

From: Kindopp, Jason@DWR
To: Unger, Sophie
Cc: Geach, Christopher@DWR
Subject: FW: Feather River Modeling Follow-up
Date: Tuesday, March 8, 2022 3:18:45 PM
Attachments: [image001.png](#)
[image002.png](#)
[2003 RBTS Redd Survey Data.xls](#)
[2005 RBTS Redd Survey.xls](#)
[2008 rbts.xls](#)
[2008-2009 SH Redd Data.xlsx](#)
[SH Redd data 2010.xls](#)
[2011 SH Redd Data.xlsx](#)
[2012 SH Redd Survey Data.xlsx](#)
[2013 SH Redd data \(2\).xlsx](#)
[2014 steelhead redd survey data entry.xlsx](#)
[2015 SH data.xlsx](#)
[2017 SH data.xlsx](#)
[2018 SH Redd data final.xlsx](#)
[2019 SH REDD DATA.xlsx](#)
[2020 Steelhead Redd Survey Data.xlsx](#)

Sophie,

Here's that steelhead redd data. I haven't looked it over in a long time so hopefully it has just what you need. If you have any questions let me know and we'll sort it out.

Jason

From: Justin Call <JCall@psmfc.org>
Sent: Tuesday, March 8, 2022 8:08 AM
To: Kindopp, Jason@DWR <Jason.Kindopp@water.ca.gov>
Subject: Re: Feather River Modeling Follow-up

Hi Jason,

Here is everything in our records for the steelhead redd survey. It's been collected in several different formats it appears and was less comprehensive early on. In 2008 we don't have physical data for the data it appears and in 2016 the survey was not performed due to poor water clarity. As we've spoken before, many years the data we have is what we were able to collect given the challenges of river conditions during the winter. Let me know if you have any questions! I'm headed out into the field but can revisit this in the afternoon.

Justin

From: Kindopp, Jason@DWR <Jason.Kindopp@water.ca.gov>
Sent: Monday, March 7, 2022 3:03 PM
To: Justin Call

Subject: FW: Feather River Modeling Follow-up

[Caution]: This email originated from outside of PSMFC. Do not follow guidance, click links, or open attachments unless you recognize the sender and know the content is safe.

Justin, when you can will you send me the complete list of all steelhead redd physical data.

Thanks,

J

From: Unger, Sophie <Sophie.Unger@icf.com>
Sent: Monday, March 7, 2022 12:57 PM
To: Kindopp, Jason@DWR <Jason.Kindopp@water.ca.gov>; Geach, Christopher@DWR <Christopher.Geach@water.ca.gov>
Cc: Jones, Gardner@DWR <Gardner.Jones@water.ca.gov>; Greenwood, Marin <Marin.Greenwood@icf.com>
Subject: RE: Feather River Modeling Follow-up

Sorry to bug you again, Jason, but if you have data on the depth distribution on steelhead redds, could you include that as well?

Thank you,

Sophie

From: Kindopp, Jason@DWR <Jason.Kindopp@water.ca.gov>
Sent: Monday, March 7, 2022 11:30 AM
To: Unger, Sophie <Sophie.Unger@icf.com>; Geach, Christopher@DWR <Christopher.Geach@water.ca.gov>
Cc: Jones, Gardner@DWR <gardner.jones@water.ca.gov>; Greenwood, Marin <Marin.Greenwood@icf.com>
Subject: RE: Feather River Modeling Follow-up

How soon do you need the data? It might be later this week. Is that ok?

From: Unger, Sophie <Sophie.Unger@icf.com>
Sent: Monday, March 7, 2022 11:29 AM
To: Kindopp, Jason@DWR <Jason.Kindopp@water.ca.gov>; Geach, Christopher@DWR <Christopher.Geach@water.ca.gov>
Cc: Jones, Gardner@DWR <Gardner.Jones@water.ca.gov>; Greenwood, Marin <Marin.Greenwood@icf.com>
Subject: RE: Feather River Modeling Follow-up

Terrific! Thanks so much, Jason!

From: Kindopp, Jason@DWR <Jason.Kindopp@water.ca.gov>
Sent: Monday, March 7, 2022 10:25 AM
To: Geach, Christopher@DWR <Christopher.Geach@water.ca.gov>; Unger, Sophie <Sophie.Unger@icf.com>
Cc: Jones, Gardner@DWR <gardner.jones@water.ca.gov>; Greenwood, Marin <Marin.Greenwood@icf.com>
Subject: RE: Feather River Modeling Follow-up

Sophie,

I have no reason to believe depth distribution would be any different based on where we see the great majority of spawning in the HFC but I don't believe we've actually tested that assumption? I'll send you data from both the HFC and LFC.

Jason

Hi Jason,

Thanks again for the documents you sent me. I got a lot of good information from several of them. Especially useful for me at the moment is the redd survey report (attached). It contains information on redd depth distributions (Figure 17) that I'd like to use for a simple Feather River redd dewatering model that I'm developing. Do you have access to the data used for this figure? The numbers used to construct the depth histograms is really all I need, although the raw data would do just as well.


My only concern about using the redd survey report data is that they are for the LFC and I am trying to model redd dewatering in the HFC. Do you have similar data for HFC redds? Do you think there are any big differences in redd depth distribution between the LFC and HFC?

Thanks again for your help.

Sophie

From: Geach, Christopher@DWR <Christopher.Geach@water.ca.gov>
Sent: Monday, March 7, 2022 10:20 AM
To: Kindopp, Jason@DWR <Jason.Kindopp@water.ca.gov>
Cc: Jones, Gardner@DWR <Gardner.Jones@water.ca.gov>; Unger, Sophie <Sophie.Unger@icf.com>; Greenwood, Marin <Marin.Greenwood@icf.com>
Subject: RE: Feather River Modeling Follow-up

Hey Jason, hope you had a good weekend

Looks like we have a follow-up from Sophie and the team here:  [Depths of chinook redds.msg](#)

Thanks again for your help on this!

Chris Geach

916 376 9745 (office)

916 882 0977 (cell)

From: Unger, Sophie <Sophie.Unger@icf.com>
Sent: Wednesday, March 2, 2022 3:31 PM
To: Kindopp, Jason@DWR <Jason.Kindopp@water.ca.gov>; Geach, Christopher@DWR <Christopher.Geach@water.ca.gov>
Cc: Jones, Gardner@DWR <Gardner.Jones@water.ca.gov>
Subject: RE: Feather River Modeling Follow-up

Wow! Great information, Jason. Thank you so much!!

Sophie

From: Kindopp, Jason@DWR <Jason.Kindopp@water.ca.gov>
Sent: Wednesday, March 2, 2022 12:36 PM
To: Geach, Christopher@DWR <Christopher.Geach@water.ca.gov>
Cc: Jones, Gardner@DWR <gardner.jones@water.ca.gov>; Unger, Sophie <Sophie.Unger@icf.com>
Subject: RE: Feather River Modeling Follow-up

And here are some of those reports I mentioned in my response (and a few others that may be of interest). We don't have a recent report that demonstrates redd distribution in the entire spawning reach but we do have good data we could provide that includes the HFC. We've been heavily focused on the restoration areas in the upper LFC but we have not neglected the potential for stranding in the HFC for fall run so we do monitor the reach for redds and dewatering. We have tons of other reports (RST, etc.) so please let me know if you need anything else.

From: Kindopp, Jason@DWR
Sent: Wednesday, March 2, 2022 9:53 AM
To: Geach, Christopher@DWR <Christopher.Geach@water.ca.gov>
Cc: Jones, Gardner@DWR <Gardner.Jones@water.ca.gov>; Unger, Sophie <Sophie.Unger@icf.com>
Subject: RE: Feather River Modeling Follow-up

I've attached my responses. Please reach out with more questions. I will also forward this along to some folks on my team and see if they have anything to add. But wanted to get this back asap since I forgot about it.

From: Geach, Christopher@DWR <Christopher.Geach@water.ca.gov>
Sent: Tuesday, March 1, 2022 3:52 PM
To: Kindopp, Jason@DWR <Jason.Kindopp@water.ca.gov>
Cc: Jones, Gardner@DWR <Gardner.Jones@water.ca.gov>; Unger, Sophie <Sophie.Unger@icf.com>
Subject: RE: Feather River Modeling Follow-up

No worries, thanks!

Chris Geach

916 376 9745 (office)

916 882 0977 (cell)

From: Kindopp, Jason@DWR <Jason.Kindopp@water.ca.gov>
Sent: Tuesday, March 1, 2022 3:11 PM
To: Geach, Christopher@DWR <Christopher.Geach@water.ca.gov>
Cc: Jones, Gardner@DWR <Gardner.Jones@water.ca.gov>; Unger, Sophie <Sophie.Unger@icf.com>
Subject: RE: Feather River Modeling Follow-up

Sorry, dropped the ball on this. I'll take a look asap.

From: Geach, Christopher@DWR <Christopher.Geach@water.ca.gov>
Sent: Tuesday, March 1, 2022 2:18 PM
To: Kindopp, Jason@DWR <Jason.Kindopp@water.ca.gov>
Cc: Jones, Gardner@DWR <Gardner.Jones@water.ca.gov>; Unger, Sophie <Sophie.Unger@icf.com>
Subject: RE: Feather River Modeling Follow-up

Hey Jason,

I just wanted to follow-up and see if you had a chance to see the FR questions we included in the link referenced in the email below.

As always, really appreciate the assistance on FR topics.

-Chris

Chris Geach

916 376 9745 (office)

916 882 0977 (cell)

From: Geach, Christopher@DWR
Sent: Tuesday, February 22, 2022 12:30 PM
To: Kindopp, Jason@DWR <Jason.Kindopp@water.ca.gov>
Cc: Jones, Gardner@DWR <Gardner.Jones@water.ca.gov>; Unger, Sophie <Sophie.Unger@icf.com>
Subject: Feather River Modeling Follow-up

Hey Jason, hope you enjoyed the long weekend.

I wanted to follow-up regarding some recent DCP modeling efforts on the Feather River and some questions our aquatics team had, if you have availability. The link below includes an email with some questions, as well as the associated modeling results for reference. If you have some time to take a quick look, it would be very much appreciated.

 [Feather](#)

If needed, feel free to contact Sophie ((916) 642-6043) directly to follow-up on her questions. If you'd like, you can also respond directly in the email document included in the link.

Thanks for all your help so far on the DCP side of things! Please let us know if you have any questions or concerns.

-Chris

Chris Geach

916 376 9745 (office)

916 882 0977 (cell)

Substrate Size	Percent Occurrence
Sand (.05-2mm)	0.15
Small Gravel (2-50mm)	0.55
Large Gravel (50-150mm)	0.29

Cover Parameter	Percent Occurrence	
	No Cover	Mix of cover types
Overhead Cover	0.79	0.21
Instream Cover	0.95	0.05

Parameter	Mean	Maximum	Minimum	1 Standard Deviation
Water Depth (m)	0.35	0.92	0.12	0.19
Water Velocity (ft/s)	1.56	2.80	0.44	0.55
Redd Length (m)	1.20	2.50	0.34	0.50
Redd Width (m)	0.75	1.80	0.22	0.34

			140	138	278
12/24/2001	SH-FR-02		183	234	417
12/31/2001	SH-FR-02		39	56	95
1/7/2002	SH-FR-02		161	121	282
1/14/2002	SH-FR-02		46	44	90
1/23/2002	SH-FR-02		51	36	87
1/28/2002	SH-FR-02		64	34	98
2/4/2002	SH-FR-02		20	14	34
2/11/2002	SH-FR-02		8	8	16
2/19/2002	SH-FR-02		10	6	16
3/5/2002	SH-FR-02		10	6	16
3/14/2002	SH-FR-02		5	6	11
3/26/2002	SH-FR-02		2	2	4
Total SH-FR-02:		739	739	705	

			<u>Male</u>	<u>Female</u>	<u>Total</u>
12/1/2000	SH-FR-01		149	132	281
12/8/2000	SH-FR-01		172	117	289
12/14/2000	SH-FR-01		179	139	318

12/21/2000	SH-FR-01		172	101	273
12/28/2000	SH-FR-01		152	101	253
1/10/2001	SH-FR-01		121	117	238
1/17/2001	SH-FR-01		96	105	201
1/24/2001	SH-FR-01		30	20	50
1/31/2001	SH-FR-01		66	32	98
Total SH-FR-01:		1,137	1137	864	
			1876	1569	3445
			0.54	0.46	1
			88	75	163

0	0	0	278	0
0	0	0	417	0
0	0	0	95	0
0	0	0	282	0
0	0	0	90	0
1	0	1	88	0
1	0	1	99	0
0	0	0	34	0
0	0	0	16	0
0	0	0	16	0
0	0	0	16	0
0	0	0	11	0
0	0	0	4	0

<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Total</u>	<u>Temp.</u>	<u>Observer</u>
2	2	4	285	0	
6	3	9	298	0	
4	3	7	325	0	

4	1	5	278	0
2	2	4	257	0
1	0	1	239	0
15	1	16	217	0
1	0	1	51	0
7	1	8	106	0

Water Depth	Water Velocity		Redd Length		
Mean	0.347027	Mean	1.564191781	Mean	1.202568
Standard Error	0.02194	Standard Error	0.064141137	Standard Error	0.05812
Median	0.285	Median	1.61	Median	1.155
Mode	0.2	Mode	1.4	Mode	1
Standard Deviation	0.188736	Standard Deviation	0.548022117	Standard Deviation	0.49997
Sample Variance	0.035621	Sample Variance	0.30032824	Sample Variance	0.24997
Kurtosis	1.979995	Kurtosis	-0.594599952	Kurtosis	0.120821
Skewness	1.661996	Skewness	-0.105448903	Skewness	0.746877
Range	0.8	Range	2.36	Range	2.16
Minimum	0.12	Minimum	0.44	Minimum	0.34
Maximum	0.92	Maximum	2.8	Maximum	2.5
Sum	25.68	Sum	114.186	Sum	88.99
Count	74	Count	73	Count	74
Largest(1)	0.92	Largest(1)	2.8	Largest(1)	2.5
Smallest(1)	0.12	Smallest(1)	0.44	Smallest(1)	0.34

Parameter	Mean	Maximum	Minimum	1 Standard Deviation
Water Depth (m)	0.35	0.92	0.12	0.19
Water Velocity (ft/s)	1.56	2.80	0.44	0.55
Redd Length (m)	1.20	2.50	0.34	0.50
Redd Width (m)	0.75	1.80	0.22	0.34

Cover Parameter	None	Mix of cover types
Percent Occurrence of Overhead Cover	0.79	0.21
Percent Occurrence of Instream Cover	0.95	0.05

Substrate Size	Sand (.05-4 Small Gravel (2-50r Large Gravel (50-150mm)		
Percent Occurrence of Three Substrate Sizes	0.15	0.55	0.29

Species observations			
Chinook Salmon	Pacific Lan Steelhead		
23	2	108	

Substrate Size	2	3	4
Percent by occurrence	0.15	0.55	0.29

Overhead Cover	None	Some
Count	59	16
% Overhead Cover by occurrence	0.79	0.21

Redd Width	
Mean	0.751351
Standard Error	0.039466
Median	0.7
Mode	0.7
Standard Deviation	0.339497
Sample Variance	0.115258
Kurtosis	1.208533
Skewness	0.949051
Range	1.58
Minimum	0.22
Maximum	1.8
Sum	55.6
Count	74
Largest(1)	1.8
Smallest(1)	0.22

Date	# of Steelhead	Other Species	Roving #
1/6/2003	0	CHNA 85 fem spent took head	1
1/6/2003	0		2
1/6/2003	0		3
1/7/2003	0	scp chn sasu	4
1/7/2003	0	CHN	5
1/7/2003	0		6
1/7/2003	0		7
1/8/2003	0		11
1/8/2003	0		12
1/8/2003	0	CHN	14
1/8/2003	0	2 CHNA	13
1/8/2003	0	CHNA	15
1/8/2003	1		16
1/9/2003	0		18
1/9/2003	0		21
1/9/2003	0		20
1/9/2003	0		22
1/9/2003	0		23
1/9/2003	0		24
1/9/2003	0		17
1/9/2003	0		19
1/14/2003	7		1
1/14/2003	0		2
1/14/2003	0		3
1/14/2003	1		4
1/14/2003	0		5
1/15/2003	0		7
1/15/2003	0		8
1/15/2003	0		9
1/15/2003	0		10
1/15/2003	0		11
1/15/2003	0		12
1/15/2003	0		6
1/15/2003	0		13
1/15/2003	0		14
1/15/2003	0		15
1/16/2003	0		23
1/16/2003	0		24
1/16/2003	0		25
1/16/2003	0		17
1/16/2003	0		18
1/16/2003	0		19
1/16/2003	0		20
1/16/2003	0		21
1/16/2003	0		22
1/20/2003	1	2 chn	1
1/20/2003	0		2
1/20/2003	0		3
1/20/2003	0		4
1/20/2003	0	1 chn	5

1/20/2003	2	0
1/21/2003	0 Chna	6
1/21/2003	0	7
1/21/2003	0	8
1/21/2003	0	9
1/21/2003	0	10
1/21/2003	0	11
1/22/2003	0 chn	14
1/22/2003	0	15
1/22/2003	0	16
1/22/2003	0	17
1/22/2003	0	18
1/22/2003	0	19
1/22/2003	0	20
1/22/2003	0	21
1/23/2003	0	25
1/23/2003	0	24
1/23/2003	0	23
1/27/2003	1 steelhead carcass	6
1/27/2003	1	7
1/27/2003	0	8
1/27/2003	0	9
1/27/2003	0	11
1/27/2003	0 sasu	13
1/28/2003	8	1
1/28/2003	0	2
1/28/2003	1	3
1/28/2003	1	4
1/28/2003	1	5
1/28/2003	4	0
1/29/2003	0 1 chn	14
1/29/2003	0 1 chn	15
1/29/2003	0	16
1/29/2003	0	17
1/29/2003	0	19
1/29/2003	0	20
1/29/2003	3	21
1/29/2003	0	18
1/30/2003	0	22
1/30/2003	0	23
1/30/2003	0	24
1/30/2003	0	25
1/30/2003	0	26
2/3/2003	9	1
2/3/2003	0	2
2/3/2003	0	3
2/4/2003	1	6
2/4/2003	0	10
2/4/2003	0	11
2/4/2003	0	9
2/4/2003	0	7

2/4/2003	0	8
2/4/2003	0	12
2/4/2003	0	13
2/5/2003	0	19
2/5/2003	0	20
2/5/2003	0	21
2/5/2003	1	14
2/5/2003	0	15
2/5/2003	0	16
2/5/2003	2	17
2/5/2003	0	18
2/6/2003	0	22
2/6/2003	0	23
2/6/2003	0	24
2/6/2003	0	25
2/10/2003	0	11
2/10/2003	0	13
2/10/2003	0	14
2/10/2003	0	15
2/10/2003	0	16
2/10/2003	0	17
2/10/2003	0	18
2/10/2003	0	19
2/10/2003	0	20
2/10/2003	0	21
2/10/2003	0	22
2/10/2003	0	23
2/10/2003	0	24
2/10/2003	0	25
2/10/2003	0	10
2/10/2003	0	12
2/11/2003	0	6
2/11/2003	0	7
2/11/2003	0	8
2/11/2003	0	9
2/12/2003	15 4 chn	1
2/12/2003	0	2
2/12/2003	1	3
2/12/2003	3	4
2/12/2003	0	5
2/19/2003	4	1
2/19/2003	0	2
2/19/2003	1	3
2/19/2003	0	4
2/19/2003	0	5
2/19/2003	0	6
2/19/2003	0	7
2/19/2003	1	8
2/19/2003	0	9
2/19/2003	0	0
2/25/2003	18	1

2/25/2003	0	2
2/25/2003	0	4
2/25/2003	1	0
2/27/2003	0	6
2/27/2003	0	7
2/27/2003	0	8
2/27/2003	0	9
3/7/2003	3 1 chn	1
3/7/2003	0	2
3/7/2003	1	3
3/7/2003	0	4
3/7/2003	0	5
3/7/2003	0	6
3/7/2003	0	7
3/7/2003	0	8
3/7/2003	0	9
3/7/2003	2	0
3/14/2003	0	0
3/14/2003	0	1
3/14/2003	0	2
3/14/2003	0	3
3/14/2003	0 1 chn	4
3/14/2003	0	5
3/14/2003	0	6
3/14/2003	0	7
3/14/2003	0	8
3/14/2003	0	9
3/14/2003	0	
3/18/2003	0	12
3/18/2003	0	13
3/18/2003	0	10
3/18/2003	0 sasus	14
3/19/2003	0 1 pl	1
3/19/2003	0	2
3/19/2003	0 2 chn	3
3/19/2003	0	4
3/19/2003	0	5
3/19/2003	0	0
3/20/2003	2	6
3/20/2003	0 sasus	7
3/20/2003	0 sasus	8
3/20/2003	0 sasus	9
3/25/2003	0 sasus	1
3/25/2003	0	0
3/25/2003	0	2
3/25/2003	0	3
3/25/2003	0 sasus	4
3/25/2003	0 sasus	5
3/25/2003	0 sasus	6
3/25/2003	0 sasus	7
3/25/2003	0 sasus	8

