top of pin
3.0			7.10		Base of pin, pine needles and detrit
8.0			8.69		Pine needles and duff
9.5			9.20		Edge of waterstained leaves
16.5			9.54		Herbacious vegetation
19.6			9.68		Boulder, semblance of bank top
23.0			10.45		Boulder, LEW
29.0			11.57		Mud and organics
36.0			12.42		Mud and organics
43.0			12.64		Mud and organics
50.0			12.91		Mud and organics
57.0			13.40		Mud and organics
64.0			13.98		Mud and organics
71.0			14.06		Mud and organics
78.0			14.39		Mud and organics
85.0			14.53		Mud and organics

Legend **HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS**

	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_2_ of _2_

Site Name: Larkin Mill Dam	SITE ID #:	XS ID # LMD-10
Date: June 9th, 2010	Investigators: P. Nadeau and M. Collins	

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
92.0			16.83		Mud and organics
99.0			17.13		Mud and organics
106.0			17.40		Mud and organics
113.0			17.45		Mud and organics
120.0			16.96		Mud and organics
127.0			15.52		Mud and organics
134.0			14.62		Mud and organics
141.6			13.16		Mud and organics
150.1			10.53		REW organics
152.2			10.23		Base of bank, mud and organics
154.8			7.72		Top of bank, leaf line
163.1			6.06		Base of pin, organic duff
163.1			5.66		Top of pin

Legend	HI = ELEV + BS;	TP ELEV = HI - FS;	New HI = TP ELEV + BS	
	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _4__

Site Name: Larkin Mill Dam	**SITE ID #:** LMD-11
Town, State/Province: Newbury, MA	**Stream Name:** Parker River
Pre-restoration	**Date:** June 16, 2008
Form completed by: Lisa Wade	**Time (24hr):** 14:30
Investigators: Matt Collins, Lisa Wade, Beth Lambert	

CROSS SECTION ID #	**Left Monument (UTM) °**	**N** **E**
	Right Monument (UTM)	**N** **E**

Location Description: Directly upstram of the dam.	**Benchmark Description:** TME#2. see site description sheet.
Left Monument Description	**Right Monument Description:** RB1 creates dog leg. Is at top of rise. RB2 is on RB of raceway, by wooden fence.

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft.	ft.	ft.	ft.	ft.	
ALL STATIONS ARE OFFSET BY -1.0FT					
LM(0)			1.14		top of pin
0.0			1.62		base of pin
3.8			2.01		
6.0			2.85		
9.9			3.37		
11.6			3.03		large log DS of x-section
17.6			3.75		
21.9			3.61		base of tree
23.2			3.99		bank top and on a root
23.6			5.17		base of bank
24.5			5.31		LEW
30.0			6.29		muck over firm substrate of sand and gravel
36.0			6.57		
39.0			6.26		
40.7			6.00		
43.0			6.35		
48.0			6.56		

Legend				
	HI = ELEV + BS;	**TP ELEV = HI - FS;**	**New HI = TP ELEV + BS**	
	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_2_ of _4__

Site Name: Larkin Mill Dam	**SITE ID #:** LMD	**XS ID #:** LMD-11
Date: June 16, 2008	**Investigators:** Matt Collins, Lisa Wade, Beth Lambert	

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
54.0			6.85		
62.0			7.12		
68.0			7.23		
74.0			7.37		
80.0			7.41		
86.0			7.71		
91.0			7.98		gravel and sand substrate
95.0			8.16		
101.0			8.12		
107.0			7.91		
112.0			7.65		
117.0			7.45		
123.0			7.34		
129.0			7.02		
135.0			6.55		
141.0			6.24		
147.0			5.90		
153.0			6.12		muck overlaying course sediment
159.0			6.44		
165.0			6.59		
171.0			6.64		
177.0			6.74		
183.0			6.21		
189.0			7.10		
195.0			6.89		
201.0			7.57		
207.0			7.14		
213.0			7.32		

Legend	**HI = ELEV + BS;**	**TP ELEV = HI - FS;**	**New HI = TP ELEV + BS**
	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_3_ of _4__