3/25/2003	0 sasu	9
4/3/2003	0 chn	0
4/3/2003	0 chn sasu	1
4/3/2003	0	2
4/3/2003	0 sasu	3
4/3/2003	0 sasu	4
4/3/2003	0 sasu	5
4/3/2003	0 sasu	6
4/3/2003	0 sasu	7
4/3/2003	0 sasu	8
4/3/2003	0 sasu	9
	97 23 salmon observed	

Date	Location	Instream Cover	Water Depth	Water Velocity	Redd Length	Redd Width	Redd area m ²	Survey Type
1/6/2003		1 None	0.32	0.44	0.90	1.80	1.62	Roving
1/6/2003	Upper Hatchery Ditch	None	0.20	0.56	0.75	0.75	0.56	Transect
1/6/2003	Upper Hatchery Ditch	E	0.22	0.54	1.00	0.70	0.70	Transect
1/6/2003	Upper Hatchery Ditch	None	0.12	1.65	0.80	0.70	0.56	Transect
1/7/2003		6 None	0.34	1.67	1.50	0.80	1.20	Roving
1/7/2003	Steep SC	None	0.42	1.95	1.30	0.80	1.04	Transect
1/14/2003		0 None	0.15	1.12	1.50	0.80	1.20	Roving
1/14/2003		0 None	0.23	1.34	1.20	1.80	2.16	Roving
1/14/2003		0 None	0.21	1.68	1.35	0.65	0.88	Roving
1/14/2003		1 None	0.20	1.00	1.80	1.00	1.80	Roving
1/14/2003	Cottonwood	None	0.41	2.32	1.50	0.80	1.20	Transect
1/14/2003	Lower Auditorium	None	0.31	1.06	0.70	1.00	0.70	Transect
1/14/2003	Upper Hatchery	None	0.20	1.48	1.00	0.60	0.60	Transect
1/14/2003	Upper Hatchery	None	0.30	0.58	1.20	0.70	0.84	Transect
1/16/2003		20 None	0.32	0.66	1.10	0.90	0.99	Roving
1/16/2003	Hour Bars East	None	0.28	0.71	0.80	0.55	0.44	Transect
1/16/2003	Lower Big	None	0.27	1.36	1.04	1.50	1.56	Transect

1/20/2003	0 None	0.25	1.06	1.10	0.90	0.99 Roving
1/20/2003	0 None	0.22	1.45	1.00	0.90	0.90 Roving
1/20/2003 Aleck	None	0.23	1.18	0.60	0.30	0.18 Transect
1/20/2003 Aleck	None	0.36	1.73	1.20	1.10	1.32 Transect
1/20/2003 Upper Hatchery Ditch	None	0.20	2.00	1.10	1.00	1.10 Transect
1/20/2003 Upper Hatchery Ditch	None	0.23	1.12	1.00	1.00	1.00 Transect
1/21/2003 Steep SC	None	0.20	1.84	1.00	0.50	0.50 Transect
1/21/2003 Steep SC	None	0.28	2.17	1.50	0.60	0.90 Transect
1/22/2003 Lower MacFarland	None	0.30	1.32	0.75	0.30	0.23 Transect
1/23/2003 Upper Herring	None	0.30	2.00	0.95	0.55	0.52 Transect
1/27/2003	7 F	0.36	2.50	1.60	0.40	0.64 Roving
1/27/2003	7 None	0.39	2.44	2.00	0.50	1.00 Roving
1/27/2003 Steep SC	None	0.39	1.89	1.40	0.38	0.53 Transect
1/27/2003 Upper Robinson	None	0.31	0.51	1.57	0.77	1.21 Transect
1/28/2003	0 None	0.27	1.18	1.20	1.10	1.32 Roving
1/29/2003	15 None	0.26	1.83	0.93	0.60	0.56 Roving
1/29/2003	21 None	0.76	2.06	1.50	0.37	0.56 Roving
1/29/2003	21 None	0.77	2.06	2.00	0.55	1.10 Roving

1/29/2003	21 None	0.77	1.95	1.40	0.30	0.42 Roving
1/29/2003	21 None	0.74	1.95	1.15	0.35	0.40 Roving
1/29/2003	21 None	0.90	1.31	1.50	0.70	1.05 Roving
1/29/2003 G-95 East SC	None	0.27	1.95	1.40	1.00	1.40 Transect
1/30/2003	23 None	0.54	1.28	1.16	0.98	1.14 Roving
1/30/2003 Cox	None	0.50	1.28	0.68	0.42	0.29 Transect
1/30/2003 Gridley East	None	0.36	1.53	0.50	0.30	0.15 Transect
1/30/2003 Long Glide	None	0.92	2.17	1.00	0.50	0.50 Roving
1/30/2003 Long Glide	None	0.76	2.22	0.70	0.30	0.21 Roving
1/30/2003 Upper Herring	None	0.24	1.40	0.56	0.22	0.12 Transect
2/3/2003	0 None	0.29	1.76	1.25	0.90	1.13 Roving
2/3/2003	0 B	0.20	0.83	1.30	1.00	1.30 Roving
2/3/2003 Lower Auditorium	None	0.30	0.91	1.30	0.65	0.85 Transect
2/3/2003 Lower Auditorium	None	0.37	1.61	1.20	1.10	1.32 Transect
2/3/2003 Lower Auditorium	None	0.35	1.09	1.00	1.20	1.20 Transect
2/3/2003 Lower Hatchery Ditch	None	0.26	1.98	1.30	1.10	1.43 Transect
2/3/2003 Lower Hatchery Ditch	None	0.20	1.24	0.75	0.60	0.45 Transect
2/3/2003 Upper Matthews	None	0.48	1.66	0.69	0.50	0.35 Transect

2/5/2003	21	None	0.76	2.01	1.00	0.90	0.90 Roving
2/5/2003	21	None	0.36	1.12	0.80	0.70	0.56 Roving
2/5/2003	21	None	0.80	1.26	0.80	0.65	0.52 Roving
2/11/2003 Steep		None	0.16	2.80	0.60	0.70	0.42 Transect
2/12/2003 Lower Hatchery Ditch		None	0.16		0.50	0.40	0.20 Transect
2/19/2003	0	None	0.36	1.40	2.50	1.40	3.50 Transect
2/19/2003	0	None	0.36	2.30	2.40	1.10	2.64 Roving
2/19/2003	0	none	0.38	2.20	2.30	0.64	1.47 Roving
2/19/2003	0	None	0.22	1.40	2.20	0.70	1.54 Roving
2/19/2003	0	None	0.28	1.72	1.70	1.50	2.55 Roving
2/19/2003	0	None	0.26	1.81	1.40	0.80	1.12 Roving
2/19/2003	6	None	0.18	2.30	1.70	0.70	1.19 Roving
2/19/2003	6	None	0.26	1.70	2.20	1.00	2.20 Roving
2/19/2003 Lower Auditorium		None	0.36	1.34	2.20	0.90	1.98 Transect
2/19/2003 Steep		None	0.39	2.53	2.10	0.90	1.89 Transect
2/25/2003	0	None	0.16	1.40	0.61	0.38	0.23 Roving
2/27/2003 Steep SC		None	0.23	2.20	0.70	0.36	0.25 Transect
2/27/2003 Upper Robinson		None	0.22	1.65	0.34	0.56	0.19 Transect
3/7/2003	0	None	0.16	0.85	1.20	0.50	0.60 Roving

3/7/2003	0 B	0.26	1.12	0.92	0.80	0.74 Roving
3/7/2003	0 None	0.20	1.40	1.20	0.70	0.84 Roving
3/20/2003	6 None	0.28	2.22	0.44	0.32	0.14 Roving
Mean or total		0.34	1.56	1.21	0.75	0.96
Count	75					
Kurtosis	2.644961					
Maximum	3.5					
Mean	0.959567					
Median	0.9					
<u>Minimum</u>	<u>0.1232</u>					
Mode	1.2					
Range	3.3768					
	<i>redd area m2</i>					
Sample Variance	0.416092					
Skewness	1.331788					
Standard Deviation	0.645052					
Standard Error	0.074484					
Sum	71.9675					

# of Steelhead	Riffle Position	Distance from bank	GPS Coordinates	Overhead Cover	Instream Cover	Substrate Code	2s	3s	4s
			N 39.30.958						
0	Tail	6	W 121.33.638		3 None	2,3		0	1 1
			N 39.30.998						
0	Middle	2	W 121.33.400		3 None	3,4		0	1 1
			N 39.31.009						
0	Middle	0.5	W 121.33.420	1,3	E	2,3		0	1 1
			N 39.31.009						
0	Middle	1	W 121.33.420	1,3	None	2,4		0	1 0
			N 39.30.511						
0	Middle	75	W 121.30.285	None	None	3		0	1 0
			N 39.28.007						
0	Head	4	W 121.35.686	None	None	3		0	1 0
			N 39.31.010						
0	Middle	1	W 121.33.441	1,3	None	3,4		1	1 0
			N 39.30.996						
0	Middle	4	W 121.33.424		3 None	3,4		1	1 0
			N 39.31.000						
0	Middle	4	W 121.33.423		3 None	3,4		1	1 0
			N 39.30.942						
0	Middle	1	W 121.33.607	none	None	3,4		1	1 0
			N 39.30.999						
0	Head	4	W 121.33.352	None	None	3		1	1 0
			N 39.30.948						
0	Middle	0.5	W 121.33.584	none	None	3,4		0	1 0
			N 39.30.978						
0	Middle	5.5	W 121.33.151		3 None	3		1	1 0
			N 39.30.980						
2	Middle	3.5	W 121.33.148		3 None	3		1	1 0
			N 39.23.161						
0	Middle	6	W 121.37.715	None	None	3		0	1 0
			N 39.24.959						
0	Middle	10	W 121.34.579	None	None	3		0	1 1
			N 39.23.402						
0	Tail	30	W 121.37.418	None	None	3		0	1 1

0 Middle	N 39.30.995 0.5 W 121.33.430	1 None		3	0	1	1
0 Middle	N 39.30.995 3.5 W 121.33.430	None	None	3	1	0	0
0 Head	N 39.29.057 0.25 W 121.34.742	none	None	2,3	0	1	1
0 Head	N 39.29.061 2 W 121.34.739	none	None	3	0	1	0
0 Tail	N 39.30.995 4 W 121.33.421	None	None	3	1	1	0
0 Tail	N 39.30.995 1.5 W 121.33.420	None	None	3	1	1	0
0 Tail	N 39.27.786 1.5 W 121.36.194	None	None	3	0	1	1
0 Head	N 39.27.765 0.5 W 121.36.199	None	None	3	0	1	1
0 Middle	N 39.22.385 5 W 121.38.073	None	None	3	0	1	1
0 Middle	N 39.19.101 10 W 121.37.197	None	None	3	0	1	1
0 Middle	N 39.27.692 0 W 121.36.475		1 F	3	0	1	1
0 Middle	N 39.27.692 1.5 W 121.36.475	None	None	3	0	1	1
0 Middle	N 39.27.766 1 W 121.36.203	None	None	3	0	1	1
0 Middle	N 39.27.999 40 W 121.35.707	None	None	3	0	1	1
0 Middle	N 39.30.966 4.5 W 121.33.551	None	None	3	0	1	1
0 Middle	N 39.25.797 40 W 121.37.797	None	None	3	0	1	1
0 Middle	N 39.22.465 35 W 121.38.292	None	None	3	0	1	1
0 Middle	N 39.22.464 30 W 121.38.299	None	None	3	0	1	1

	N 39.22.459							
0 Middle	40 W 121.38.272	None	None		3	0	1	1
	N 39.22.451							
0 Middle	35 W 121.38.267	None	None		3	0	1	1
	N 39.22.460							
0 Middle	50 W 121.38.260	None	None		3	1	1	0
	N 39.25.852							
0 Middle	30 W 121.37.742	None	None		3	0	1	1
	N 39.20.835							
0 Middle	25 W 121.37.642	None	None		3	0	1	1
	N 39.20.216							
0 Head	32 W 121.37.894	None	None		3	0	1	1
	N 39.21.298							
0 Middle	15 W 121.37.773	None	None		3	0	1	1
	N 39.18.555							
0	16 W 121.37.637	None	None		3	0	1	1
	N 39.18.554							
0	18 W 121.37.643	None	None		3	0	1	1
	N 39.19.102							
0 Middle	W 121.37.197	None	None		3	0	1	1
	N 39.30.991							
0 m	2 W 121.33.486	2,3	None	2,3		0	1	1
	N 39.30.971							
0 Middle	0.5 W 121.33.531	1,3	B	2,3		0	1	1
	N 39.30.948							
0 Middle	0.5 W 121.33.588	non	None	2,3		1	1	0
	N 39.30.939							
0 Middle	9 W 121.33.953	none	None	2,3		1	1	0
	N 39.30.994							
2 Head	1 W 121.33.577		1 None	2,3		1	1	0
	N 39.30.971							
0 Middle	2 W 121.33.539	2,3	None	2,3		1	1	0
	N 39.30.965							
0 Middle	W 121.33.539		3 None	2,3		0	1	0
	N 39.29.552							
0 Head	15 W 121.34.754	none	None	3,4		1	1	0

		N 39.22.456							
0	12	W 121.38.284	none	None	3,4		1	1	0
		N 39.22.451							
0	6	W 121.38.283	none	None	3,4		0	1	1
		N 39.22.466							
0	15	W 121.38.294	none	None	3,4		0	1	0
		N 39.27.797							
1	5	W 121.36.297	none	None	3,4		0	1	1
		N 39.30.979							
0	0.7	W 121.33.486	none	None	3,4		0	0	1
		N 39.30.989							
0	0.6	W 121.33.456	none	None	2,3		0	1	0
		N 39.30.884							
0		W 121.33.458	none	None	2,3		0	1	0
		N 39.31.991							
0	3	W 121.33.447	none	none	2,3		0	1	0
		N 39.31.006							
0	0.3	W 121.33.418	none	None		3	0	1	0
		N 39.30.986							
1	0.1	W 121.33.537	1,2,3	None	2,3		1	1	0
		N 39.30.281							
0	0.25	W 121.33.500	1,2	None	2,3		0	1	0
		N 39.28.045							
0	0.2	W 121.35.635	none	None	2,3		0	1	0
		N 39.28.026							
0	1	W 121.35.877	none	None	2,3		0	1	1
1	5		none	None	2,3		1	1	0
		N 39.27.750							
0	1.3	W 121.36.271	none	None		4	1	0	1
		N 39.27.741							
0	0.5	W 121.36.271		3 None		3	0	1	0
		N 39.27.787							
0		W 121.36.198	none	None	2,3		0	1	0
		N 39.28.017							
0	15	W 121.35.677	none	None	3,4		0	1	0
		N 39.31.005							
0	2	W 121.33.393	none	None	3,4		0	1	0

	N 39.30.994								
0 Middle	2 W 121.33.422	none	B	3,4	0	1	1		
	N 39.30.978								
2 Middle	0.75 W 121.33.523	none	None	3,4	0	1	1		
	N 39.28.032								
2 Middle	15 W 121.35.639	none	None	3,4	0	1	1		
11					20	72	38		130
					0.153846	0.553846	0.292308		1

Date Identified	Location	Instream Cover	Water Depth (m)	Water Velocity (ft/s)	Redd area m ²	Survey Type	Number of Steelhead	Riffle Position	Distance from bank	GPS Coordinates	Overhead Cover	Instream Cover	Substrate Code
1/6/2003	1	None	0.32	0.44	1.62	Roving	0	Tail	6	N 39.30.958 W 121.33.638	3	None	2,3
1/6/2003	Upper Hatchery Ditch	None	0.20	0.56	0.56	Transect	0	Middle	2	N 39.30.998 W 121.33.400	3	None	3,4
1/6/2003	Upper Hatchery Ditch	E	0.22	0.54	0.70	Transect	0	Middle	0.5	N 39.31.009 W 121.33.420	1,3	E	2,3
1/6/2003	Upper Hatchery Ditch	None	0.12	1.65	0.56	Transect	0	Middle	1	N 39.31.009 W 121.33.420	1,3	None	2,4
1/7/2003	6	None	0.34	1.67	1.20	Roving	0	Middle	75	N 39.30.511 W 121.30.285	None	None	3
1/7/2003	Steep SC	None	0.42	1.95	1.04	Transect	0	Head	4	N 39.28.007 W 121.35.686	None	None	3
1/14/2003	0	None	0.15	1.12	1.20	Roving	0	Middle	1	N 39.31.010 W 121.33.441	1,3	None	3,4
1/14/2003	0	None	0.23	1.34	2.16	Roving	0	Middle	4	N 39.30.996 W 121.33.424	3	None	3,4
1/14/2003	0	None	0.21	1.68	0.88	Roving	0	Middle	4	N 39.31.000 W 121.33.423	3	None	3,4
1/14/2003	1	None	0.20	1.00	1.80	Roving	0	Middle	1	N 39.30.942 W 121.33.607	none	None	3,4
1/14/2003	Cottonwood	None	0.41	2.32	1.20	Transect	0	Head	4	N 39.30.999 W 121.33.352	None	None	3
1/14/2003	Lower Auditorium	None	0.31	1.06	0.70	Transect	0	Middle	0.5	N 39.30.948 W 121.33.584	none	None	3,4
1/14/2003	Upper Hatchery	None	0.20	1.48	0.60	Transect	0	Middle	5.5	N 39.30.978 W 121.33.151	3	None	3
1/14/2003	Upper Hatchery	None	0.30	0.58	0.84	Transect	2	Middle	3.5	N 39.30.980 W 121.33.148	3	None	3
1/16/2003	20	None	0.32	0.66	0.99	Roving	0	Middle	6	N 39.23.161 W 121.37.715	None	None	3
1/16/2003	Hour Bars East	None	0.28	0.71	0.44	Transect	0	Middle	10	N 39.24.959 W 121.34.579	None	None	3

1/16/2003	Lower Big	None	0.27	1.36	1.56	Transect	0	Tail	30	N 39.23.402 W 121.37.418	None	None	3
1/20/2003	0	None	0.25	1.06	0.99	Roving	0	Middle	0.5	N 39.30.995 W 121.33.430	1	None	3
1/20/2003	0	None	0.22	1.45	0.90	Roving	0	Middle	3.5	N 39.30.995 W 121.33.430	None	None	3
1/20/2003	Aleck	None	0.23	1.18	0.18	Transect	0	Head	0.25	N 39.29.057 W 121.34.742	none	None	2,3
1/20/2003	Aleck	None	0.36	1.73	1.32	Transect	0	Head	2	N 39.29.061 W 121.34.739	none	None	3
1/20/2003	Upper Hatchery Ditch	None	0.20	2.00	1.10	Transect	0	Tail	4	N 39.30.995 W 121.33.421	None	None	3
1/20/2003	Upper Hatchery Ditch	None	0.23	1.12	1.00	Transect	0	Tail	1.5	N 39.30.995 W 121.33.420	None	None	3
1/21/2003	Steep SC	None	0.20	1.84	0.50	Transect	0	Tail	1.5	N 39.27.786 W 121.36.194	None	None	3
1/21/2003	Steep SC	None	0.28	2.17	0.90	Transect	0	Head	0.5	N 39.27.765 W 121.36.199	None	None	3
1/22/2003	Lower MacFarland	None	0.30	1.32	0.23	Transect	0	Middle	5	N 39.22.385 W 121.38.073	None	None	3
1/23/2003	Upper Herringer	None	0.30	2.00	0.52	Transect	0	Middle	10	N 39.19.101 W 121.37.197	None	None	3
1/27/2003	7	F	0.36	2.50	0.64	Roving	0	Middle	0	N 39.27.692 W 121.36.475	1	F	3
1/27/2003	7	None	0.39	2.44	1.00	Roving	0	Middle	1.5	N 39.27.692 W 121.36.475	None	None	3
1/27/2003	Steep SC	None	0.39	1.89	0.53	Transect	0	Middle	1	N 39.27.766 W 121.36.203	None	None	3
1/27/2003	Upper Robinson	None	0.31	0.51	1.21	Transect	0	Middle	40	N 39.27.999 W 121.35.707	None	None	3
1/28/2003	0	None	0.27	1.18	1.32	Roving	0	Middle	4.5	N 39.30.966 W 121.33.551	None	None	3
1/29/2003	15	None	0.26	1.83	0.56	Roving	0	Middle	40	N 39.25.797 W 121.37.797	None	None	3
1/29/2003	21	None	0.76	2.06	0.56	Roving	0	Middle	35	N 39.22.465 W 121.38.292	None	None	3