Site Name: Larkin Mill Dam | **SITE ID #:** LMD | **XS ID #:** LMD-11

Date: June 16, 2008 | **Investigators:** Matt Collins, Lisa Wade, Beth Lambert

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft and m	ft	ft	ft	ft	
219.0			7.10		
226.0			6.88		emergent veg.
229.0			6.37		
232.0			6.47		
238.0			6.61		
244.0			6.53		on rock
250.0			5.84		
253.0			5.57		base of boulder
253.5			5.15		REW
255.7			3.55		top of bouler
257.7			4.13		boulder
258.7			4.94		mud
259.8			4.20		boulder
SWITCHING OVER TO SECOND TAPE. STATIONS ARE NOW IN METERS					Tape ends at 260ft.
STATIONS ARE OFFSET BY -1.00 METERS					
1.6			4.70		muck and leaf litter
3.0			4.95		muck and leaf litter
4.5			4.85		muck and leaf litter
6.0			4.89		muck and leaf litter
7.5			5.15		muck and leaf litter
9.0			5.39		muck and leaf litter
10.5			5.34		muck and leaf litter
12.0			5.18		muck and leaf litter
13.5			4.51		muck and leaf litter
15.0			4.09		dryer land
16.5			3.60		upland veg.
17.8			2.05		base of boulder
18.3	5.24		1.13		top of bouler/ Turning point #1

Legend | **HI = ELEV + BS;** | **TP ELEV = HI - FS;** | **New HI = TP ELEV + BS**

LB = Left Bank | LEW = Left Edge of Water | BKF = Bankfull | BM = Benchmark

RB = Right Bank | REW = Right Edge of Water | CL = Center Line | TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_4_ of _4__

Site Name: Larkin Mill Dam	**SITE ID #:** LMD	**XS ID #:** LMD-11
Date: June 16, 2008	**Investigators:** Matt Collins, Lisa Wade, Beth Lambert	

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
INSTRUMENT SETUP #1 AT 149 FEET					
INSTRUMENT SETUP #2 AT 22 METERS					
19.8			6.08		
22.0			5.82		
23.5			4.62		
25.0			4.05		
RB1(25.9)			3.75		at base of pin marking dog-leg in x-section
26.8			3.81		
28.0			4.72		
29.4			5.49		top of bank
31.1			8.06		root
31.2			9.04		LEW for raceway
31.2			10.83		muck
37.3			9.08		REW; muck
37.8			7.84		1/2 way up bank
38.2			6.00		top of bank
39.2			5.11		
41.0			4.60		base of pin
41.0			4.28		top of pin

Legend	**HI = ELEV + BS;**	**TP ELEV = HI - FS;**	**New HI = TP ELEV + BS**
	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _3_

Site Name: Larkin Mill Dam	**SITE ID #: LMD-11**
Town, State/Province: Newbury, MA	**Stream Name: Parker River**
Pre-restoration Post-restoration (circle one)	**Date: June 16th, 2010**
Form completed by: Patrick Nadeau	**Time (24hr): 14:00**
Investigators: P. Nadeau and M. Collins	

CROSS SECTION ID #: LMD-11	**Left Monument (UTM)**	**N**	**E**
	Right Monument (UTM)	**N**	**E**

Location Description: Directly Upstream of Dam	**Benchmark Description: TBM #2**
Left Monument Description	**Right Monument Description**

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft.	ft.	ft.	ft.	ft.	
	5.15	31.24		26.09	To TBM #2 (elevation 26.09)
0.0			2.44		Top of pin
0.0			2.87		Base of pin
5.7			4.48		Organic Duff
9.0			4.70		Organic Duff
13.5			4.82		Roots, organics, near edge of leaf l
20.3			5.05		Root (next to tree)
24.4			6.75		LEW
31.0			6.75		Water surface on muck just breakir
38.0			7.71		Clay, some pebbles and cobbles
44.7			7.87		Same with some organics, next to l
51.0			8.12		Mud, with gravel and sand (?) at de
57.7			8.09		Mud and organics, firm at depth
64.0			7.89		Mud and organics, firm at depth
78.0			8.71		Mud and organics, firm at depth
84.9			9.11		Firm sand and gravel, some mud
92.0			9.31		Firm sand and gravel, some mud
99.0			9.37		Sand and gravel, some cobbles