1/29/2003	21	None	0.77	2.06	1.10	Roving	0	Middle	30	N 39.22.464 W 121.38.299	None	None	3
1/29/2003	21	None	0.77	1.95	0.42	Roving	0	Middle	40	N 39.22.459 W 121.38.272	None	None	3
1/29/2003	21	None	0.74	1.95	0.40	Roving	0	Middle	35	N 39.22.451 W 121.38.267	None	None	3
1/29/2003	21	None	0.90	1.31	1.05	Roving	0	Middle	50	N 39.22.460 W 121.38.260	None	None	3
1/29/2003	G-95 East SC	None	0.27	1.95	1.40	Transect	0	Middle	30	N 39.25.852 W 121.37.742	None	None	3
1/30/2003	23	None	0.54	1.28	1.14	Roving	0	Middle	25	N 39.20.835 W 121.37.642	None	None	3
1/30/2003	Cox	None	0.50	1.28	0.29	Transect	0	Head	32	N 39.20.216 W 121.37.894	None	None	3
1/30/2003	Gridley East	None	0.36	1.53	0.15	Transect	0	Middle	15	N 39.21.298 W 121.37.773	None	None	3
1/30/2003	Long Glide	None	0.92	2.17	0.50	Roving	0		16	N 39.18.555 W 121.37.637	None	None	3
1/30/2003	Long Glide	None	0.76	2.22	0.21	Roving	0		18	N 39.18.554 W 121.37.643	None	None	3
1/30/2003	Upper Herringer	None	0.24	1.40	0.12	Transect	0	Middle		N 39.19.102 W 121.37.197	None	None	3
2/3/2003	0	None	0.29	1.76	1.13	Roving	0	m	2	N 39.30.991 W 121.33.486	2,3	None	2,3
2/3/2003	0	B	0.20	0.83	1.30	Roving	0	Middle	0.5	N 39.30.971 W 121.33.531	1,3	B	2,3
2/3/2003	Lower Auditorium	None	0.30	0.91	0.85	Transect	0	Middle	0.5	N 39.30.948 W 121.33.588	non	None	2,3
2/3/2003	Lower Auditorium	None	0.37	1.61	1.32	Transect	0	Middle	9	N 39.30.939 W 121.33.953	none	None	2,3
2/3/2003	Lower Auditorium	None	0.35	1.09	1.20	Transect	2	Head	1	N 39.30.994 W 121.33.577	1	None	2,3
2/3/2003	Lower Hatchery Ditch	None	0.26	1.98	1.43	Transect	0	Middle	2	N 39.30.971 W 121.33.539	2,3	None	2,3
2/3/2003	Lower Hatchery Ditch	None	0.20	1.24	0.45	Transect	0	Middle		N 39.30.965 W 121.33.539	3	None	2,3

2/3/2003	Upper Matthews	None	0.48	1.66	0.35	Transect	0	Head	15	N 39.29.552 W 121.34.754	none	None	3,4
2/5/2003	21	None	0.76	2.01	0.90	Roving	0		12	N 39.22.456 W 121.38.284	none	None	3,4
2/5/2003	21	None	0.36	1.12	0.56	Roving	0		6	N 39.22.451 W 121.38.283	none	None	3,4
2/5/2003	21	None	0.80	1.26	0.52	Roving	0		15	N 39.22.466 W 121.38.294	none	None	3,4
2/11/2003	Steep	None	0.16	2.80	0.42	Transect	1	Head	5	N 39.27.797 W 121.36.297	none	None	3,4
2/12/2003	Lower Hatchery Ditch	None	0.16		0.20	Transect	0	Middle	0.7	N 39.30.979 W 121.33.486	none	None	3,4
2/19/2003	0	None	0.36	1.40	3.50	Transect	0	Middle	0.6	N 39.30.989 W 121.33.456	none	None	2,3
2/19/2003	0	None	0.36	2.30	2.64	Roving	0	Middle		N 39.30.884 W 121.33.458	none	None	2,3
2/19/2003	0	none	0.38	2.20	1.47	Roving	0	Middle	3	N 39.31.991 W 121.33.447	none	none	2,3
2/19/2003	0	None	0.22	1.40	1.54	Roving	0	Middle	0.3	N 39.31.006 W 121.33.418	none	None	3
2/19/2003	0	None	0.28	1.72	2.55	Roving	1	Middle	0.1	N 39.30.986 W 121.33.537	1,2,3	None	2,3
2/19/2003	0	None	0.26	1.81	1.12	Roving	0	Middle	0.25	N 39.30.281 W 121.33.500	1,2	None	2,3
2/19/2003	6	None	0.18	2.30	1.19	Roving	0	Middle	0.2	N 39.28.045 W 121.35.635	none	None	2,3
2/19/2003	6	None	0.26	1.70	2.20	Roving	0	Head	1	N 39.28.026 W 121.35.877	none	None	2,3
2/19/2003	Lower Auditorium	None	0.36	1.34	1.98	Transect	1	Middle	5		none	None	2,3
2/19/2003	Steep	None	0.39	2.53	1.89	Transect	0	Middle	1.3	N 39.27.750 W 121.36.271	none	None	4
2/25/2003	0	None	0.16	1.40	0.23	Roving	0	Middle	0.5	N 39.27.741 W 121.36.271	3	None	3
2/27/2003	Steep SC	None	0.23	2.20	0.25	Transect	0	Middle		N 39.27.787 W 121.36.198	none	None	2,3

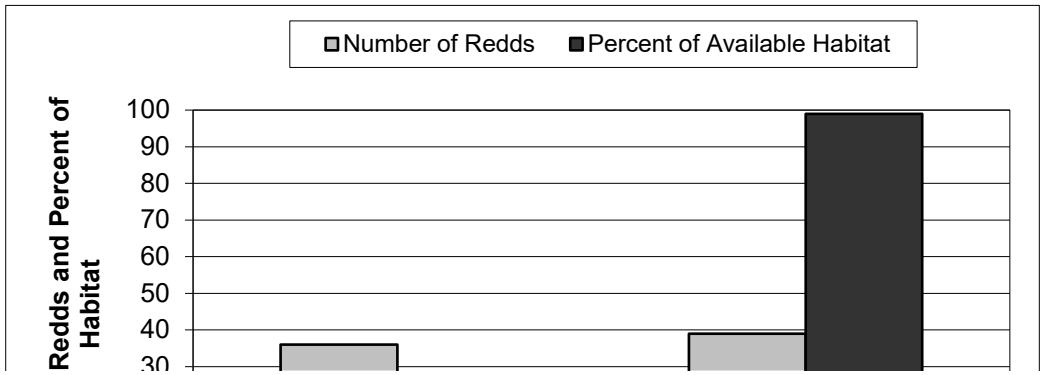
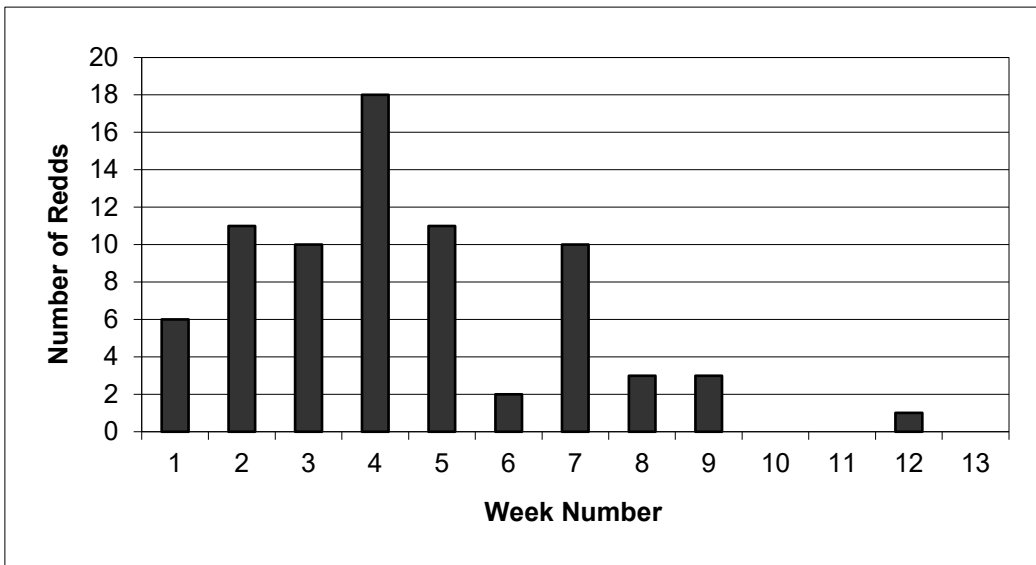
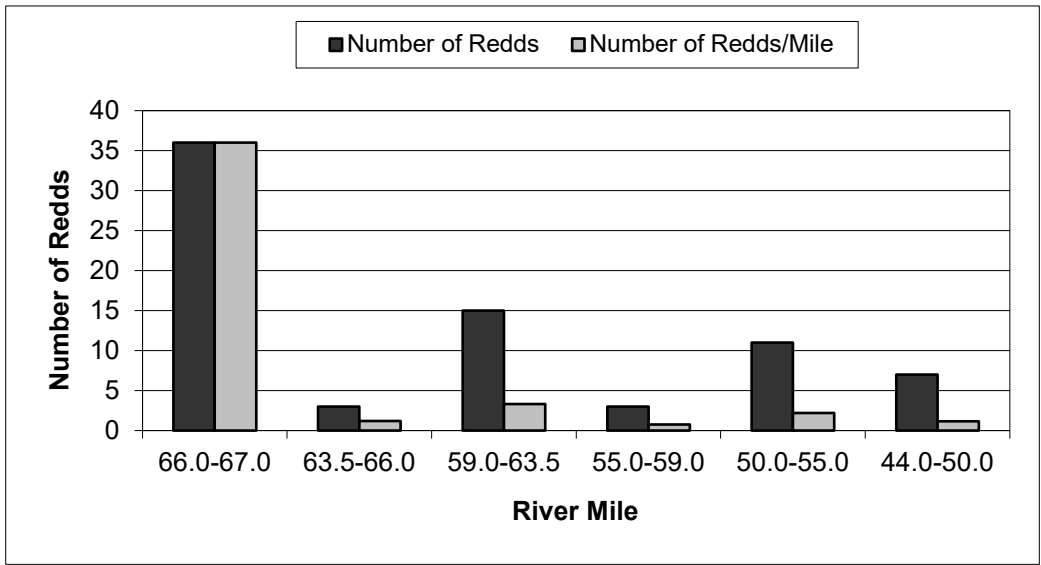
2/27/2003	Upper Robinson	None	0.22	1.65	0.19	Transect	0	Middle	15	N 39.28.017 W 121.35.677	none	None	3,4
3/7/2003	0	None	0.16	0.85	0.60	Roving	0	Middle	2	N 39.31.005 W 121.33.393	none	None	3,4
3/7/2003	0	B	0.26	1.12	0.74	Roving	0	Middle	2	N 39.30.994 W 121.33.422	none	B	3,4
3/7/2003	0	None	0.20	1.40	0.84	Roving	2	Middle	0.75	N 39.30.978 W 121.33.523	none	None	3,4
3/20/2003	6	None	0.28	2.22	0.14	Roving	2	Middle	15	N 39.28.032 W 121.35.639	none	None	3,4

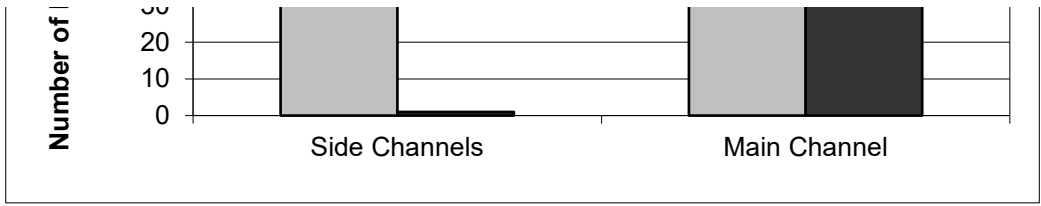
2s	3s	4s	
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	0	1	1
	0	1	0
	0	1	0
	0	1	0
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	1	1	0
	1	1	0
	1	1	0
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	0	1	0
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	1	1	0
	0	1	0
	0	1	1

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0	1	1	
0	1	1	
0	1	1	
20	72	38	130
0.153846	0.553846	0.292308	1





Count of Location		Location	Selected River Sections	River Miles
		(blank)	Grand Total	
Total				
			Auditorium to Table Mountain Bridge	66.0-67.0
			Aleck to Auditorium	63.5-66.0
			Afterbay Outlet to Aleck	59.0-63.5
			Keister to Afterbay Outlet	55.0-59.0
			Gridley to Keister	50.0-55.0
			Honcut Creek to Gridley	44.0-50.0

Location	River Mile	# Redds	Roving #	# Redds
Table Mtn	66.9	0	0	18
Upper Hatchery	66.8	2	1	2
Hatchery	66.7	0	2	0
Cottonwood	66.6	1	3	0
Hatchery Ditch	66.5	8	4	0
Lower Auditorium	66.4	5	5	0
Upper Bedrock Pool	66	0	6	4
Bedrock Park	65.8	0	7	2
Trailer Park	64.3	0	8	0
Upper Matthews	64.1	1	9	0
Lower Matthews	64	0	10	0
Aleck	63.5	2	11	0
Upper Robinson	61.9	2	12	0
Upper Robinson SC	61.6	0	13	0
Robinson	61.5	0	14	0
Lower Robinson SC	61.4	0	15	1
Steep SC	61.1	5	16	0
Steep	61	2	17	0
Weir	60.8	0	18	0
Eye SC	60.3	0	19	0
Eye	60.2	0	20	1
Gateway	59.7	0	21	8
Vance West	58.7	0	22	0
Vance East	58.6	0	23	1
Lower Big Hole West	57.9	0	24	0
Lower Big Hole East	57.9	0	25	0
G-95 West SC	57.3	0		
G-95 Main Channel	57.2	0		
G-95 East SC	57.1	1		
Lower Hour	56.3	0		
Hour Bars East	56	1		
Keister	55	0		
Goose	54.7	0		
Big	54	0		
Lower Big	53.3	1		

Upper MacFarland	53	0
Lower MacFarland	52	1
Gridley East	49.4	1
Junkyard	48.8	0
Cox	47.7	1
Upper Herringer	46.3	2
Long Glide/Herringer Pool	44.9	2
		38

Number of Redds	Number of Redds/Mile	Percent of all Redds Constructed
36	36.0	0.48
3	1.2	0.04
15	3.3	0.20
3	0.8	0.04
11	2.2	0.15
7	1.2	0.09
75		

Side Channel
v. Main
Channel

	Number of R	Percent of Available Habitat
Side Channels	36	1
Main Channel	39	99

	No Cover	Cover
Instream Cove	74	4

Overhead Cover

	No. Redds	Area m2
Hatchery Ditch	26	2100

Jan	week #	Count by Week	Feb	Week #	Count by week	
1/6/2003		1	6	2/3/2003	5	11
1/7/2003				2/5/2003		
1/14/2003		2	11	2/11/2003	6	2
1/15/2003				2/12/2003		
1/16/2003				2/19/2003	7	10
1/20/2003		3	10	2/25/2003	8	3
1/21/2003				2/27/2003		
1/22/2003						
1/23/2003						
1/27/2003		4	18			
1/28/2003						
1/29/2003						
1/30/2003						
			45			26

Date	Location	Count	Week #	Number of Redds
1/6/2003		1	1	6
1/6/2003	Upper Hatchery Ditch		2	11
1/6/2003	Upper Hatchery Ditch		3	10
1/6/2003	Upper Hatchery Ditch		4	18
1/7/2003	Steep SC	6	5	11
1/14/2003		0	6	2
1/14/2003		0	7	10
1/14/2003		0	8	3
1/14/2003		1	9	3
1/14/2003	Cottonwood		10	0
1/14/2003	Lower Auditorium		11	0
1/14/2003	Upper Hatchery		12	1
1/14/2003	Upper Hatchery		13	0
1/16/2003		20		
1/16/2003	Hour Bars East			
1/16/2003	Lower Big			
1/20/2003		0		
1/20/2003		0		
1/20/2003	Aleck			
1/20/2003	Aleck			
1/20/2003	Upper Hatchery Ditch			
1/20/2003	Upper Hatchery Ditch			
1/21/2003	Steep SC			
1/21/2003	Steep SC			
1/22/2003	Lower MacFarland			
1/23/2003	Upper Herring			
1/27/2003		7		
1/27/2003		7		
1/27/2003	Steep SC			
1/27/2003	Upper Robinson			
1/28/2003		0		
1/29/2003		15		
1/29/2003		21		
1/29/2003		21		

1/29/2003	21
1/29/2003	21
1/29/2003	21
1/29/2003 G-95 East SC	
1/30/2003	23
1/30/2003 Cox	
1/30/2003 Gridley East	
1/30/2003 Long Glide	
1/30/2003 Long Glide	
1/30/2003 Upper Herringer	
2/3/2003	0
2/3/2003	0
2/3/2003 Lower Auditorium	
2/3/2003 Lower Auditorium	
2/3/2003 Lower Auditorium	
2/3/2003 Lower Hatchery Ditch	
2/3/2003 Lower Hatchery Ditch	
2/3/2003 Upper Matthews	
2/5/2003	21
2/5/2003	21
2/5/2003	21
2/11/2003 Steep	
2/12/2003 Lower Hatchery Ditch	
2/19/2003	0
2/19/2003	0
2/19/2003	0
2/19/2003	0
2/19/2003	0
2/19/2003	0
2/19/2003	6
2/19/2003	6
2/19/2003 Lower Auditorium	
2/19/2003 Steep	
2/25/2003	0
2/27/2003 Steep SC	
2/27/2003 Upper Robinson	
3/7/2003	0
3/7/2003	0
3/7/2003	0
3/20/2003	6

Mar	Week #	Count by week
3/7/2003	9	3
3/10/2003	10	0
3/20/2003	11	0
3/24/2003	12	1
3/31/2003	13	0

4 75

Roving #	Date	Number of Redds
Aleck	1/7/2003	0
Aleck	1/14/2003	0
Aleck	1/20/2003	2
Aleck	1/28/2003	0
Aleck	2/3/2003	0
Aleck	2/12/2003	0
Aleck	2/19/2003	0
Aleck	2/25/2003	0
Aleck	3/7/2003	0
Aleck	3/14/2003	0
Aleck	3/19/2003	0
Aleck	3/25/2003	0
Aleck	4/3/2003	0
Bedrock Park	1/6/2003	0
Bedrock Park	1/20/2003	0
Bedrock Park	1/28/2003	0
Bedrock Park	2/3/2003	0
Bedrock Park	2/12/2003	0
Bedrock Park	2/19/2003	0
Bedrock Park	2/25/2003	0
Bedrock Park	3/7/2003	0
Bedrock Park	3/14/2003	0
Bedrock Park	3/19/2003	0
Bedrock Park	3/25/2003	0
Bedrock Park	4/3/2003	0
Cottonwood	1/6/2003	0
Cottonwood	1/14/2003	1
Cottonwood	1/28/2003	0
Cottonwood	2/3/2003	0
Cottonwood	2/19/2003	0
Cottonwood	2/25/2003	0
Cottonwood	3/14/2003	0
Cottonwood	3/19/2003	0
Cottonwood	3/25/2003	0
Cottonwood	4/3/2003	0
Eye	1/7/2003	0
Eye	1/15/2003	0
Eye	1/27/2003	0
Eye	2/4/2003	0
Eye	2/11/2003	0
Eye	2/19/2003	0
Eye	2/27/2003	0
Eye	3/7/2003	0
Eye	3/14/2003	0
Eye	3/20/2003	0
Eye	3/25/2003	0
Eye	4/3/2003	0
Eye SC	1/15/2003	0
Eye SC	1/27/2003	0

2005 Run

location

ctnwood
hatchditch
hatchditch
hatchditch
hatchditch
bedrock
lauditor
steep
weir
hat ditch
hat ditch
Audit
Hour
tbl mtn
hat ditch
keist
macfar
tbl mtn
hat ditch
robin

Eye SC	2/4/2003	0
Eye SC	2/11/2003	0
Eye SC	2/27/2003	1
Eye SC	3/7/2003	0
Eye SC	3/14/2003	0
Eye SC	3/20/2003	0
Eye SC	3/25/2003	0
Eye SC	4/3/2003	0
Gateway	1/15/2003	0
Gateway	1/27/2003	0
Gateway	2/4/2003	0
Gateway	2/11/2003	0
Gateway	2/19/2003	0
Gateway	2/27/2003	0
Gateway	3/7/2003	0
Gateway	3/14/2003	0
Gateway	3/20/2003	0
Gateway	3/25/2003	0
Gateway	4/3/2003	0
Hatchery	1/6/2003	0
Hatchery	1/14/2003	0
Hatchery	1/20/2003	0
Hatchery	2/3/2003	0
Hatchery	2/12/2003	0
Hatchery	2/19/2003	0
Hatchery	2/25/2003	0
Hatchery	3/7/2003	0
Hatchery	3/14/2003	0
Hatchery	3/19/2003	0
Hatchery	3/25/2003	0
Hatchery	4/3/2003	0
Lower Auditorium	1/6/2003	0
Lower Auditorium	1/14/2003	1
Lower Auditorium	1/28/2003	0
Lower Auditorium	2/3/2003	3
Lower Auditorium	2/12/2003	0
Lower Auditorium	2/19/2003	1
Lower Auditorium	2/25/2003	0
Lower Auditorium	3/7/2003	0
Lower Auditorium	3/14/2003	0
Lower Auditorium	3/19/2003	0
Lower Auditorium	3/25/2003	0
Lower Auditorium	4/3/2003	0
Lower Matthews	3/25/2003	0
Lower Matthews	1/7/2003	0
Lower Matthews	1/14/2003	0
Lower Matthews	1/20/2003	0
Lower Matthews	1/28/2003	0
Lower Matthews	2/3/2003	0
Lower Matthews	2/12/2003	0
Lower Matthews	2/19/2003	0

Lower Matthews	2/25/2003	0
Lower Matthews	3/7/2003	0
Lower Matthews	3/14/2003	0
Lower Matthews	3/19/2003	0
Lower Matthews	4/3/2003	0
Lower Robinson SC	1/15/2003	0
Lower Robinson SC	1/21/2003	0
Lower Robinson SC	1/27/2003	0
Lower Robinson SC	2/4/2003	0
Lower Robinson SC	2/11/2003	0
Lower Robinson SC	2/19/2003	0
Lower Robinson SC	2/27/2003	0
Lower Robinson SC	3/7/2003	0
Lower Robinson SC	3/14/2003	0
Lower Robinson SC	3/20/2003	0
Lower Robinson SC	3/25/2003	0
Lower Robinson SC	4/3/2003	0
Robinson	1/7/2003	0
Robinson	1/15/2003	0
Robinson	2/4/2003	0
Robinson	2/11/2003	0
Robinson	2/19/2003	0
Robinson	2/27/2003	0
Robinson	3/7/2003	0
Robinson	3/14/2003	0
Robinson	3/20/2003	0
Robinson	3/25/2003	0
Robinson	4/3/2003	0
Steep	1/15/2003	0
Steep	1/21/2003	0
Steep	1/27/2003	0
Steep	2/4/2003	0
Steep	2/11/2003	1
Steep	2/19/2003	1
Steep	2/27/2003	0
Steep	3/7/2003	0
Steep	3/14/2003	0
Steep	3/20/2003	0
Steep	3/25/2003	0
Steep	4/3/2003	0
Steep SC	1/7/2003	0
Steep SC	1/15/2003	0
Steep SC	1/21/2003	2
Steep SC	1/27/2003	1
Steep SC	2/4/2003	0
Steep SC	2/11/2003	0
Steep SC	2/19/2003	0
Steep SC	2/27/2003	1
Steep SC	3/7/2003	0
Steep SC	3/14/2003	0
Steep SC	3/20/2003	0

Steep SC	3/25/2003	0
Steep SC	4/3/2003	0
Table Mtn	1/6/2003	0
Table Mtn	1/14/2003	0
Table Mtn	1/20/2003	0
Table Mtn	1/28/2003	1
Table Mtn	2/3/2003	0
Table Mtn	2/12/2003	0
Table Mtn	2/19/2003	0
Table Mtn	2/25/2003	0
Table Mtn	3/7/2003	0
Table Mtn	3/14/2003	0
Table Mtn	3/25/2003	0
Table Mtn	4/3/2003	0
Trailer Park	1/6/2003	0
Trailer Park	1/14/2003	0
Trailer Park	1/20/2003	0
Trailer Park	1/28/2003	0
Trailer Park	2/3/2003	0
Trailer Park	2/12/2003	0
Trailer Park	2/19/2003	0
Trailer Park	2/25/2003	0
Trailer Park	3/7/2003	0
Trailer Park	3/14/2003	0
Trailer Park	3/19/2003	0
Trailer Park	3/25/2003	0
Trailer Park	4/3/2003	0
Upper Auditorium	1/6/2003	0
Upper Auditorium	1/14/2003	0
Upper Auditorium	1/28/2003	0
Upper Auditorium	2/3/2003	0
Upper Auditorium	2/12/2003	0
Upper Auditorium	2/25/2003	0
Upper Auditorium	3/7/2003	0
Upper Auditorium	3/14/2003	0
Upper Auditorium	3/19/2003	0
Upper Auditorium	3/25/2003	0
Upper Auditorium	4/3/2003	0
Upper Hatchery	1/6/2003	0
Upper Hatchery	1/14/2003	2
Upper Hatchery	1/20/2003	0
Upper Hatchery	1/28/2003	0
Upper Hatchery	2/3/2003	0
Upper Hatchery	2/12/2003	0
Upper Hatchery	2/19/2003	0
Upper Hatchery	2/19/2003	1
Upper Hatchery	2/25/2003	0
Upper Hatchery	3/7/2003	0
Upper Hatchery	3/14/2003	0
Upper Hatchery	3/19/2003	0
Upper Hatchery	3/25/2003	0

Upper Hatchery	4/3/2003	0
Upper Herringer	1/9/2003	0
Upper Herringer	1/16/2003	0
Upper Herringer	1/23/2003	1
Upper Herringer	1/30/2003	1
Upper Herringer	2/6/2003	0
Upper Herringer	2/10/2003	0
Upper Herringer	3/18/2003	0
Upper Matthews	1/7/2003	0
Upper Matthews	1/14/2003	0
Upper Matthews	1/20/2003	0
Upper Matthews	1/28/2003	0
Upper Matthews	2/3/2003	1
Upper Matthews	2/12/2003	0
Upper Matthews	2/19/2003	0
Upper Matthews	2/25/2003	0
Upper Matthews	3/7/2003	0
Upper Matthews	3/14/2003	0
Upper Matthews	3/19/2003	0
Upper Matthews	3/25/2003	0
Upper Matthews	4/3/2003	0
Upper Robinson	1/7/2003	0
Upper Robinson	1/15/2003	0
Upper Robinson	1/21/2003	0
Upper Robinson	1/27/2003	1
Upper Robinson	2/4/2003	0
Upper Robinson	2/11/2003	0
Upper Robinson	2/19/2003	0
Upper Robinson	2/27/2003	1
Upper Robinson	3/7/2003	0
Upper Robinson	3/14/2003	0
Upper Robinson	3/20/2003	0
Upper Robinson	3/25/2003	0
Upper Robinson	4/3/2003	0
Upper Robinson SC	1/7/2003	0
Upper Robinson SC	1/15/2003	0
Upper Robinson SC	1/21/2003	0
Upper Robinson SC	1/27/2003	0
Upper Robinson SC	2/4/2003	0
Upper Robinson SC	2/11/2003	0
Upper Robinson SC	2/19/2003	0
Upper Robinson SC	2/27/2003	0
Upper Robinson SC	3/7/2003	0
Upper Robinson SC	3/14/2003	0
Upper Robinson SC	3/20/2003	0
Upper Robinson SC	3/25/2003	0
Upper Robinson SC	4/3/2003	0
Weir	1/7/2003	0
Weir	1/15/2003	0
Weir	1/21/2003	0
Weir	1/27/2003	0

Weir	2/4/2003	0
Weir	2/11/2003	0
Weir	2/19/2003	0
Weir	2/27/2003	0
Weir	3/7/2003	0
Weir	3/14/2003	0
Weir	3/20/2003	0
Weir	3/25/2003	0
Weir	4/3/2003	0
	1/6/2003	0
		24

Cox	1/9/2003	0
Cox	1/23/2003	0
Cox	1/30/2003	1
Cox	2/6/2003	0
Cox	3/18/2003	0
G-95 East SC	1/8/2003	0
G-95 East SC	1/15/2003	0
G-95 East SC	1/22/2003	0
G-95 East SC	1/29/2003	1
G-95 East SC	2/10/2003	0
G-95 East SC	3/18/2003	0
G-95 Main Channel	1/15/2003	0
G-95 Main Channel	1/22/2003	0
G-95 Main Channel	1/29/2003	0
G-95 Main Channel	2/10/2003	0
G-95 Main Channel	3/18/2003	0
G-95 West SC	1/8/2003	0
G-95 West SC	1/15/2003	0
G-95 West SC	1/22/2003	0
G-95 West SC	1/29/2003	0
G-95 West SC	3/18/2003	0
Goose	1/9/2003	0
Goose	1/16/2003	0
Goose	1/22/2003	0
Goose	1/29/2003	0
Goose	2/5/2003	0
Goose	2/10/2003	0
Goose	3/18/2003	0
Gridley East	1/9/2003	0
Gridley East	1/16/2003	0
Gridley East	1/23/2003	0
Gridley East	1/30/2003	1
Gridley East	2/6/2003	0
Gridley East	2/10/2003	0
Gridley East	3/18/2003	0
Hour Bars East	1/15/2003	1
Hour Bars East	1/22/2003	0
Hour Bars East	2/5/2003	0

Hour Bars East	2/10/2003	0
Hour Bars East	3/18/2003	0
Junkyard	1/9/2003	0
Junkyard	1/16/2003	0
Junkyard	1/23/2003	0
Junkyard	1/30/2003	1
Junkyard	2/6/2003	0
Junkyard	2/10/2003	0
Junkyard	3/18/2003	0
Junkyard East	1/30/2003	0
Keister	1/9/2003	0
Keister	1/22/2003	0
Keister	1/29/2003	0
Keister	2/5/2003	0
Keister	2/10/2003	0
Keister	3/18/2003	0
Long Glide	1/16/2003	0
Long Glide	1/23/2003	0
Long Glide	1/30/2003	0
Long Glide	2/6/2003	0
Long Glide	3/18/2003	0
Lower Big	1/16/2003	1
Lower Big	1/22/2003	0
Lower Big	1/29/2003	0
Lower Big	2/5/2003	0
Lower Big	2/10/2003	0
Lower Big	3/18/2003	0
Lower Big Hole East	2/4/2003	0
Lower Big Hole East	2/10/2003	0
Lower Big Hole East	2/10/2003	0
Lower Hour	1/8/2003	0
Lower Hour	1/15/2003	0
Lower Hour	1/22/2003	0
Lower Hour	1/29/2003	0
Lower Hour	2/10/2003	0
Lower Hour	3/18/2003	0
Lower MacFarland	1/9/2003	0
Lower MacFarland	1/16/2003	0
Lower MacFarland	1/22/2003	1
Lower MacFarland	1/29/2003	0
Lower MacFarland	2/10/2003	0
Lower MacFarland	3/18/2003	0
Vance East	1/8/2003	0
Vance East	1/15/2003	0
Vance East	1/21/2003	0
Vance East	1/27/2003	0
Vance East	2/4/2003	0
Vance East	2/10/2003	0
Vance West	1/8/2003	0
Vance West	1/15/2003	0
Vance West	1/21/2003	0

Vance West	2/4/2003	0
Vance West	2/10/2003	0
Vance West	3/18/2003	0
Big	1/9/2003	0
Big	1/16/2003	0
Big	1/22/2003	0
Big	2/5/2003	0
Big	2/10/2003	0
Big	3/18/2003	0
Big Hole East	1/8/2003	0
Big Hole East	1/27/2003	0
		7

Roving #	Date	Number of Redds
Lower Hatchery Ditch	1/6/2003	0
Lower Hatchery Ditch	1/14/2003	1
Lower Hatchery Ditch	1/20/2003	2
Lower Hatchery Ditch	1/28/2003	0
Lower Hatchery Ditch	2/3/2003	2
Lower Hatchery Ditch	2/12/2003	1
Lower Hatchery Ditch	2/25/2003	0
Upper Hatchery Ditch	1/6/2003	3
Upper Hatchery Ditch	1/14/2003	2
Upper Hatchery Ditch	1/28/2003	0
Upper Hatchery Ditch	2/3/2003	0
Upper Hatchery Ditch	2/25/2003	0
Upper Hatchery Ditch	3/25/2003	0

2003 Hat Ditch Total	11
2003 LFC combined	27
2003 River combined	42
2005 Hat ditch Total	21
2005 LFC combined	33
2005 River combined	37

ning Totals

redds

3
1
2
5
4
1
1
1
1
3
2
1
1
2
3
1
2
1
1
1
37

Date	Location	Riffle Position	Distance from bank m	Water Depth m	Water Velocity f/s	Redd Length m
1/6/2005	Hatchery Ditch	Tail	3.5	0.34	1.01	0.9
1/6/2005	Hatchery Ditch	Middle	2.5	0.4	1.9	0.6
1/13/2005	Hatchery Ditch	Head	3	0.32	1.52	1.3
1/13/2005	Hatchery Ditch	Middle	1.5	0.28	0.9	1
1/13/2005	Hatchery Ditch	Head	0.5	0.24	0.845	0.6
1/13/2005	Hatchery Ditch	Head	1.5	0.26	1.55	1.5
1/13/2005	Hatchery Ditch	Middle	2	0.35	1.58	1.75
1/19/2005	Hatchery Ditch	Middle	1	0.32	1.49	1.5
1/19/2005	Lower Auditorium	Middle	9	0.34	2.08	1
1/19/2005	Bedrock Park	Middle	3	0.12	1.05	1
1/19/2005	Lower Hatchery Ditch	Middle	1	0.26	1.06	1
1/19/2005	Hatchery Ditch	Head	4	0.32	1.3	1.1
1/19/2005	Hatchery Ditch		0.5	0.3	1.58	1.25
1/24/2005	Steep	Head	12	0.3	2.5	0.8
1/24/2005	Weir	Head	0	0.3	2	0.5
1/26/2005	Hatchery Ditch	Middle	2.5	0.28	3.38	0.74
1/26/2005	Hatchery Ditch	Tail	5	0.32	0.96	0.7
1/26/2005	Hatchery Ditch	Tail	1.2	0.36	1	0.68
2/2/2005	Hatchery Ditch	Tail	3.5	0.36	0.845	1
2/2/2005	Hatchery Ditch	Middle	4.5	0.2	2.68	0.7
2/2/2005	Lower Auditorium	Tail	0.6	0.22	1.3	0.8
2/4/2005	Lower Hour	Head	0.1	0.18	3.05	1.8
2/9/2005	Table Mtn	Head	0.3	0.7	0.62	1
2/9/2005	Table Mtn	Head		0.66	1.92	1.3
2/9/2005	Upper Hatchery Ditch	Tail	1		1.77	0.7
2/9/2005	Upper Hatchery Ditch	Middle	5	0.28	1.25	1.1
2/9/2005	Upper Hatchery Ditch	Middle	3	0.2	1.18	1.1
2/10/2005	Lower MacFarland	Head	4	0.28	1.45	0.98
2/10/2005	Keister	Head	20	0.52	1.77	0.8
2/10/2005	Lower MacFarland	Head	4	0.46	1.97	1.2
2/15/2005	Table Mtn	Head	1.5	0.48	1.29	0.78
2/15/2005	Upper Robinson	Head	15	0.32	2.18	0.54
2/15/2005	Table Mtn	Tail	2.2	0.3	1.67	0.76
2/23/2005	Cottonwood	Head	4	0.58	3.36	0.65
2/23/2005	Cottonwood	Head	4.5	0.52	4.13	0.68
2/23/2005	Lower Hatchery Ditch	Middle	3.5	0.2	1.45	0.38
2/23/2005	Cottonwood	Head	4	0.47	4.57	0.5
3/9/2005	Table Mtn	Head	1	0.3	1.67	1.5

Redd

Width m

0.7
0.4
1
0.75
0.35
0.75
1.75
1
0.5
1.2
0.6
0.8
0.5
0.7
0.7
0.74
0.8
0.5
0.5
0.5
0.4
0.7
0.6
0.8
0.6
0.6
0.7
0.7
0.3
0.92
0.5
0.42
0.44
0.32
0.44
0.31
0.35
1.5

ID	FID	Shape Survey Week	Date_	_Species	_Nam
	303	1	12/22/2008	Steelhead	Robinson
	304	1	12/22/2008	Steelhead	Steep Side
	305	2	12/29/2008	Steelhead	Lower Hatchery
	306	2	12/29/2008	Steelhead	Hatchery Ditch
	307	4	1/13/2009	Steelhead	Hatchery Ditch
	308	4	1/13/2009	Steelhead	Hatchery Ditch
	309	4	1/13/2009	Steelhead	Hatchery Ditch
	310	4	1/13/2009	Steelhead	Hatchery Ditch
	311	4	1/13/2009	Steelhead	Hatchery Ditch
	312	4	1/13/2009	Steelhead	Moes Ditch
	313	4	1/13/2009	Steelhead	Aleck
	314	4	1/13/2009	Steelhead	Aleck
	315	5	1/20/2009	Steelhead	Hatchery Pipe
	316	5	1/20/2009	Steelhead	Cottonwood
	317	5	1/20/2009	Steelhead	Auditorium
	318	5	1/20/2009	Steelhead	Hatchery Ditch
	319	5	1/20/2009	Steelhead	Steep Side
	320	7	2/4/2009	Steelhead	Hatchery Ditch
	321	7	2/4/2009	Steelhead	Hatchery Ditch
	322	7	2/4/2009	Steelhead	Hatchery Ditch
	323	7	2/4/2009	Steelhead	Lower Auditoriu
	324	7	2/4/2009	Steelhead	Aleck
	325	7	2/4/2009	Steelhead	Robinson
	326	8	2/9/2009	Steelhead	Cottonwood
	327	10	2/25/2009	Steelhead	Hatchery Ditch
	328	10	2/25/2009	Steelhead	Hatchery Ditch
	329	11	3/2/2009	Steelhead	Hatchery Ditch
	330	12	3/10/2009	Steelhead	Keister

week	# of SH REDD	# of SH Observations
1	2	
2	2	1
3	0	
4	8	2
5	5	1
6	0	
7	6	
8	1	1
9	0	
10	2	
11	1	1
12	1	
13	0	
14	0	
15	0	

Substrate - Percent Occurrence

	Percent Occurrence	LG	SM	sand	
Organic Fines/Muc	0.0%	17/27	25/27	10 out of 27	
Sand	37.0%				
Small Gravel	92.5%	62.9	92.5		37
Large Gravel	62.9%				
Cobble	0.0%	*one redd had no substrate data			
Boulder	0.0%				

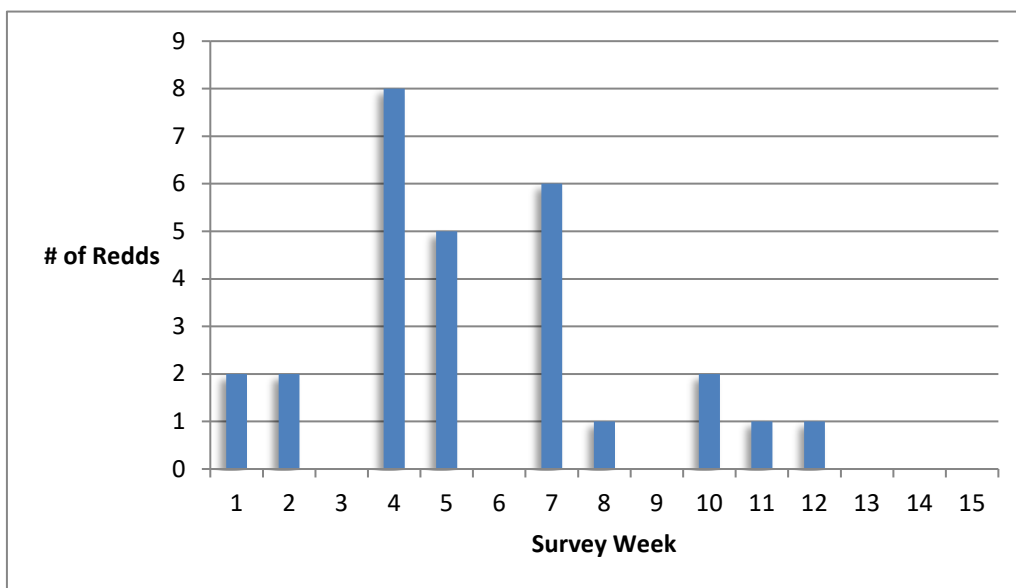
Overhead Cover - Percent Occurrence

	Percent Occurrence	n		0	5
None	82.10%	23/28	4 of 28	2 of 28	
0.0 - 0.5 m	14.30%		82.1	14.3	0.7
0.5 - 2.0 m	0.70%				
Canopy	0.00%				

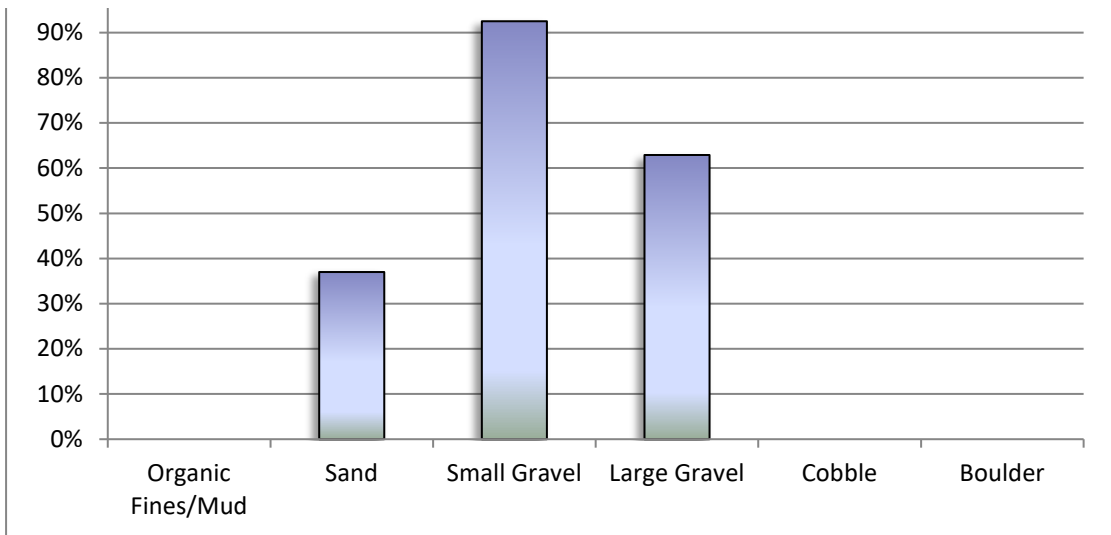
Instream Cover - Percent Occurrence

	Percent Occurrence	n	s	l	a	
None	67.80%		19	3	6	1
SWD	10.70%	67.8		10.7	21.4	3.5
LWD	21.40%					
AV	3.50%					
UB	0.00%					