Legend **HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS**

	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form # 2 of 3

Site Name: Larkin Mill Dam	SITE ID #:	XS ID # LMD-11
Date: June 16th, 2010	Investigators: P. Nadeau and M. Collins	

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
106.0			9.12		Sand and gravel, some cobbles
113.0			8.83		Sand and gravel, some cobbles
120.0			8.66		Same with submerged aquatic ve
127.0			8.35		Same with submerged aquatic ve
134.0			7.81		Sand, gravel, some cobble with m
141.0			7.47		Same with more mud and subme
148.0			7.16		Mud and organics, emergent veg,
155.0			7.60		Mud and organics, edge of emerg
162.0			7.30		Mud and organics, edge of emerg
169.0			7.63		Mud and organics, edge of emerg
176.0			7.51		Mud and organics, edge of emerg
182.6			7.39		Mud and organics, edge of emerg
190.0			7.83		Mud and organics
198.0			8.00		Mud and organics
205.0			7.98		Mud and organics
212.0			8.35		Mud and organics
219.0			7.90		Mud and organics
226.0			7.61		Mud, organics, wood at depth, ed
233.0			7.76		Mud and organics
240.0			7.94		Mud and organics on firm base
244.0			7.19		Boulder, base of log
245.3			6.16		On top of log
247.0			7.27		Mud and organics surrounded by
252.5			6.75		REW, on side of boulder
255.0			4.91		Top of boulder
262.0			5.95		Water stained leaves, edge of mo
268.9			6.10		Edge of water stained leaves and
276.0			6.19		Water stained leaves

Legend	HI = ELEV + BS;	TP ELEV = HI - FS;	New HI = TP ELEV + BS	
	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_3_ of _3_

Site Name: Larkin Mill Dam	SITE ID #:	XS ID # LMD-11
Date: June 16th, 2010	Investigators: P. Nadeau and M. Collins	

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
283.0			6.51		Water stained leaves
288.5			6.21		Boulder
295.0			6.56		Water stained leaves
300+15.5-10			5.31		Edge of water stained leaves
300+21.0-10			4.61		Base of small slope
300+26.0-10			2.41		Top of small slope and boulder
300+33.1-10			3.43		Leaves and organic duff
300+43.9-10			1.62		Leaves and organic duff
300+51.1-10			0.95		Base of pin 11 A
300+51.1-10			0.55		Top of pin 11 A

Legend	HI = ELEV + BS;	TP ELEV = HI - FS;	New HI = TP ELEV + BS
	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _3__

Site Name: Larkin Mill Dam	**SITE ID #:** LMD-12
Town, State/Province: Newbury, MA	**Stream Name:** Parker River
Pre-restoration	**Date:** June 18, 2008
Form completed by: Lisa Wade	**Time (24hr):** 10:30
Investigators: Matt Collins, Lisa Wade, Beth Lambert	

CROSS SECTION ID #	**Left Monument (UTM)**	**N** 42° 45.007'	**W** 70° 56.539'
	Right Monument 1 (UTM)	**N** 42° 44.959'	**W** 70° 56.514'
	Right Monument 2 (UTM)	**N** 42° 44.950'	**W** 70° 56.513'

Location Description: Crest of dam	**Benchmark Description:** TBM#2: see site description sh
Left Monument Description	**Right Monument Description:**