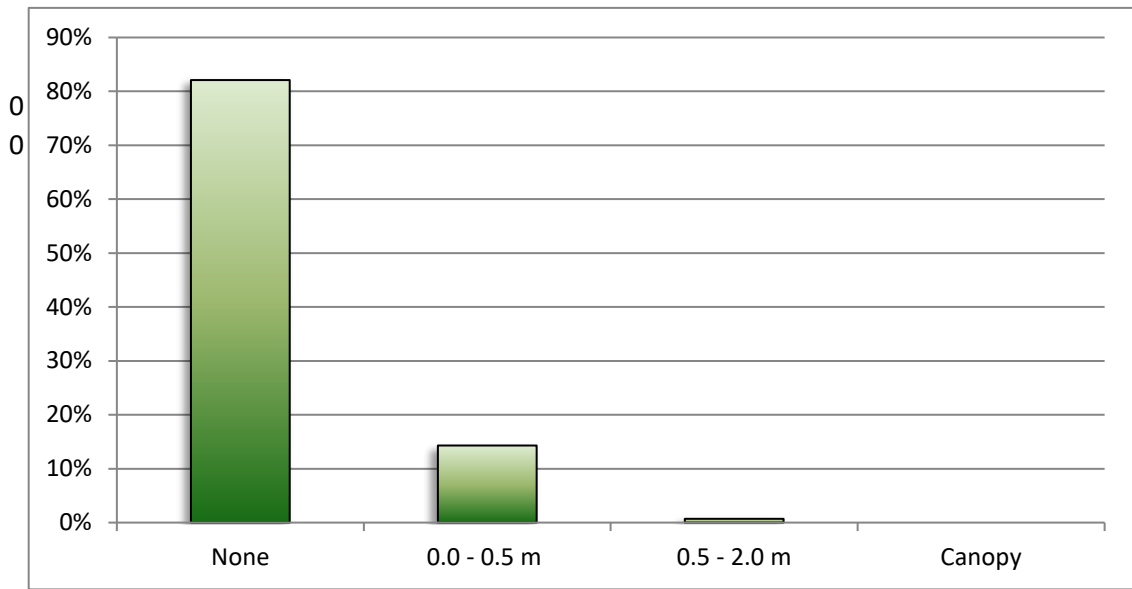
_Posi	_GeoUnit	_# SH	DistBank	UTMN	UTME	GPS North	GPS West	PotLength
Head	Riffle	0	NA	4369566.87	620950.5	39 28 01.8	121 35 38.1	1
Tail	Riffle	0	5.4	4369052.96	620148.5	39 27 45.6	121 36 12.0	1.1
Tail	Glide	0	6.3	4375018.81	623723.4	39 30 57.2	121 33 38.9	0.8
Middle	Glide	1	5.4	4375105.01	624051.4	39 30 59.8	121 33 24.7	1.2
Middle	Riffle	0	1	4375040.53	623809	39 30 57.9	121 33 34.9	0.6
Middle	Riffle	1	3.5	4375063.17	623909.4	39 30 58.6	121 33 30.7	0.5
Head	Riffle	1	1.4	4375079.54	623989.8	39 30 59.0	121 33 27.3	0.8
Head	Riffle	0	1.3	4375097.11	624024	39 30 59.6	121 33 25.9	0.5
Head	Glide	0	3.7	4375106.91	624060.4	39 30 59.9	121 33 24.3	1.02
Tail	Glide	0	7.62	4375049.92	624052.2	39 30 58.1	121 33 24.7	0.5
Tail	Riffle	0	7.6	4371438.39	622177.9	39 29 01.9	121 34 45.0	0.36
Tail	Riffle	0	6.7	4371433.39	622171.6	39 29 01.7	121 34 45.8	0.6
Tail	Glide	0	6.1	4375140.26	624305	39 31 00.9	121 33 14.1	0.96
Head	Riffle	1	NA	4375120.42	624248.7	39 31 00.2	121 33 16.4	NA
Middle	Glide	0	10.7	4375005.1	623702.8	39 30 56.8	121 33 39.4	0.4
Head	Glide	0	2.75	4375094.03	624014.8	39 30 59.5	121 33 26.1	0.4
Middle	Glide	0	1	4369064.85	620149.6	39 27 46.0	121 36 12.0	0.6
Middle	Riffle	0	1	4375060.76	623878.4	39 30 58.5	121 33 32.0	0.5
Middle	Riffle	0	2.25	4375092.82	623998.7	39 30 59.5	121 33 26.9	0.7
Head	Riffle	0	2.5	4375096.37	624022.3	39 30 59.6	121 33 25.9	0.36
Middle	Riffle	0	3.4	NA	NA	NA	NA	0.7
Head	Riffle	0	4.3	4371478.17	622201.5	39 29 03.2	121 34 44.9	0.7
Middle	Riffle	0	25	4369582.31	620941.9	39 28 02.3	121 35 38.9	0.7
Middle	Riffle	1	NA	4375125.46	624247.9	39 31 00.4	121 33 16.9	NA
Middle	Glide	0	3	NA	NA	NA	NA	0.5
Middle	Glide	0	3.5	NA	NA	NA	NA	0.5
Middle	Riffle	1	4	NA	NA	NA	NA	0.5
Middle	Riffle	0	NA	NA	NA	39 24 34.7	121 37 16.9	0.5



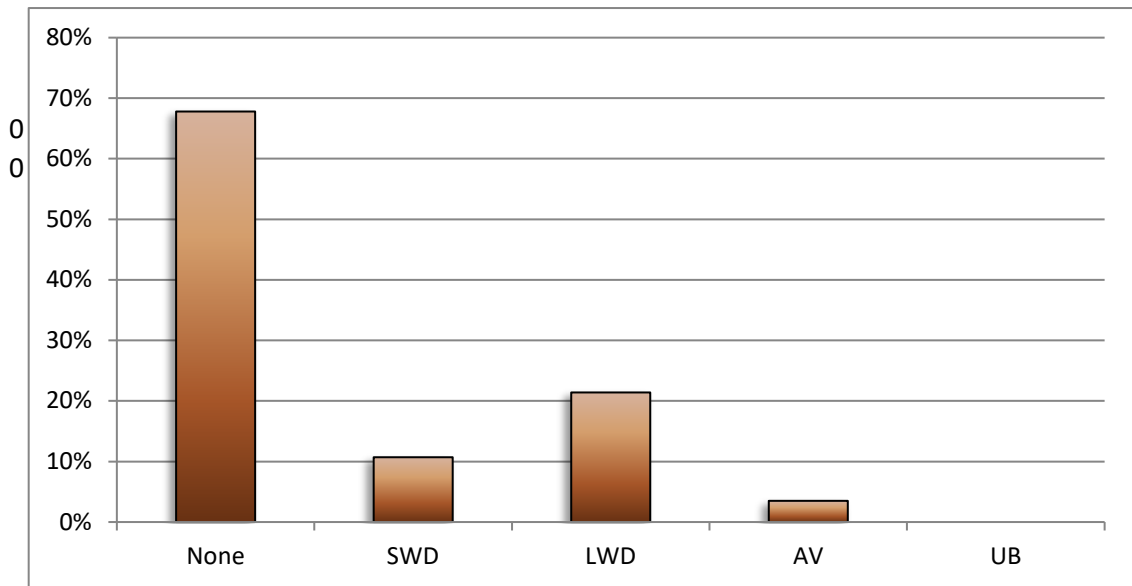
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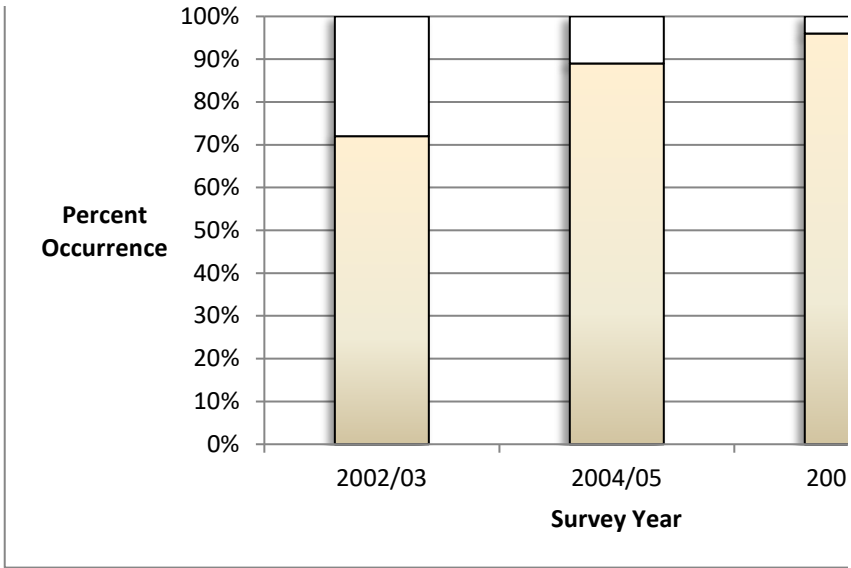
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PotWidth	Depth	Velocity	DomSubstra	SecSubstra	DomOHCovr	SecOHCovr	DomIScove	SecIScover
0.8	0.16	0.54	Small Gravel	Large Gravel	none	none	None	None
0.9	0.27	0.68	Sand	Small Gravel	none	none	None	None
0.5	0.35	0.29	Small Gravel	Sand	none	none	None	None
0.9	0.35	0.2	Large Gravel	Sand	none	none	LWD	None
0.4	0.3	0.72	Sand	Small Gravel	0-.5m above	none	None	None
0.36	0.32	0.5	Small Gravel	Sand	0-.5m above	.5-2m above	LWD	None
0.96	0.28	0.71	Large Gravel	Small Gravel	0-.5m above	none	None	SWD
0.4	0.44	0.47	Small Gravel	Large Gravel	none	none	LWD	None
0.6	0.3	0.36	Large Gravel	Small Gravel	none	none	LWD	Aq. Veg
0.38	0.34	0.31	Small Gravel	Sand	none	none	None	None
0.4	0.28	0.57	Small Gravel	Large Gravel	none	none	None	None
0.5	0.38	0.54	Large Gravel	Small Gravel	none	none	None	None
0.7	0.38	0.81	Large Gravel	Sand	none	none	None	None
NA	NA	NA	NA	NA	none	none	None	None
0.24	0.26	0.48	Small Gravel	Sand	none	none	None	None
0.3	0.15	0.26	Large Gravel	Small Gravel	none	none	None	None
0.5	0.3	0.59	Small Gravel	Large Gravel	none	none	SWD	None
0.4	0.2	0.71	Small Gravel	Large Gravel	none	.5-2m above	None	None
1	0.2	0.68	Small Gravel	Large Gravel	none	none	None	None
0.3	0.24	0.36	Small Gravel	Large Gravel	none	none	LWD	None
0.5	0.26	0.43	Small Gravel	Large Gravel	none	none	None	None
0.5	0.24	0.79	Large Gravel	Small Gravel	none	none	None	None
0.5	0.2	0.36	Small Gravel		none	none	None	None
NA		NA	Small Gravel		none	none	None	None
0.3	0.22	0.32	Small Gravel	Sand	none	none	LWD	None
0.3	0.4	0.2	Large Gravel	Small Gravel	0-.5m above	none	SWD	None
0.35	0.2	0.64	Large Gravel	Small Gravel	none	none	None	None
0.14	0.14	NA	Small Gravel	Sand	none	none	None	None

	2002/03	2004/05	2008/09
LFC	72	89	96
HFC	28	11	4

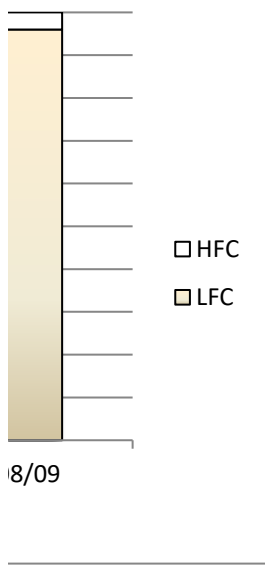
HFC vs LFC SH Redd Location by year



Redd area | Survey Typ Comment

Coordinates are off





<i>Pot Width</i>	
Mean	0.505
Standard Error	0.045987
Median	0.45
Mode	0.5
Standard Deviation	0.234491
Sample Variance	0.054986
Kurtosis	-0.16333
Skewness	0.865859
Range	0.86
Minimum	0.14
Maximum	1
Sum	13.13
Count	26
Confidence Level(95.0%)	0.094713

<i>Pot Length</i>	
Mean	0.6538462
Standard Error	0.0463401
Median	0.6
Mode	0.5
Standard Deviation	0.2362893
Sample Variance	0.0558326
Kurtosis	-0.1596913
Skewness	0.8689857
Range	0.84
Minimum	0.36
Maximum	1.2
Sum	17
Count	26
Confidence Level(95.0%)	0.0954393

<i>Velocity</i>	
Mean	0.5008
Standard Error	0.037251
Median	0.5
Mode	0.36
Standard Deviation	0.186255
Sample Variance	0.034691
Kurtosis	-1.18623
Skewness	-0.01
Range	0.61
Minimum	0.2
Maximum	0.81
Sum	12.52
Count	25
Confidence Level(95.0%)	0.076882

<i>DFB</i>	
Mean	4.9758333
Standard Error	1.0071982
Median	3.6
Mode	1
Standard Deviation	4.9342432
Sample Variance	24.346756
Kurtosis	12.111522
Skewness	3.1231891
Range	24
Minimum	1
Maximum	25
Sum	119.42
Count	24
Confidence Level(95.0%)	2.0835482

Pot Depth

Mean	0.275384615
Standard Error	0.015681746
Median	0.275
Mode	0.2
Standard Deviation	0.079961529
Sample Variance	0.006393846
Kurtosis	-0.657095402
Skewness	0.165430853
Range	0.3
Minimum	0.14
Maximum	0.44
Sum	7.16
Count	26
Confidence Level(95	0.032297161

Date	SurveyWeek	Weather	Visual	ReportedFlow	ActualFlow	AvgTurbidity	AvgTempF	AvgTempC
12/23/2008	1	CLD	Fair	950	963	NA	47.32	8.51
12/31/2008	2	CLD	Good	950	959	NA	48.00	8.89
1/5/2009	3	CLD	Poor	600	629	2.02	47.25	8.47
1/8/2009	3	CLD	Fair	950	971	NA	46.63	8.13
1/15/2009	4	CLR	Good	950	1008	1.53	48.56	9.20
1/21/2009	5	CLD	Good	950	956	1.48	49.14	9.52
1/28/2009	6	CLR	Poor	650	629	3.10	47.48	8.60
1/29/2009	6	CLR	Poor	950	961	4.88	48.49	9.16
2/5/2009	7	RAIN	Poor	950	957	2.39	50.68	10.38
2/10/2009	8	CLD	Poor	950	961	2.06	49.50	9.72
2/16/2009	9	RAIN	Poor	NA	630	6.22	46.76	8.20
2/17/2009	9	NA	NA	950	972	NA	47.30	8.50
2/26/2009	10	NA	NA	950	975	12.26	55.09	12.83
3/3/2009	11	CLD	Poor	800	825	NA	53.29	11.83
3/9/2009	12	CLR	Poor	600	638	6.20	50.27	10.15
3/16/2009	13	CLD	Fair	600	644	3.83	50.31	10.17
3/16/2009	13	CLD	Poor	800	817	3.83	53.85	12.14
3/23/2009	14	CLD	Fair	600	638	4.50	51.69	10.94
3/24/2009	14	CLR	Fair	800	811	4.04	55.17	12.87
3/31/2009	15	CLR	Good	600	631	5.75	56.64	13.69
4/1/2009	15	CLR	Fair	750	814	10.24	59.81	15.45
12/22/2008	1	CLD	Poor	600	629	3.52	49.01	9.45
12/22/2008	1	CLD	Poor	600	629	3.52	49.01	9.45
12/29/2008	2	CLD	Poor	600	629	2.16	48.65	9.25
12/29/2008	2	CLD	Poor	600	629	2.16	48.65	9.25
1/13/2009	4	CLR	Good	600	655	1.62	48.43	9.13
1/13/2009	4	CLR	Good	600	655	1.62	48.43	9.13
1/13/2009	4	CLR	Good	600	655	1.62	48.43	9.13
1/13/2009	4	CLR	Good	600	655	1.62	48.43	9.13
1/13/2009	4	CLR	Good	600	655	1.62	48.43	9.13
1/13/2009	4	CLR	Good	600	655	1.62	48.43	9.13
1/13/2009	4	CLR	Good	600	655	1.62	48.43	9.13
1/13/2009	4	CLR	Good	600	655	1.62	48.43	9.13
1/13/2009	4	CLR	Good	600	655	1.62	48.43	9.13
1/13/2009	4	CLR	Good	600	655	1.62	48.43	9.13
1/20/2009	5	CLR	Fair	600	627	2.09	48.15	8.97
1/20/2009	5	CLR	Fair	600	627	2.09	48.15	8.97
1/20/2009	5	CLR	Fair	600	627	2.09	48.15	8.97
1/20/2009	5	CLR	Fair	600	627	2.09	48.15	8.97
1/20/2009	5	CLR	Fair	600	627	2.09	48.15	8.97
2/4/2009	7	CLD	Poor	650	629	2.48	48.38	9.10
2/4/2009	7	CLD	Poor	650	629	2.48	48.38	9.10
2/4/2009	7	CLD	Poor	650	629	2.48	48.38	9.10
2/4/2009	7	CLD	Poor	650	629	2.48	48.38	9.10
2/4/2009	7	CLD	Poor	650	629	2.48	48.38	9.10
2/4/2009	7	CLD	Poor	650	629	2.48	48.38	9.10
2/9/2009	8	CLD	Fair	600	629	3.06	48.45	9.14
2/25/2009	10	CLD	Poor	650	637	19.60	50.47	10.26

2/25/2009	10	CLD	Poor	650	637	19.60	50.47	10.26
3/2/2009	11	RAIN	Poor	650	647	6.61	51.22	10.68
3/10/2009	12	CLR	Poor	NA	817	3.84	53.44	11.91

Section	Year	Month	Sample	nRedds	Species	InitialNam	Name	CHECK
HFC	2008	December	2008-09	0	None	HFC	HFC	OK
HFC	2008	December	2008-09	0	None	HFC	HFC	OK
LFC	2009	January	2008-09	0	None	LFC	LFC	OK
HFC	2009	January	2008-09	0	None	HFC	HFC	OK
HFC	2009	January	2008-09	0	None	HFC	HFC	OK
HFC	2009	January	2008-09	0	None	HFC	HFC	OK
LFC	2009	January	2008-09	0	None	LFC	LFC	OK
HFC	2009	January	2008-09	0	None	HFC	HFC	OK
HFC	2009	February	2008-09	0	None	HFC	HFC	OK
HFC	2009	February	2008-09	0	None	HFC	HFC	OK
LFC	2009	February	2008-09	0	None	LFC	LFC	OK
HFC	2009	February	2008-09	0	None	HFC	HFC	OK
HFC	2009	February	2008-09	0	None	HFC	HFC	OK
HFC	2009	March	2008-09	0	None	HFC	HFC	OK
LFC	2009	March	2008-09	0	None	LFC	LFC	OK
LFC	2009	March	2008-09	0	None	LFC	LFC	OK
HFC	2009	March	2008-09	0	None	HFC	HFC	OK
LFC	2009	March	2008-09	0	None	LFC	LFC	OK
HFC	2009	March	2008-09	0	None	HFC	HFC	OK
LFC	2009	March	2008-09	0	None	LFC	LFC	OK
HFC	2009	April	2008-09	0	None	HFC	HFC	OK
LFC	2008	December	2008-09	1	Steelhead	Robinson	Robinson	OK
LFC	2008	December	2008-09	1	Steelhead	Steep Side	Steep Side	OK
LFC	2008	December	2008-09	1	Steelhead	Hatchery Ditch	Hatchery Ditch	OK
LFC	2008	December	2008-09	1	Steelhead	Auditorium	Upper Hatchery Ditch	ASK JEFF
LFC	2009	January	2008-09	1	Steelhead	Aleck	Aleck	OK
LFC	2009	January	2008-09	1	Steelhead	Aleck	Aleck	OK
LFC	2009	January	2008-09	1	Steelhead	Hatchery Ditch	Hatchery Ditch	OK
LFC	2009	January	2008-09	1	Steelhead	Hatchery Ditch	Hatchery Ditch	OK
LFC	2009	January	2008-09	1	Steelhead	Hatchery Ditch	Hatchery Ditch	OK
LFC	2009	January	2008-09	1	Steelhead	Hatchery Ditch	Hatchery Ditch	OK
LFC	2009	January	2008-09	1	Steelhead	Hatchery Ditch	Hatchery Ditch	OK
LFC	2009	January	2008-09	1	Steelhead	Hatchery Ditch	Hatchery Ditch	OK
LFC	2009	January	2008-09	1	Steelhead	Moes Ditch	Moes Ditch	OK
LFC	2009	January	2008-09	1	Steelhead	Auditorium	Auditorium	OK
LFC	2009	January	2008-09	1	Steelhead	Cottonwood	Cottonwood	OK
LFC	2009	January	2008-09	1	Steelhead	Hatchery Ditch	Hatchery Ditch	OK
LFC	2009	January	2008-09	1	Steelhead	Hatchery Pipe	Hatchery Pipe	OK
LFC	2009	January	2008-09	1	Steelhead	Steep Side	Steep Side	OK
LFC	2009	February	2008-09	1	Steelhead	Aleck	Aleck	OK
LFC	2009	February	2008-09	1	Steelhead	Hatchery Ditch	Hatchery Ditch	OK
LFC	2009	February	2008-09	1	Steelhead	Hatchery Ditch	Hatchery Ditch	OK
LFC	2009	February	2008-09	1	Steelhead	Hatchery Ditch	Hatchery Ditch	OK
LFC	2009	February	2008-09	1	Steelhead	Upper Auditorium	Lower Auditorium	OK
LFC	2009	February	2008-09	1	Steelhead	Robinson	Robinson	OK
LFC	2009	February	2008-09	1	Steelhead	Cottonwood	Cottonwood	OK
LFC	2009	February	2008-09	1	Steelhead	Hatchery Ditch	Hatchery Ditch	OK

LFC	2009	February	2008-09	1	Steelhead	Hatchery Ditch	Hatchery Ditch	OK
LFC	2009	March	2008-09	1	Steelhead	Hatchery Ditch	Hatchery Ditch	OK
HFC	2009	March	2008-09	1	Steelhead	Keister	Keister	OK

RM	RovNum	Reach	fplcomplex	Posi	GeoUnit	umSteelhe	DistBank	UTMN
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	NA	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	NA	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	NA	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	NA	NA	All	All	NA	NA	NA
NA	NA	NA	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	NA	NA	All	All	NA	NA	NA
NA	NA	NA	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
NA	NA	4	NA	All	All	NA	NA	NA
61.5	6	3	5	Head	Riffle	0	NA	4369567
61.1	NA	3	6	Tail	Riffle	0	5.5	4369053
66.6	1	1	1	Middle	Glide	1	5.5	4375105
66.5	1	1	1	Head	Glide	0	6.3	4375019
63.5	5	2	4	Tail	Riffle	0	7.6	4371438
63.5	5	2	4	Tail	Riffle	0	6.7	4371433
66.6	1	1	1	Middle	Riffle	0	1.0	4375041
66.6	1	1	1	Middle	Riffle	1	3.5	4375063
66.6	1	1	1	Head	Riffle	1	1.4	4375080
66.6	1	1	1	Head	Riffle	0	1.3	4375097
66.6	1	1	1	Head	Glide	0	3.7	4375107
66.5	1	1	1	Tail	Glide	0	7.6	4375050
66.5	1	1	1	Middle	Glide	0	10.7	4375005
66.6	1	1	1	Head	Riffle	1	NA	4375120
66.6	1	1	1	Head	Glide	0	2.8	4375094
66.7	1	1	1	Tail	Glide	0	6.1	4375140
61.1	NA	3	6	Middle	Glide	0	1.0	4369065
63.5	5	2	4	Head	Riffle	0	4.3	4371478
66.6	1	1	1	Middle	Riffle	0	1.0	4375061
66.6	1	1	1	Middle	Riffle	0	2.3	4375093
66.6	1	1	1	Head	Riffle	0	2.5	4375096
66.4	1	1	1	Middle	Riffle	0	3.4	NA
61.5	6	3	5	Middle	Riffle	0	0.3	4369582
66.6	1	1	1	Middle	Riffle	1	NA	4375125
66.6	1	1	1	Middle	Glide	0	3.0	NA

66.6	1	1	1	Middle	Glide	0	3.5	NA
66.6	1	1	1	Middle	Riffle	1	1.2	NA
55	16	4	16	Middle	Riffle	0	NA	NA

UTME	GPS North	GPS West	ReddLength	ReddWidth	PotLength	PotWidth	Depth	Velocity1
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
620950.5	28 01.890	35 38.197	1	0.8	NA	NA	0.16	1.78
620148.5	27 45.629	36 12.084	1.1	0.9	NA	NA	0.27	2.24
624051.4	30 59.891	33 24.750	1.2	0.9	NA	NA	0.35	0.65
623723.4	30 57.266	33 38.542	0.8	0.5	NA	NA	0.35	0.95
622177.9	29 01.956	34 45.611	0.36	0.4	NA	NA	0.28	1.88
622171.6	29 01.797	34 45.877	0.6	0.5	NA	NA	0.38	1.78
623809	30 57.926	33 34.943	0.6	0.4	NA	NA	0.3	2.36
623909.4	30 58.608	33 30.724	0.5	0.36	NA	NA	0.32	1.64
623989.8	30 59.097	33 27.346	0.8	0.96	NA	NA	0.28	2.34
624024	30 59.649	33 25.901	0.5	0.4	NA	NA	0.44	1.54
624060.4	30 59.948	33 24.371	1.02	0.6	NA	NA	0.3	1.18
624052.2	30 58.104	33 24.755	0.5	0.38	NA	NA	0.34	1.02
623702.8	30 56.832	33 39.412	0.4	0.24	NA	NA	0.26	1.57
624248.7	31 00.288	33 16.479	NA	NA	NA	NA	NA	NA
624014.8	30 59.554	33 26.291	0.4	0.3	NA	NA	0.15	0.85
624305	31 00.902	33 14.111	0.96	0.7	NA	NA	0.38	2.65
620149.6	27 46.014	36 12.030	0.6	0.5	NA	NA	0.3	1.93
622201.5	29 03.234	34 44.596	0.7	0.5	NA	NA	0.24	2.58
623878.4	30 58.546	33 32.022	0.5	0.4	NA	NA	0.2	2.34
623998.7	30 59.523	33 26.966	0.7	1	NA	NA	0.2	2.24
624022.3	30 59.626	33 25.976	0.36	0.3	NA	NA	0.24	1.18
NA	NA	NA	0.7	0.5	NA	NA	0.26	1.40
620941.9	28 02.395	35 38.548	0.7	0.5	NA	NA	0.2	1.16
624247.9	31 00.452	33 16.510	NA	NA	NA	NA	NA	NA
NA	29 0 59.992	33 24.423	0.5	0.3	NA	NA	0.22	1.06

NA	NA	NA	0.5	0.3	NA	NA	0.4	0.66
NA	NA	NA	0.5	0.35	NA	NA	0.2	2.10
NA	9 24 34.74	37 16.927	0.5	0.14	NA	NA	0.14	NA

Unit1	Velocity	Unit	_Mud_Silt	_Sand	_Gravel	_Pebble	_Cobble	_Boulder
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
ft/s	0.54	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.68	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.20	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.29	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.57	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.54	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.72	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.50	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.71	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.47	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.36	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.31	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.48	m/s	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
ft/s	0.26	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.81	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.59	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.79	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.71	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.68	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.36	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.43	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.36	m/s	NA	NA	NA	NA	NA	NA
ft/s	NA	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.32	m/s	NA	NA	NA	NA	NA	NA

ft/s	0.20	m/s	NA	NA	NA	NA	NA	NA
ft/s	0.64	m/s	NA	NA	NA	NA	NA	NA
ft/s	NA	m/s	NA	NA	NA	NA	NA	NA

omSubstra	omSubstr1	mSubstra2	SecSubstra	verhead_1	verhead_2	verhead_2	mOHCover	ecOHCover
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA
Small Gravel	3	NA	Large Gravel	NA	NA	NA	none	none
Sand	2	NA	Small Gravel	NA	NA	NA	none	none
Large Gravel	4	NA	Sand	NA	NA	NA	none	none
Small Gravel	3	NA	Sand	NA	NA	NA	none	none
Small Gravel	3	NA	Large Gravel	NA	NA	NA	none	none
Large Gravel	4	NA	Small Gravel	NA	NA	NA	none	none
Sand	2	NA	Small Gravel	NA	NA	NA	-.5m above	none
Small Gravel	3	NA	Sand	NA	NA	NA	-.5m above	-2m above
Large Gravel	4	NA	Small Gravel	NA	NA	NA	-.5m above	none
Small Gravel	3	NA	Large Gravel	NA	NA	NA	none	none
Large Gravel	4	NA	Small Gravel	NA	NA	NA	none	none
Small Gravel	3	NA	Sand	NA	NA	NA	none	none
Small Gravel	3	NA	Sand	NA	NA	NA	none	none
NA	NA	NA	NA	NA	NA	NA	none	none
Large Gravel	4	NA	Small Gravel	NA	NA	NA	none	none
Large Gravel	4	NA	Sand	NA	NA	NA	none	none
Small Gravel	3	NA	Large Gravel	NA	NA	NA	none	none
Large Gravel	4	NA	Small Gravel	NA	NA	NA	none	none
Small Gravel	3	NA	Large Gravel	NA	NA	NA	none	-2m above
Small Gravel	3	NA	Large Gravel	NA	NA	NA	none	none
Small Gravel	3	NA	Large Gravel	NA	NA	NA	none	none
Small Gravel	3	NA	Large Gravel	NA	NA	NA	none	none
Small Gravel	3	NA	Large Gravel	NA	NA	NA	none	none
Small Gravel	3	NA	Large Gravel	NA	NA	NA	none	none
Small Gravel	3	NA		NA	NA	NA	none	none
Small Gravel	3	NA		NA	NA	NA	none	none
Small Gravel	3	NA	Sand	NA	NA	NA	none	none

Large Gravel	4	NA	Small Gravel	NA	NA	NA	NA	0.5m above	none
Large Gravel	4	NA	Small Gravel	NA	NA	NA	NA	none	none
Small Gravel	3	NA	Sand	NA	NA	NA	NA	none	none

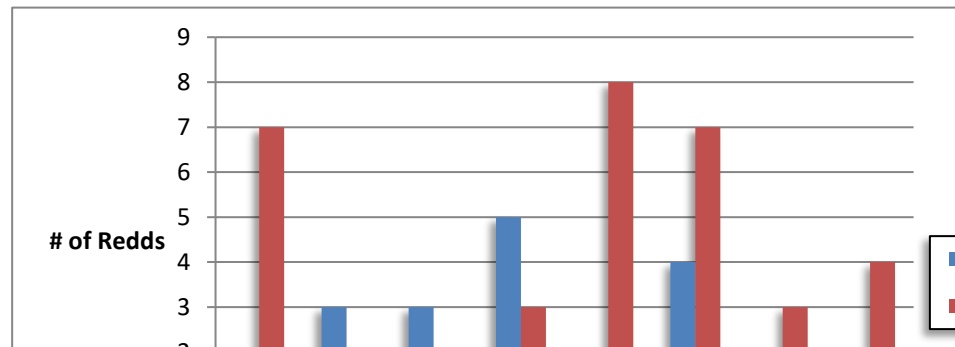
NA	NA	NA	NA	SWD	None	Roving	ent velocity calculation	
NA	NA	NA	NA	None	None	Roving		
NA	NA	NA	NA	None	None	Roving	Coordinates are off	

	Redd # for the week	Date	Riffle Name	Redd Type	Riffle Position	Geomorphic Unit	# of SH Present	Distance from bank (m)	Zone 10 NAD 83 Northing	Zone 10 NAD 83 Easting	Pot Length (m)	Pot Width (m)	Depth (m)	Velocity (m/s)
	1	1	1/4/2010	Lower Auditorium	CHN	Head	Riffle	0	4.00	4374996.0	623852.0	0.74	0.66	0.40
2	2	1/4/2010	Lower Auditorium	CHN	Middle	Riffle	0	4.00	4374995.0	623829.0	1.10	0.90	0.58	0.35
3	3	1/4/2010	Lower Trailer Park	UK	Head	Riffle	0	5.00	4372642.0	622096.0	0.84	0.58	0.48	0.59
4	4	1/4/2010	Lower Robinson	CHN	Middle	Riffle	0	13.00	4369528.5	620622.8	0.95	0.80	0.41	0.56
5	5	1/4/2010	Lower Robinson	CHN	Middle	Riffle	0	2.50	4369444.2	620498.7	0.74	0.52	0.42	0.63
6	6	1/6/2010	Middle Hour	CHN	Head	Riffle	0		4364028.0	618174.5	1.05	0.81	0.54	0.93
7	7	1/6/2010	Lower Macfarland	CHN	Middle	Glide	0	11.00	4359154.7	617769.5	0.82	0.74	0.71	
8	8	1/6/2010	Lower Macfarland	CHN	Middle	Glide	0	10.00	4359153.2	617768.2	0.89	0.71	0.49	
9	1	1/13/2010	Cottonwood	Test	Head	Riffle	0	0.50	4375128.9	624270.2				
10	2	1/13/2010	Cottonwood	CHN	Middle	Riffle	0	5.00	4375122.8	624269.7	1.30	0.40	0.50	
11	3	1/13/2010	Hatchery	Test	Middle	Riffle	0	13.00	4375041.1	624297.2			0.24	1.10
12	4	1/13/2010	Lower Auditorium	Test	Middle	Riffle	0	30.00	4374978.4	623828.2			0.52	0.48
13	5	1/13/2010	Lower Auditorium	SH	Middle	Riffle	1	5.00	4374996.9	623759.1	0.52	0.48	0.26	0.36
14	6	1/13/2010	Hatchery Ditch	SH	Middle	Riffle	0	1.20	4375061.4	623902.1	0.74	0.56	0.22	0.54
15	7	1/13/2010	Lower Trailer Park	UK	Middle	Glide	0	5.80	4372640.8	622097.4	1.46	1.80	0.46	0.73
16	8	1/14/2010	Upper Big Hole East	Test	Middle	Riffle	0	18.00	4366272.2	617393.0				
17	9	1/14/2010	Upper Big Hole East	Test	Middle	Riffle	0	17.00	4366276.2	617393.0				
18	10	1/14/2010	Upper Big Hole East	Test	Middle	Riffle	0	15.00	4366279.6	617389.0				
19	11	1/14/2010	G-95 East	SH	Head	Riffle	0	17.00	4365525.7	617939.0	0.86	0.58	0.36	0.55
20	1	1/19/2010	Hatchery Ditch	SH	Middle	Riffle	0	3.00	4375092.4	624009.6	1.02	0.86	0.08	0.25
21	2	1/19/2010	Hatchery Ditch	SH	Middle	Riffle	0	3.00	4375096.6	624021.0	1.06	1.02	0.40	0.21
22	3	1/19/2010	Moes Ditch	SH	Middle	Riffle	0	0.50	4375041.0	623905.5	0.86	0.72	0.14	0.26
23	1	1/25/2010	Lower Auditorium	Test	Middle	Riffle	0	16.00	4374991.1	623809.3			0.35	0.37
24	2	1/25/2010	Lower Auditorium	CHN	Middle	Riffle	0	30.00	4374959.6	623757.7	2.00	0.85	0.38	0.50
25	3	1/25/2010	Lower Auditorium	CHN	Middle	Riffle	0	26.00	4374969.8	623769.0	1.00	0.75	0.36	0.27
26	4	1/25/2010	Lower Auditorium	Test	Middle	Riffle	0	30.00	4374955.5	623735.6			0.69	0.57
27	5	1/25/2010	Lower Auditorium	Test	Middle	Riffle	0	35.00	4374967.0	623737.3			0.55	0.27
28	6	1/25/2010	Hatchery Ditch	SH	Middle	Riffle	0	3.10	4375044.4	623839.7	0.95	0.60	0.31	0.54
29	7	1/25/2010	Hatchery Ditch	SH	Middle	Riffle	0	1.00	4375091.0	624006.4	0.60	0.40	0.16	0.90
30	8	1/25/2010	Moes Ditch	SH	Middle	Riffle	0	2.00	4375043.2	623939.7	0.90	0.50	0.30	0.32
31	9	1/25/2010	Aleck	Test	Head	Riffle	0	5.00	4371490.7	622211.1			0.58	0.37
32	10	1/26/2010	G-95	Test	Head	Riffle	0	18.00	4365452.9	617945.1			0.45	0.61

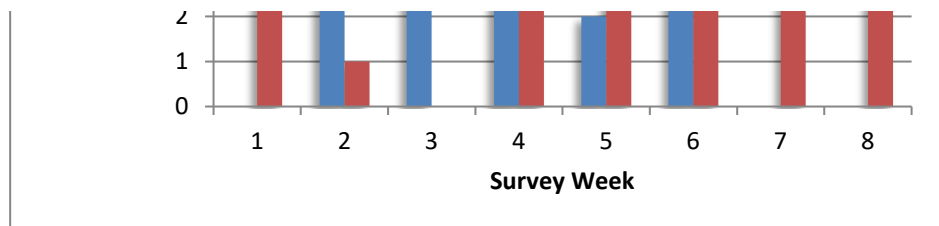
33	11	1/26/2010	G-95	CHN	Head	Riffle	0	20.00	4365451.2	617937.8	0.95	0.70	0.64	0.58
34	12	1/26/2010	Upper Hour	SH	Middle	Riffle	0	6.00	4364505.9	618326.9	0.68	0.45	0.25	0.52
35	13	1/26/2010	Upper Hour	SH	Middle	Riffle	0	3.00	4364503.3	618329.3	0.60	0.60	0.20	0.46
36	14	1/26/2010	Gridley East	Test	Middle	Riffle	0	3.00	4357119.5	618076.8				
37	15	1/26/2010	Gridley East	Test	Middle	Riffle	0	3.00	4357112.5	618075.9				
38	16	1/27/2010	Developing	Test	Head	Riffle	0	15.00	4359222.7	617360.1			0.44	0.85
39	17	1/27/2010	Developing	Test	Head	Riffle	0	15.00	4359224.6	617352.0			0.52	0.94
40	1	2/1/2010	Hatchery	CHN	Middle	Riffle	0	10.00	4375029.1	624247.5	1.10	0.85	0.34	0.45
41	2	2/1/2010	Lower Auditorium	Test	Middle	Riffle	0	20.00	4374982.4	623841.1			0.50	0.61
42	3	2/1/2010	Lower Auditorium	Test	Middle	Riffle	0	11.00	4374990.9	623826.4			0.57	0.53
43	4	2/1/2010	Lower Auditorium	Test	Middle	Riffle	0	30.00	4374971.5	623828.5			0.56	0.49
44	5	2/1/2010	Lower Auditorium	CHN	Middle	Riffle	0	6.00	4374997.8	623819.6			0.45	0.35
45	6	2/1/2010	Lower Auditorium	CHN	Middle	Riffle	0	7.00	4374994.4	623809.1	1.10	0.65	0.42	0.44
46	7	2/1/2010	Lower Auditorium	Test	Middle	Riffle	0	20.00	4374981.1	623788.4			0.59	0.58
47	8	2/1/2010	Lower Auditorium	Test	Middle	Riffle	0	16.00	4374985.1	623787.2			0.50	0.31
48	9	2/1/2010	Lower Auditorium	CHN	Middle	Riffle	0	2.50	4375000.2	623787.9	0.85	0.48	0.40	0.34
49	10	2/1/2010	Lower Auditorium	CHN	Middle	Riffle	0	30.00	4374999.4	623789.2	0.90	0.53	0.40	0.37
50	11	2/1/2010	Lower Auditorium	Test	Middle	Riffle	0	2.50	4374999.0	623781.0			0.36	0.54
51	12	2/1/2010	Lower Auditorium	UK	Middle	Riffle	0	27.00	4374974.8	623782.6	0.80	0.65	0.30	0.41
52	13	2/1/2010	Lower Auditorium	Test	Tail	Riffle	0	8.00	4374996.9	623752.2			0.20	0.09
53	14	2/1/2010	Lower Auditorium	CHN	Middle	Riffle	0	26.00	4374970.9	623756.3	1.00	0.70	0.60	0.25
54	15	2/1/2010	Lower Auditorium	Test	Middle	Riffle	0	23.00	4374976.0	623755.3			0.68	0.42
55	16	2/1/2010	Lower Auditorium	Test	Tail	Riffle	0	32.00	4374977.5	623758.1			0.49	0.17
56	17	2/1/2010	Moes Ditch	SH	Middle	Riffle	0	2.00	4375040.8	623926.5	0.50	0.40	0.25	0.47
57	18	2/1/2010	Upper Auditorium	CHN	Test	Riffle	0	5.00	4375050.5	624052.9	1.00	0.75	0.65	0.39
58	19	2/1/2010	Lower Hatchery Ditch	SH	Test	Glide	0	4.00	4375012.9	623711.6	0.48	0.33	0.26	0.51
59	20	2/2/2010	Lower Robinson	Test	Middle	Riffle	0		4369482.9	620536.5			0.65	0.58
60	21	2/2/2010	Lower Robinson	CHN	Middle	Riffle	0	22.00	4369444.6	620473.9	1.06	1.02	0.42	0.87
61	22	2/3/2010	Upper Herringer	UK	Middle	Riffle	0	10.00	4353128.4	618967.9	0.38	0.30	0.32	0.64
62	23	2/3/2010	Upper Herringer	UK	Middle	Riffle	0	8.00	4353135.1	618968.5	0.28	0.26	0.28	0.61
63	1	2/8/2010	Lower Auditorium	CHN	Middle	Riffle	0		4374981.0	623804.2	0.98	0.80	0.34	0.66
64	2	2/8/2010	Lower Auditorium	CHN	Middle	Riffle	0	25.00	4374975.3	623752.3	0.80	0.60	0.50	0.64
65	3	2/8/2009	Mathews	Test	Head	Riffle	0	17.00	4372430.1	622188.5			0.60	0.50
66	4	2/8/2010	Mathews	Test	Head	Riffle	0	10.00	4372425.4	622198.4			0.52	0.24