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft.	ft.	ft.	ft.	ft.	
TAPES MARRY ON LARGE OAK TREE WITH NO FISHING SIGN					
ALL STATIONS ON TAPE #1 ARE OFF SET BY -1.0 FT					
TAPE #1 ENDS AT 285.0 FT.					
TAPE #2 STARTS AT 0.0 METERS					
TAPE #2 MAKES A DOG-LEG AT 18.30 METERS					
	5.38				
LM(0)			3.20		top of pin
0.0			3.63		base of pin
8.2			4.31		top of bank
12.9			5.76		edge of water stained leaves. Base of bank
13.9			5.95		carried over weir crest height
46.0			5.95		dam crest
56.0			5.95		dam crest
66.0			6.00		dam crest
76.0			6.04		dam crest
84.8			6.03		edge of spillway
84.8			7.30		base of spillway
90.0			7.34		large amount of debris present

Legend	HI = ELEV + BS;	TP ELEV = HI - FS;	New HI = TP ELEV + BS	
	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_2_ of __3_

Site Name: Larkin Mill Dam | **SITE ID #:** LMD | **XS ID #:** LMD-12

Date: June 18, 2008 | **Investigators:** Matt Collins, Lisa Wade, Beth Lambert

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
97.0			7.34		debris between the readings
105.0			7.35		adjacent to large log
110.0			7.35		more debris
115.0			7.34		main spillway channel
120.0			7.34		WS=0.35ft (best estimate)
122.45			7.36		base fo spillway
122.5			5.38		edge of spillway
130.0			5.32		crest of dam
140.0			5.36		crest of dam
150.0			5.40		crest of dam
160.0			5.49		crest of dam
170.0			5.40		crest of dam
180.0			5.38		crest of dam
200.0			5.38		crest of dam
220.0			5.36		crest of dam
239.0			5.36		edge of exposed concret dam
243.0			4.96		on root and debris
246.3			5.30		base of fish ladder wall
247.0			5.12		top of fish ladder wall LB edge
249.3			5.07		top of fish ladder wall RB edge
251.0			5.11		edge of concrete fish ladder
255.5			4.67		ground surface. Upland veg
260.4			3.97		edge of log
261.3			2.72		top of log
262.0			3.71		far edge of log
266.0			3.62		poison ivy
274.0			4.09		shrubs
279.0			4.46		

Legend | **HI = ELEV + BS;** | **TP ELEV = HI - FS;** | **New HI = TP ELEV + BS**

LB = Left Bank | LEW = Left Edge of Water | BKF = Bankfull | BM = Benchmark

RB = Right Bank | REW = Right Edge of Water | CL = Center Line | TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #_3_ of __3_

Site Name: Larkin Mill Dam	**SITE ID #:** LMD	**XS ID #:** LMD-12
Date: June 18, 2008	**Investigators:** Matt Collins, Lisa Wade, Beth Lambert	

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft and m	ft	ft	ft	ft	
282.0			3.89		base of oak tree
START TAPE #2. ALL STATIONS NOW IN METERS					
1.85			3.22		New tape
2.60			3.90		
4.00			3.63		
6.50			2.40		
10.30			2.87		
14.00			1.53		
16.15			1.88		on rock
18.30	4.76		1.72		base of RB1 Monument; location of dog-leg. Turning point for new instrument position w/ new HI
22.20			4.82		
25.60			5.60		
27.50			5.50		base of wall on ground surface
27.66			5.08		inside edge of wall
27.66			12.79		base of wall, soft substrate
31.37			12.88		bsae fo wall inside edge
31.37			4.93		top of wall
31.40			6.87		base of wall on ground surface
32.60			5.90		poison ivy
33.32			5.66		base of pin
33.32			4.75		top of pin

Legend	**HI = ELEV + BS;**	**TP ELEV = HI - FS;**	**New HI = TP ELEV + BS**
	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark

RB = Right Bank REW = Right Edge of Water CL = Center Line TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _3__

Site Name: Larkin Mill Dam	**SITE ID #:** LMD-13
Town, State/Province: Newbury, MA	**Stream Name:** Parker River
Pre-restoration	**Date:** June 18, 2008
Form completed by: Beth Lambert	**Time (24hr):** 13:15-14:47
Investigators: Matt Collins, Lisa Wade, Beth Lambert	

CROSS SECTION ID #	**Left Monument (UTM)**	**N** **E**
	Right Monument (UTM)	**N** 42° 44.972' **W** 70° 56.523'