67	5	2/8/2010	Mathews	SH	Head	Glide	0	8.00	4372423.4	622199.6	0.40	0.30	0.34	0.52
68	6	2/8/2010	Mathews	CHN	Head	Glide	0	6.00	4372417.0	622204.3	0.70	0.50	0.44	0.21
69	7	2/8/2010	Mathews	SH	Head	Glide	0	9.00	4372412.8	622199.5	0.40	0.20	0.30	0.62
70	8	2/8/2010	Mathews	Test	Head	Riffle	0	16.00	4372404.9	622193.5			0.56	0.52
71	9	2/8/2010	Mathews	Test	Head	Riffle	0	8.00	4372404.0	622202.3			0.36	0.46
72	10	2/8/2010	Mathews	CHN	Head	Riffle	0	13.00	4372404.4	622197.3	0.80	0.60	0.40	0.43
73	11	2/8/2010	Mathews	CHN	Head	Riffle	0	22.00	4372374.2	622190.2	0.90	0.70	0.44	0.67
74	12	2/8/2010	Aleck	SH	Head	Glide	0	2.00	4371498.3	622209.9	0.52	0.46	0.40	0.35
75	13	2/8/2010	Steep Main	Test	Middle	Riffle	0	9.00	4369117.0	620075.0				
76	14	2/8/2010	Steep Side	Test	Middle	Riffle	0	2.00	4369051.5	620150.4			0.40	0.64
77	15	2/8/2010	Steep Side	SH	Middle	Riffle	0	2.00	4369055.3	620150.8	0.30	0.25	0.32	0.52
78	16	2/8/2010	Steep Side	Test	Middle	Riffle	0	0.50	4369070.3	620148.6			0.20	0.34
79	17	2/8/2010	Gateway	CHN	Head	Riffle	0	6.50	4368362.7	618535.8	0.60	0.50	1.08	0.71
80	18	2/9/2010	Vance East	CHN	Head	Riffle	0	3.50	4367758.7	617187.0	1.30	0.70	0.36	0.60
81	19	2/9/2010	Vance East	Test	Head	Riffle	0	7.20	4367758.3	617182.7			0.64	0.51
82	1	2/16/2010	Lower Auditorium	Test	Middle	Riffle	0	21.00	4374966.2	623853.8			0.48	0.70
83	2	2/16/2010	Lower Auditorium	UK	Middle	Riffle	0	13.00	4374981.0	623766.7	0.76	0.72	0.60	0.32
84	3	2/16/2010	Lower Robinson	CHN	Middle	Riffle	0	14.00	4369509.1	620565.8	0.52	0.58	0.62	0.32
85	4	2/16/2010	Steep	CHN	Head	Riffle	0	6.50	4369122.0	620078.4	0.90	0.68	0.52	0.55
86	5	2/16/2010	Eye Side	CHN	Head	Riffle	0	3.00	4368523.0	619346.6	0.66	0.55	1.00	0.63
87	1	2/22/2010	Hatchery	CHN	Middle	Riffle	0	9.00	4375033.7	624272.8	0.58	0.52	0.32	1.02
88	2	2/22/2010	Hatchery	CHN	Middle	Riffle	0	6.00	4375028.7	624275.4	0.78	0.52	0.40	0.32
89	3	2/22/2010	Lower Auditorium	CHN	Middle	Riffle	0	9.50	4374990.3	623791.9	0.98	0.82	0.52	0.35
90	4	2/22/2010	Mathews	CHN	Head	Riffle	0	16.00	4372385.1	622193.2			0.62	0.44

	SH	CHN
1	0	7
2	3	1
3	3	0
4	5	3
5	2	8
6	4	7



7 0 3
8 0 4



Dominant Substrate	Secondary Substrate	Dominant Overhead Cover	Secondary Overhead Cover	Dominant Instream Cover	Secondary Instream Cover
Large Gravel	Small Gravel	None	None	None	None
Large Gravel	Cobble	None	None	None	None
Small Gravel	Sand	None	None	None	None
Cobble	Small Gravel	None	None	None	None
Large Gravel	Small Gravel	.5-2m above	Canopy	None	None
Large Gravel	Small Gravel	None	None	None	None
Large Gravel	Small Gravel	None	None	None	None
Large Gravel	Small Gravel	None	None	None	None
Large Gravel	Small Gravel	0-.5m above	.5-2m above	LWD	Undercut Bank
Large Gravel	Large Gravel	None	None	None	None
Large Gravel	Cobble	None	None	None	None
Large Gravel	Cobble	None	None	None	None
Large Gravel	Small Gravel	None	None	None	None
Cobble	Small Gravel	.5-2m above	Canopy	SWD	Undercut Bank
Large Gravel	Small Gravel	None	Canopy	None	None
Cobble	Large Gravel	None	None	None	None
Cobble	Small Gravel	None	None	None	None
Cobble	Small Gravel	None	None	None	None
Large Gravel	Small Gravel	None	None	None	None
Large Gravel	Small Gravel	Canopy	.5-2m above	None	None
Large Gravel	Small Gravel	Canopy	None	None	None
Large Gravel	Small Gravel	.5-2m above	0-.5m above	SWD	Undercut Bank
Large Gravel	Cobble	None	None	None	None
Large Gravel	Small Gravel	None	None	None	None
Cobble	Large Gravel	None	None	None	None
Large Gravel	Small Gravel	None	None	None	None
Large Gravel	Small Gravel	None	None	None	None
Large Gravel	Small Gravel	Canopy	.5-2m above	None	None
Small Gravel	Large Gravel	.5-2m above	Canopy	None	None
Large Gravel	Small Gravel	None	None	SWD	Aq. Veg
Large Gravel	Cobble	None	None	None	None
Large Gravel	Cobble	None	None	None	None

Cobble	Large Gravel	None	None	None	None
Cobble	Small Gravel	None	None	None	None
Cobble	Sand	None	None	None	None
Small Gravel	Large Gravel	None	None	LWD	None
Small Gravel	Large Gravel	None	None	None	None
Small Gravel	Large Gravel	None	None	None	None
Small Gravel	Large Gravel	None	None	None	None
Cobble	Large Gravel	None	None	None	None
Cobble	Large Gravel	None	None	None	None
Cobble	Large Gravel	None	None	None	None
Cobble	Small Gravel	None	None	None	None
Large Gravel	Cobble	None	None	None	None
Large Gravel	Cobble	None	None	None	None
Cobble	Large Gravel	None	None	None	None
Large Gravel	Small Gravel	None	None	SWD	None
Cobble	Large Gravel	None	None	None	None
Cobble	Large Gravel	None	None	None	None
Large Gravel	Small Gravel	None	None	None	SWD
Large Gravel	Small Gravel	None	None	None	None
Large Gravel	Cobble	None	None	None	None
Cobble	Small Gravel	None	None	None	None
Large Gravel	Cobble	None	None	None	None
Sand	Small Gravel	None	None	None	None
Large Gravel	Small Gravel	None	None	None	None
Cobble	Large Gravel	None	None	None	None
Large Gravel	Small Gravel	None	None	None	Canopy
Large Gravel	Small Gravel	None	None	None	None
Cobble	Small Gravel	None	None	None	None
Large Gravel	Small Gravel	None	None	None	None
Large Gravel	Small Gravel	None	None	None	None
Cobble	Large Gravel	None	None	None	None
Large Gravel	Small Gravel	None	None	None	None
Cobble	Large Gravel	None	None	None	None
Cobble	Small Gravel	None	None	None	None

Large Gravel	Small Gravel	None	None	None	None
Cobble	Small Gravel	None	None	None	None
Large Gravel	Small Gravel	None	None	None	None
Large Gravel	Small Gravel	None	None	None	None
Large Gravel	Small Gravel	None	None	None	None
Large Gravel	Cobble	None	None	None	None
Cobble	Small Gravel	None	None	None	None
Large Gravel	Sand	None	Canopy	None	None
Cobble	Large Gravel	None	None	None	None
Large Gravel	Small Gravel	Canopy	.5-2m above	None	None
Large Gravel	Small Gravel	.5-2m above	Canopy	None	None
Small Gravel	Sand	.5-2m above	Canopy	SWD	Undercut Bank
Cobble	Large Gravel	None	None	None	None
Cobble	Large Gravel	None	None	None	None
Cobble	Large Gravel	None	None	None	None
Cobble	Large Gravel	None	None	None	None
Large Gravel	Small Gravel	None	None	None	None
Cobble	Large Gravel	None	None	None	None
Cobble	Large Gravel	None	None	None	None
Cobble	Small Gravel	Canopy	.5-2m above	None	None
Cobble	Large Gravel	None	None	None	None
Cobble	Small Gravel	None	None	None	None
Cobble	Small Gravel	None	None	None	None
Large Gravel	Small Gravel	None	None	None	None

■ SH

■ CHN

Redd # for the week	Date	Riffle Name	Redd Type	Riffle Position	Geomorphic Unit	# of SH Present	Distance from bank (m)	Zone 10 NAD 83 Northing
1	1/4/2010	Lower Auditorium	CHN	Head	Riffle	0	4.00	4374996.0
2	1/4/2010	Lower Auditorium	CHN	Middle	Riffle	0	4.00	4374995.0
4	1/4/2010	Lower Robinson	CHN	Middle	Riffle	0	13.00	4369528.5
5	1/4/2010	Lower Robinson	CHN	Middle	Riffle	0	2.50	4369444.2
6	1/6/2010	Middle Hour	CHN	Head	Riffle	0		4364028.0
7	1/6/2010	Lower Macfarlane	CHN	Middle	Glide	0	11.00	4359154.7
8	1/6/2010	Lower Macfarlane	CHN	Middle	Glide	0	10.00	4359153.2
2	1/13/2010	Cottonwood	CHN	Middle	Riffle	0	5.00	4375122.8
2	1/25/2010	Lower Auditorium	CHN	Middle	Riffle	0	30.00	4374959.6
3	1/25/2010	Lower Auditorium	CHN	Middle	Riffle	0	26.00	4374969.8
11	1/26/2010	G-95	CHN	Head	Riffle	0	20.00	4365451.2
1	2/1/2010	Hatchery	CHN	Middle	Riffle	0	10.00	4375029.1
5	2/1/2010	Lower Auditorium	CHN	Middle	Riffle	0	6.00	4374997.8
6	2/1/2010	Lower Auditorium	CHN	Middle	Riffle	0	7.00	4374994.4
9	2/1/2010	Lower Auditorium	CHN	Middle	Riffle	0	2.50	4375000.2
10	2/1/2010	Lower Auditorium	CHN	Middle	Riffle	0	30.00	4374999.4
14	2/1/2010	Lower Auditorium	CHN	Middle	Riffle	0	26.00	4374970.9
18	2/1/2010	Upper Auditorium	CHN	Tail	Riffle	0	5.00	4375050.5
21	2/2/2010	Lower Robinson	CHN	Middle	Riffle	0	22.00	4369444.6
1	2/8/2010	Lower Auditorium	CHN	Middle	Riffle	0		4374981.0
2	2/8/2010	Lower Auditorium	CHN	Middle	Riffle	0	25.00	4374975.3
6	2/8/2010	Mathews	CHN	Head	Glide	0	6.00	4372417.0
10	2/8/2010	Mathews	CHN	Head	Riffle	0	13.00	4372404.4
11	2/8/2010	Mathews	CHN	Head	Riffle	0	22.00	4372374.2
17	2/8/2010	Gateway	CHN	Head	Riffle	0	6.50	4368362.7
18	2/9/2010	Vance East	CHN	Head	Riffle	0	3.50	4367758.7
3	2/16/2010	Lower Robinson	CHN	Middle	Riffle	0	14.00	4369509.1
4	2/16/2010	Steep	CHN	Head	Riffle	0	6.50	4369122.0
5	2/16/2010	Eye Side	CHN	Head	Riffle	0	3.00	4368523.0
1	2/22/2010	Hatchery	CHN	Middle	Riffle	0	9.00	4375033.7
2	2/22/2010	Hatchery	CHN	Middle	Riffle	0	6.00	4375028.7
3	2/22/2010	Lower Auditorium	CHN	Middle	Riffle	0	9.50	4374990.3
4	2/22/2010	Mathews	CHN	Head	Riffle	0	16.00	4372385.1
5	1/13/2010	Lower Auditorium	SH	Middle	Riffle	1	5.00	4374996.9
6	1/13/2010	Hatchery Ditch	SH	Middle	Riffle	0	1.20	4375061.4
11	1/14/2010	G-95 East	SH	Head	Riffle	0	17.00	4365525.7
1	1/19/2010	Hatchery Ditch	SH	Middle	Riffle	0	3.00	4375092.4
2	1/19/2010	Hatchery Ditch	SH	Middle	Riffle	0	3.00	4375096.6
3	1/19/2010	Moes Ditch	SH	Middle	Riffle	0	0.50	4375041.0
6	1/25/2010	Hatchery Ditch	SH	Middle	Riffle	0	3.10	4375044.4
7	1/25/2010	Hatchery Ditch	SH	Middle	Riffle	0	1.00	4375091.0
8	1/25/2010	Moes Ditch	SH	Middle	Riffle	0	2.00	4375043.2
12	1/26/2010	Upper Hour	SH	Middle	Riffle	0	6.00	4364505.9
13	1/26/2010	Upper Hour	SH	Middle	Riffle	0	3.00	4364503.3
17	2/1/2010	Moes Ditch	SH	Middle	Riffle	0	2.00	4375040.8

19	2/1/2010	Lower Hatchery D	SH	Tail	Glide	0	4.00	4375012.9
5	2/8/2010	Mathews	SH	Head	Glide	0	8.00	4372423.4
7	2/8/2010	Mathews	SH	Head	Glide	0	9.00	4372412.8
12	2/8/2010	Aleck	SH	Head	Glide	0	2.00	4371498.3
15	2/8/2010	Steep Side	SH	Middle	Riffle	0	2.00	4369055.3
1	1/13/2010	Cottonwood	Test	Head	Riffle	0	0.50	4375128.9
3	1/13/2010	Hatchery	Test	Middle	Riffle	0	13.00	4375041.1
4	1/13/2010	Lower Auditorium	Test	Middle	Riffle	0	30.00	4374978.4
8	1/14/2010	Upper Big Hole E	Test	Middle	Riffle	0	18.00	4366272.2
9	1/14/2010	Upper Big Hole E	Test	Middle	Riffle	0	17.00	4366276.2
10	1/14/2010	Upper Big Hole E	Test	Middle	Riffle	0	15.00	4366279.6
1	1/25/2010	Lower Auditorium	Test	Middle	Riffle	0	16.00	4374991.1
4	1/25/2010	Lower Auditorium	Test	Middle	Riffle	0	30.00	4374955.5
5	1/25/2010	Lower Auditorium	Test	Middle	Riffle	0	35.00	4374967.0
9	1/25/2010	Aleck	Test	Head	Riffle	0	5.00	4371490.7
10	1/26/2010	G-95	Test	Head	Riffle	0	18.00	4365452.9
14	1/26/2010	Gridley East	Test	Middle	Riffle	0	3.00	4357119.5
15	1/26/2010	Gridley East	Test	Middle	Riffle	0	3.00	4357112.5
16	1/27/2010	Developing	Test	Head	Riffle	0	15.00	4359222.7
17	1/27/2010	Developing	Test	Head	Riffle	0	15.00	4359224.6
2	2/1/2010	Lower Auditorium	Test	Middle	Riffle	0	20.00	4374982.4
3	2/1/2010	Lower Auditorium	Test	Middle	Riffle	0	11.00	4374990.9
4	2/1/2010	Lower Auditorium	Test	Middle	Riffle	0	30.00	4374971.5
7	2/1/2010	Lower Auditorium	Test	Middle	Riffle	0	20.00	4374981.1
8	2/1/2010	Lower Auditorium	Test	Middle	Riffle	0	16.00	4374985.1
11	2/1/2010	Lower Auditorium	Test	Middle	Riffle	0	2.50	4374999.0
13	2/1/2010	Lower Auditorium	Test	Tail	Riffle	0	8.00	4374996.9
15	2/1/2010	Lower Auditorium	Test	Middle	Riffle	0	23.00	4374976.0
16	2/1/2010	Lower Auditorium	Test	Tail	Riffle	0	32.00	4374977.5
20	2/2/2010	Lower Robinson	Test	Middle	Riffle	0		4369482.9
3	2/8/2009	Mathews	Test	Head	Riffle	0	17.00	4372430.1
4	2/8/2010	Mathews	Test	Head	Riffle	0	10.00	4372425.4
8	2/8/2010	Mathews	Test	Head	Riffle	0	16.00	4372404.9
9	2/8/2010	Mathews	Test	Head	Riffle	0	8.00	4372404.0
13	2/8/2010	Steep Main	Test	Middle	Riffle	0	9.00	4369117.0
14	2/8/2010	Steep Side	Test	Middle	Riffle	0	2.00	4369051.5
16	2/8/2010	Steep Side	Test	Middle	Riffle	0	0.50	4369070.3
19	2/9/2010	Vance East	Test	Head	Riffle	0	7.20	4367758.3
1	2/16/2010	Lower Auditorium	Test	Middle	Riffle	0	21.00	4374966.2
3	1/4/2010	Lower Trailer Park	UK	Head	Riffle	0	5.00	4372642.0
7	1/13/2010	Lower Trailer Park	UK	Middle	Glide	0	5.80	4372640.8
12	2/1/2010	Lower Auditorium	UK	Middle	Riffle	0	27.00	4374974.8
22	2/3/2010	Upper Herringe	UK	Middle	Riffle	0	10.00	4353128.4
23	2/3/2010	Upper Herringe	UK	Middle	Riffle	0	8.00	4353135.1
2	2/16/2010	Lower Auditorium	UK	Middle	Riffle	0	13.00	4374981.0

Zone 10 NAD 83 Easting	Pot Length (m)	Pot Width (m)	Depth (m)	Velocity (m/s)	Dominant Substrate	Secondary Substrate	Dominant Overhead Cover	Secondary Overhead Cover	Dominant Instream Cover
623852.0	0.74	0.66	0.40	0.45	Large Gravel	Small Gravel	None	None	None
623829.0	1.10	0.90	0.58	0.35	Large Gravel	Cobble	None	None	None
620622.8	0.95	0.80	0.41	0.56	Cobble	Small Gravel	None	None	None
620498.7	0.74	0.52	0.42	0.63	Large Gravel	Small Gravel	.5-2m above	Canopy	None
618174.5	1.05	0.81	0.54	0.93	Large Gravel	Small Gravel	None	None	None
617769.5	0.82	0.74	0.71		Large Gravel	Small Gravel	None	None	None
617768.2	0.89	0.71	0.49		Large Gravel	Small Gravel	None	None	None
624269.7	1.30	0.40	0.50		Large Gravel	Large Gravel	None	None	None
623757.7	2.00	0.85	0.38	0.50	Large Gravel	Small Gravel	None	None	None
623769.0	1.00	0.75	0.36	0.27	Cobble	Large Gravel	None	None	None
617937.8	0.95	0.70	0.64	0.58	Cobble	Large Gravel	None	None	None
624247.5	1.10	0.85	0.34	0.45	Cobble	Large Gravel	None	None	None
623819.6			0.45	0.35	Large Gravel	Cobble	None	None	None
623809.1	1.10	0.65	0.42	0.44	Large Gravel	Cobble	None	None	None
623787.9	0.85	0.48	0.40	0.34	Cobble	Large Gravel	None	None	None
623789.2	0.90	0.53	0.40	0.37	Cobble	Large Gravel	None	None	None
623756.3	1.00	0.70	0.60	0.25	Cobble	Small Gravel	None	None	None
624052.9	1.00	0.75	0.65	0.39	Cobble	Large Gravel	None	None	None
620473.9	1.06	1.02	0.42	0.87	Cobble	Small Gravel	None	None	None
623804.2	0.98	0.80	0.34	0.66	Cobble	Large Gravel	None	None	None
623752.3	0.80	0.60	0.50	0.64	Large Gravel	Small Gravel	None	None	None
622204.3	0.70	0.50	0.44	0.21	Cobble	Small Gravel	None	None	None
622197.3	0.80	0.60	0.40	0.43	Large Gravel	Cobble	None	None	None
622190.2	0.90	0.70	0.44	0.67	Cobble	Small Gravel	None	None	None
618535.8	0.60	0.50	1.08	0.71	Cobble	Large Gravel	None	None	None
617187.0	1.30	0.70	0.36	0.60	Cobble	Large Gravel	None	None	None
620565.8	0.52	0.58	0.62	0.32	Cobble	Large Gravel	None	None	None
620078.4	0.90	0.68	0.52	0.55	Cobble	Large Gravel	None	None	None
619346.6	0.66	0.55	1.00	0.63	Cobble	Small Gravel	Canopy	.5-2m above	None
624272.8	0.58	0.52	0.32	1.02	Cobble	Large Gravel	None	None	None
624275.4	0.78	0.52	0.40	0.32	Cobble	Small Gravel	None	None	None
623791.9	0.98	0.82	0.52	0.35	Cobble	Small Gravel	None	None	None
622193.2			0.62	0.44	Large Gravel	Small Gravel	None	None	None
623759.1	0.52	0.48	0.26	0.36	Large Gravel	Small Gravel	None	None	None
623902.1	0.74	0.56	0.22	0.54	Cobble	Small Gravel	.5-2m above	Canopy	SWD
617939.0	0.86	0.58	0.36	0.55	Large Gravel	Small Gravel	None	None	None
624009.6	1.02	0.86	0.08	0.25	Large Gravel	Small Gravel	Canopy	.5-2m above	None
624021.0	1.06	1.02	0.40	0.21	Large Gravel	Small Gravel	Canopy	None	None
623905.5	0.86	0.72	0.14	0.26	Large Gravel	Small Gravel	.5-2m above	0-.5m above	SWD
623839.7	0.95	0.60	0.31	0.54	Large Gravel	Small Gravel	Canopy	.5-2m above	None
624006.4	0.60	0.40	0.16	0.90	Small Gravel	Large Gravel	.5-2m above	Canopy	None
623939.7	0.90	0.50	0.30	0.32	Large Gravel	Small Gravel	None	None	SWD
618326.9	0.68	0.45	0.25	0.52	Cobble	Small Gravel	None	None	None
618329.3	0.60	0.60	0.20	0.46	Cobble	Sand	None	None	None
623926.5	0.50	0.40	0.25	0.47	Large Gravel	Small Gravel	None	None	None