Location Description: at small weir (dam), just US of fish ladder	**Benchmark Description:** TBM#2 see site description sheet
Left Monument Description	**Right Monument Description**

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft.	ft.	ft.	ft.	ft.	
	1.34				
STARTED FROM THE RIGHT BANK AND WORKED TO THE LEFT					
All STATIONS ARE OFFSET BY -1.0 FT					
231.0			0.58		
227.7			1.07		
225.1			1.88		outer edge top of fish ladder wall
223.8			1.88		inner edge top of fish ladder wall
223.8			4.83		bottom of fish ladder
219.6			4.76		bottom of fish ladder, soft sediment
219.3			1.95		inner edge, top of wall of fish ladder
216.6			2.23		groundsurface next to fish ladder
204.0			3.18		groundsurface next to fish ladder
194.0			3.60		groundsurface next to fish ladder
184.0			4.03		groundsurface next to fish ladder
174.0			4.45		groundsurface next to fish ladder
164.0			4.97		groundsurface next to fish ladder
154.0			5.24		groundsurface next to fish ladder
144.0			5.87		groundsurface next to fish ladder
134.0			6.38		groundsurface next to fish ladder
124.0			6.81		groundsurface next to fish ladder

114.0			7.27		groundsurface next to fish ladder
Legend	**HI = ELEV + BS;**		**TP ELEV = HI - FS;**		**New HI = TP ELEV + BS**
	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull		BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line		TP = Turning Point

Cross-Section Survey Data Sheet (2)

Site Name: Larkin Mill Dam | **SITE ID #:** LMD | **XS ID #:** LMD-1

Date: June 18, 2008 | **Investigators:** Matt Collins, Lisa Wade, Beth Lambert

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	
ft	ft	ft	ft	ft	
104.0			7.74		groundsurface r
99.0			8.08		leaf littre
95.5			8.29		mud
95.0			8.05		boulder
94.3			8.09		edge of fish lad
94.0			8.66		REW; top of sp
92.0			8.72		top of spillway
91.0			8.74		top of spillway
88.0			8.86		top of spillway
86.0			8.93		top of spillway
84.0			8.94		top of spillway
82.0			8.95		top of spillway
81.0			8.96		top of spillway
78.7			8.89		LEW; base of b
78.4			7.57		on boulder
77.3			5.74		on large wood a
75.5			7.79		on boulder
73.5			7.48		moss
70.6			7.54		root edge
69.7			8.07		root/crest of dar
67.3			8.14		debris/crest of d
64.0			7.86		root/crest of dar
60.5			7.48		base of tree
56.0			6.17		concrete
51.5			5.86		upland
47.6			6.16		upland
42.0			5.83		upland

Legend | **HI = ELEV + BS;** | **TP ELEV = HI - FS;** | **New HI = TP EL**

LB = Left Bank | LEW = Left Edge of Water | BKF = Bankfull | BM =

RB = Right Bank | REW = Right Edge of Water | CL = Center Line | TP =

Form #_2_ of _3__

13

t

Notes
next to fish ladder
der dam
illway
oulder
and boulder
m
dam/brick
m

EV + BS
= Benchmark
= Turning Point

Cross-Section Survey Data Sheet (2)

Form #_3_ of _3__

Site Name: Larkin Mill Dam | **SITE ID #:** LMD | **XS ID #:** LMD-13

Date: June 18, 2008 | **Investigators:** Matt Collins, Lisa Wade, Beth Lambert

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
40.4			5.04		upland, top of RB of flood chute
37.9			6.24		end of boulder
35.1			6.53		base of tree
31.6			8.22		
29.0			8.24		next to boulder
27.5			8.86		base of boulder
26.5	9.51		8.19		on boulder. Turning Point
22.3			10.46		channel bottom, thalwag of flood chute
20.2			10.07		cobbles, sand
18.3			10.23		water stained leaves
16.2			9.99		edge of log, wet leaves
13.0			9.42		base of left slope of flood chute
9.1			7.20		moss
5.6			5.50		
0.0			3.50		base of pin, LB
0.0			3.82		top of pin, LB

Legend | **HI = ELEV + BS;** | **TP ELEV = HI - FS;** | **New HI = TP ELEV + BS**

LB = Left Bank | LEW = Left Edge of Water | BKF = Bankfull | BM = Benchmark

RB = Right Bank | REW = Right Edge of Water | CL = Center Line | TP = Turning Point

Stream Barrier Removal Monitoring
Site Information

Stream Name:	**Site Name:**	**SITE ID#:**
Date of Removal:	**Watershed Area (mi^2):**	**Stream Order:**
Town:	**State:**	**Province:**

Latitude (__°__'__'')	**Longitude (__°__'__'')**
Benchmark Location:	**Project Datum:**

Circle One

Barrier Type	Dam	Culvert	Other	
Reason For Removal	Fish Passage	Habitat Improvement	Public Safety	Economics
Fish Passage Barrier?	Yes	No		
Impoundment?	Yes	No		
Adjacent Landuse	Urban (%)	Agricultural (%)	Residential (%)	Natural (%)

Assessors Name:	**Affiliation:**
Phone Number:	**Email:**

Cross-Section Survey Data Sheet

Form #_1_ of _2__

Site Name: Larkin Mill Dam	**SITE ID #:** LMD-14
Town, State/Province: Newbury, MA	**Stream Name:** Parker River
Pre-restoration	**Date:** June 18, 2008
Form completed by: Beth Lambert	**Time (24hr):** 15:34-16:02
Investigators: Matt Collins, Lisa Wade, Beth Lambert	

CROSS SECTION ID #	**Left Monument (UTM)**	**N** 42° 44.996' **W** 70° 56.510'
	Right Monument (UTM)	**N** 42° 44.990' **W** 70° 56.515'

Location Description: Downstream of dam in free flowing reach above riffle	**Benchmark Description:** TBM#2
Left Monument Description: Behind large woody debris.	**Right Monument Description:** top of bank

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
meter	ft.	ft.	ft.	ft.	
STATIONS ARE IN METERS					
	1.26				
LM(0)			5.84		base of pin
3.5			7.91		mossy surface, top of LB
4.3			8.19		boulder
4.5			9.04		mossy boulder
4.7			6.41		top of woody debris
4.85			9.15		boulder
5.35			10.25		boulder
5.9			10.40		boulder
6.2			12.08		channel bed, boulder, cobble
6.2					depth of water=0.94. LEW
6.9			12.36		cobble and boulder
7.1			12.54		cobble and boulder
7.8			12.14		cobble and boulder. Depth of water 0.98.
8.45			11.77		boulder
8.7			12.37		cobble/boulder
9.05			12.08		cobble/boulder
9.3			12.33		cobble/boulder
9.7			12.21		gravel, sand

Legend **HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS**

	LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
	RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point

Cross-Section Survey Data Sheet (2)

Form #___ of ____

Site Name: Larkin Mill Dam | **SITE ID #:** LMD | **XS ID #:** LMD-

Date: June 2008 | **Investigators:** Matt Collins, Lisa Wade

Station (STA)	Backsight (BS)	Height of Instrument (HI)	Foresight (FS)	Elevation (ELEV)	Notes
ft	ft	ft	ft	ft	
10.1			11.79		gravelly sand
10.2			11.75		Water depth RB 0.58
10.4			10.71		boulder
11.0			9.18		top of boulder
11.3			10.49		gravelly sand
11.55			9.22		boulder
12.3			10.40		boulder
12.6			9.10		boulder
13.5			9.83		base of RB
14.0			8.57		
14.6			7.58		top of RB
16.0			7.14		base of pin
16.0			6.68		top of pin

Legend

HI = ELEV + BS; TP ELEV = HI - FS; New HI = TP ELEV + BS

LB = Left Bank	LEW = Left Edge of Water	BKF = Bankfull	BM = Benchmark
RB = Right Bank	REW = Right Edge of Water	CL = Center Line	TP = Turning Point