623711.6	0.48	0.33	0.26	0.51	Large Gravel	Small Gravel	None	None	None
622199.6	0.40	0.30	0.34	0.52	Large Gravel	Small Gravel	None	None	None
622199.5	0.40	0.20	0.30	0.62	Large Gravel	Small Gravel	None	None	None
622209.9	0.52	0.46	0.40	0.35	Large Gravel	Sand	None	Canopy	None
620150.8	0.30	0.25	0.32	0.52	Large Gravel	Small Gravel	.5-2m above	Canopy	None
624270.2					Large Gravel	Small Gravel	0-.5m above	.5-2m above	LWD
624297.2			0.24	1.10	Large Gravel	Cobble	None	None	None
623828.2			0.52	0.48	Large Gravel	Cobble	None	None	None
617393.0					Cobble	Large Gravel	None	None	None
617393.0					Cobble	Small Gravel	None	None	None
617389.0					Cobble	Small Gravel	None	None	None
623809.3			0.35	0.37	Large Gravel	Cobble	None	None	None
623735.6			0.69	0.57	Large Gravel	Small Gravel	None	None	None
623737.3			0.55	0.27	Large Gravel	Small Gravel	None	None	None
622211.1			0.58	0.37	Large Gravel	Cobble	None	None	None
617945.1			0.45	0.61	Large Gravel	Cobble	None	None	None
618076.8					Small Gravel	Large Gravel	None	None	LWD
618075.9					Small Gravel	Large Gravel	None	None	None
617360.1			0.44	0.85	Small Gravel	Large Gravel	None	None	None
617352.0			0.52	0.94	Small Gravel	Large Gravel	None	None	None
623841.1			0.50	0.61	Cobble	Large Gravel	None	None	None
623826.4			0.57	0.53	Cobble	Large Gravel	None	None	None
623828.5			0.56	0.49	Cobble	Small Gravel	None	None	None
623788.4			0.59	0.58	Cobble	Large Gravel	None	None	None
623787.2			0.50	0.31	Large Gravel	Small Gravel	None	None	SWD
623781.0			0.36	0.54	Large Gravel	Small Gravel	None	None	None
623752.2			0.20	0.09	Large Gravel	Cobble	None	None	None
623755.3			0.68	0.42	Large Gravel	Cobble	None	None	None
623758.1			0.49	0.17	Sand	Small Gravel	None	None	None
620536.5			0.65	0.58	Large Gravel	Small Gravel	None	None	None
622188.5			0.60	0.50	Cobble	Large Gravel	None	None	None
622198.4			0.52	0.24	Cobble	Small Gravel	None	None	None
622193.5			0.56	0.52	Large Gravel	Small Gravel	None	None	None
622202.3			0.36	0.46	Large Gravel	Small Gravel	None	None	None
620075.0					Cobble	Large Gravel	None	None	None
620150.4			0.40	0.64	Large Gravel	Small Gravel	Canopy	.5-2m above	None
620148.6			0.20	0.34	Small Gravel	Sand	.5-2m above	Canopy	SWD
617182.7			0.64	0.51	Cobble	Large Gravel	None	None	None
623853.8			0.48	0.70	Cobble	Large Gravel	None	None	None
622096.0	0.84	0.58	0.48	0.59	Small Gravel	Sand	None	None	None
622097.4	1.46	1.80	0.46	0.73	Large Gravel	Small Gravel	None	Canopy	None
623782.6	0.80	0.65	0.30	0.41	Large Gravel	Small Gravel	None	None	None
618967.9	0.38	0.30	0.32	0.64	Large Gravel	Small Gravel	None	None	None
618968.5	0.28	0.26	0.28	0.61	Large Gravel	Small Gravel	None	None	None
623766.7	0.76	0.72	0.60	0.32	Large Gravel	Small Gravel	None	None	None

Redd # for the week		Date	Riffle Name	Redd Type	Riffle Position	Geomorphic Unit	# of SH Present	Distance from bank (m)
5	X	1/13/2010	Lower Auditorium	SH	Middle	Riffle	1	5.00
6	X	1/13/2010	Hatchery Ditch	SH	Middle	Riffle	0	1.20
11	X	1/14/2010	G-95 East	SH	Head	Riffle	0	17.00
1	X	1/19/2010	Hatchery Ditch	SH	Middle	Riffle	0	3.00
2	X	1/19/2010	Hatchery Ditch	SH	Middle	Riffle	0	3.00
3	X	1/19/2010	Moes Ditch	SH	Middle	Riffle	0	0.50
6	X	1/25/2010	Hatchery Ditch	SH	Middle	Riffle	0	3.10
7	X	1/25/2010	Hatchery Ditch	SH	Middle	Riffle	0	1.00
8	X	1/25/2010	Moes Ditch	SH	Middle	Riffle	0	2.00
12	X	1/26/2010	Upper Hour	SH	Middle	Riffle	0	6.00
13	X	1/26/2010	Upper Hour	SH	Middle	Riffle	0	3.00
17	X	2/1/2010	Moes Ditch	SH	Middle	Riffle	0	2.00
19	X	2/1/2010	Lower Hatchery Ditch	SH	Tail	Glide	0	4.00
5	X	2/8/2010	Mathews	SH	Head	Glide	0	8.00
7	X	2/8/2010	Mathews	SH	Head	Glide	0	9.00
12	X	2/8/2010	Aleck	SH	Head	Glide	0	2.00
15	X	2/8/2010	Steep Side	SH	Middle	Riffle	0	2.00

Averages
Maximum
Minimum
Std Dev.

4.223529
17.00
0.50
4.05471

Zone 10 NAD 83 Northing	Zone 10 NAD 83 Easting	Pot Length (m)	Pot Width (m)	Depth (m)	Velocity (m/s)	Dominant Substrate	Secondary Substrate	Dominant Overhead Cover
4374996.9	623759.1	0.52	0.48	0.26	0.36	Large Gravel	Small Gravel	None
4375061.4	623902.1	0.74	0.56	0.22	0.54	Cobble	Small Gravel	.5-2m above
4365525.7	617939.0	0.86	0.58	0.36	0.55	Large Gravel	Small Gravel	None
4375092.4	624009.6	1.02	0.86	0.08	0.25	Large Gravel	Small Gravel	Canopy
4375096.6	624021.0	1.06	1.02	0.40	0.21	Large Gravel	Small Gravel	Canopy
4375041.0	623905.5	0.86	0.72	0.14	0.26	Large Gravel	Small Gravel	.5-2m above
4375044.4	623839.7	0.95	0.60	0.31	0.54	Large Gravel	Small Gravel	Canopy
4375091.0	624006.4	0.60	0.40	0.16	0.90	Small Gravel	Large Gravel	.5-2m above
4375043.2	623939.7	0.90	0.50	0.30	0.32	Large Gravel	Small Gravel	None
4364505.9	618326.9	0.68	0.45	0.25	0.52	Cobble	Small Gravel	None
4364503.3	618329.3	0.60	0.60	0.20	0.46	Cobble	Sand	None
4375040.8	623926.5	0.50	0.40	0.25	0.47	Large Gravel	Small Gravel	None
4375012.9	623711.6	0.48	0.33	0.26	0.51	Large Gravel	Small Gravel	None
4372423.4	622199.6	0.40	0.30	0.34	0.52	Large Gravel	Small Gravel	None
4372412.8	622199.5	0.40	0.20	0.30	0.62	Large Gravel	Small Gravel	None
4371498.3	622209.9	0.52	0.46	0.40	0.35	Large Gravel	Sand	None
4369055.3	620150.8	0.30	0.25	0.32	0.52	Large Gravel	Small Gravel	.5-2m above

0.67 0.51 0.27 0.46
 1.06 1.02 0.40 0.90
 0.3 0.2 0.08 0.21
 0.23527 0.21238 0.08878 0.166099

Secondary Overhead Cover	Dominant Instream Cover	Secondary Instream Cover
None	None	None
Canopy	SWD	Undercut Bank
None	None	None
.5-2m above	None	None
None	None	None
0-.5m above	SWD	Undercut Bank
.5-2m above	None	None
Canopy	None	None
None	SWD	Aq. Veg
None	None	None
None	None	None
None	None	Canopy
None	None	None
None	None	None
Canopy	None	None
Canopy	None	None

sq. dev	Velocity (m/s)		
0.0001	0.36	-0.10	0.01
0.0025	0.54	0.08	0.0064
0.0081	0.55	0.09	0.0081
0.0361	0.25	-0.21	0.0441
0.0169	0.21	-0.25	0.0625
0.0169	0.26	-0.20	0.04
0.0016	0.54	0.08	0.0064
0.0121	0.90	0.44	0.1936
0.0009	0.32	-0.14	0.0196
0.0004	0.52	0.06	0.0036
0.0049	0.46	0.00	0
0.0004	0.47	0.01	1E-04
0.0001	0.51	0.05	0.0025
0.0049	0.52	0.06	0.0036
0.0009	0.62	0.16	0.0256
0.0169	0.35	-0.11	0.0121
0.0025	0.52	0.06	0.0036

0.44

0.027613

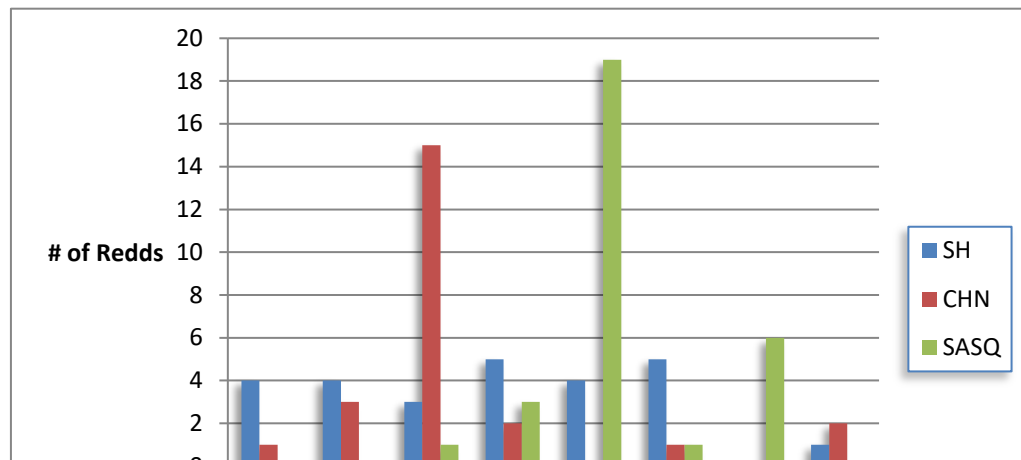
Redd # for Week	Date	Species	Riffle Name	Riffle Position	Geomorphic Unit	# of Steelhead on Redd	Distance From Bank	UTM Northing	UTM Easting	Pot Length	Pot Width	Depth	Velocity	Dominant Substrate
	1/3/2011	Steelhead	Upper Hatchery Ditch	Tail	Riffle	0	3.5	4375099.24	624123.256	0.95	0.45	0.14	0.09	Small Gravel
	1/3/2011	Steelhead	Upper Hatchery Ditch	Middle	Riffle	0	4.5	4375040.8	623837.4	1	0.5	0.3	0.53	Small Gravel
	1/3/2011	Steelhead	Upper Hatchery Ditch	Middle	Riffle	0	2.5	4375053.7	623876.3	0.7	0.44	0.28	0.38	Small Gravel
	1/3/2011	Steelhead	Moes Ditch	Middle	Riffle	0	1.7	4375033.8	623885.5	0.9	0.5	0.3	0.39	Large Gravel
	1/3/2011	Test	Hatchery Riffle		Riffle	0	0	4375037.29	624246.452	0	0	0	0	
	1/3/2011	UNK	Lower Hatchery Ditch	Tail	Glide	0	0	4375014.4	623710.99	0	0	0	0	
	1/3/2011	UNK	Lower Hatchery Ditch	Tail	Glide	0	0	4375014.07	623708.3	0	0	0	0	
	1/3/2011	Test	Lower Hatchery Ditch			0	0	4375008.28	623713.69	0	0	0	0	
	1/3/2011	UNK	Lower Hatchery Ditch			0	0	4375020.38	623722.92	0	0	0	0	
	1/3/2011	Test	Lower Auditorium			0	0	4374988.48	623711.48	0	0	0	0	
	1/3/2011	CHN	Lower Hatchery Ditch	Tail		0	0	4375017.86	623739.61	0	0	0	0	
	1/3/2011	UNK	Moes Ditch			0	0	4375045.47	623933.027	0	0	0	0	
	1/3/2011	UNK	Moes Ditch			0	0	4375041.83	623932.133	0	0	0	0	
	1/3/2011	Test	Lower Auditorium			0	0	4374998.77	623844.082	0	0	0	0	
	1/4/2011	Test	Steep	Head	Riffle	0	0	4369119.91	620082.731	0	0	0	0	
	1/11/2011	Steelhead	Lower Robinson	Head	Riffle	0	3.9	4369478.56	620551.818	0.46	0.38	0.3	0.34	Cobble
	1/11/2011	Steelhead	Hatchery Ditch	Middle	Riffle	0	3.5	4375037	623823	0.54	0.38	0.26	0.37	Large Gravel
	1/11/2011	Steelhead	Hatchery Ditch	Middle	Riffle	0	2.2	4375043	623845	0.3	0.24	0.24	0.7	Small Gravel
	1/11/2011	Steelhead	Moes Ditch	Middle	Riffle	0	0.5	4375043	623897.5	0.34	0.38	0.26	0.47	Large Gravel
	1/11/2011	Test	Hatchery Ditch			0	0	4375050.25	623856.645	0	0	0	0	
	1/11/2011	Test	Lower Auditorium			0	0	4374979.58	623783.161	0	0	0	0	
	1/11/2011	Test	Moes Ditch			0	0	4375038.45	623902.194	0	0	0	0	
	1/11/2011	CHN	Moes Ditch			0	0	4375039.68	623924.635	0	0	0	0	
	1/11/2011	CHN	Lower Auditorium			0	0	4374987.6	623819.567	0	0	0	0	
	1/11/2011	Test	Lower Auditorium			0	0	4374985.45	623737.989	0	0	0	0	
	1/11/2011	Test	Lower Auditorium			0	0	4374977.54	623739.519	0	0	0	0	
	1/11/2011	CHN	Aleck	Head	Riffle	0	0	4371498.9	622212.903	0	0	0	0	
	1/12/2011	UNK	Big Bar	Head	Riffle	0	0	4360609.23	618210.966	0	0	0	0	
	1/18/2011	CHN	Table Mountain Riffle	Head	Riffle	0	0	4375243	624521	0	0	0	0	
	1/18/2011	CHN	Hatchery Riffle	Middle	Riffle	0	0	4375028	624284	0	0	0	0	
	1/18/2011	CHN	Lower Auditorium		Riffle	0	0	4374997	623857	0	0	0	0	
	1/18/2011	Test	Lower Auditorium			0	0	4374982	623819.8	0	0	0	0	

	1/18/2011	CHN	Lower Auditorium			0	0	4374985.9	623804	0	0	0	0	
	1/18/2011	CHN	Lower Auditorium			0	0	4374994	623806.3	0	0	0	0	
	1/18/2011	CHN	Lower Auditorium			0	0	4374992.6	623785.7	0	0	0	0	
	1/18/2011	Test	Lower Auditorium			0	0	4374985.4	623774.5	0	0	0	0	
	1/18/2011	CHN	Lower Auditorium			0	0	4374962.9	623756.4	0	0	0	0	
	1/18/2011	CHN	Lower Auditorium			0	0	4374962.9	623757.3	0	0	0	0	
	1/18/2011	CHN	Lower Auditorium			0	0	4374998.1	623758	0	0	0	0	
	1/18/2011	Steelhead	Hatchery Ditch	Middle	Riffle	0	0.8	4375067.5	623929.2	0.4	0.4	0.22	0.33	Large Gravel
	1/18/2011	Steelhead	Hatchery Ditch	Middle	Riffle	0	2.2	4375091.6	624001.6	0.35	0.3	0.22	0.16	Small Gravel
	1/18/2011	Steelhead	Hatchery Ditch	Middle	Riffle	0	0.6	4375093.8	624000.5	0.45	0.38	0.24	0.26	Large Gravel
	1/18/2011	Test	Hatchery Ditch			0	0	4375069.52	623936.833	0	0	0	0	
	1/18/2011	Test	Moes Ditch			0	0	4375043.61	623933.731	0	0	0	0	
	1/18/2011	CHN	Moes Ditch			0	0	4375037.2	623900.3	0	0	0	0	
	1/18/2011	Test	Moes Ditch			0	0	4375037.78	623900.868	0	0	0	0	
	1/18/2011	CHN	Moes Ditch			0	0	4375038	623924.4	0	0	0	0	
	1/18/2011	Test	Moes Ditch			0	0	4375035.9	623902.4	0	0	0	0	
	1/18/2011	UNK	Moes Ditch			0	0	4375033.2	623079.8	0	0	0	0	
	1/18/2011	CHN	Bedrock Riffle			0	0	4374726.7	623079.8	0	0	0	0	
	1/18/2011	CHN	Upper Trailer Park Riffle			0	0	4372832.9	622134	0	0	0	0	
	1/18/2011	Test	Upper Robinson			0	0	4369586.5	620938.6	0	0	0	0	
	1/19/2011	SASU	Gridley East	Head	Riffle	0	5.5	4356976.96	617969.914	0.45	0.32	0.2	0.36	Small Gravel
	1/19/2011	CHN	Steep Riffle	Head	Riffle	0	0	4369119.3	620086.1	0	0	0	0	
	1/19/2011	CHN	Gateway Riffle	Tail	Glide	0	0	4368402.2	618301.4	0	0	0	0	
	1/24/2011	Steelhead	Lower Hatchery Ditch	Tail	Glide	0	5.9	4375015.64	623734.502	1	0.6	0.48	0.34	Small Gravel
	1/24/2011	Steelhead	Lower Hatchery Ditch	Tail	Glide	0	10	4375009.95	623731.21	0.9	0.48	0.4	0.53	Small Gravel
	1/24/2011	Steelhead	Hatchery Ditch	Tail	Riffle	2	1.8	4375051.8	623867.389	0.53	0.42	0.52	0.3	Small Gravel
	1/24/2011	CHN	Lower Auditorium	Middle	Riffle	0	0	0	0	0	0	0	0	
	1/24/2011	Steelhead	Hatchery Ditch	Middle	Riffle	0	1	4375070.7	623937.01	0.48	0.5	0.3	0.44	Large Gravel
	1/24/2011	Test	Moes Ditch			0	0	4375042.69	623938.238	0	0	0	0	
	1/24/2011	Test	Hatchery Ditch			0	0	4375099.02	624019.781	0	0	0	0	
	1/24/2011	Steelhead	Moes Ditch	Middle	Riffle	1	2.1	4375050	624022.001	0.5	0.42	0.28	0.47	Cobble
	1/24/2011	CHN	Moes Ditch	Head		0	0	4375054.03	624040.347	0	0	0	0	
	1/24/2011	UNK	Lower Auditorium	Middle	Riffle	0	0	4374989.63	623797.099	0	0	0	0	
	1/25/2011	Test	Upper Robinson	Middle	Riffle	0	0	4369587	620952.229	0	0	0	0	

	1/25/2011	UNK	Lower Robinson	Head	Glide	0	0	4369529.98	620639.117	0	0	0	0	
	1/25/2011	SASU	Lower Robinson	Middle	Riffle	0	1.9	4369439.14	620495.515	0.29	0.26	0.3	0.55	Small Gravel
	1/25/2011	SASU	Developing	Middle	Glide	0	20	4359217.85	617361.794	0.6	0.38	0.68	0.84	Small Gravel
	1/25/2011	SASU	Developing	Middle	Glide	0	23	4359218.7	617357.011	0.42	0.3	0.68	0.8	Small Gravel
	2/2/2011	Steelhead	Hatchery Ditch	Middle	Riffle	1	1.2	4375087.47	623992.875	0.55	0.4	0.22	0.24	Small Gravel
	2/2/2011	Steelhead	Hatchery Ditch	Middle	Riffle	1	6	4375097.11	624008.935	0.3	0.26	0.08	0.32	Small Gravel
	2/2/2011	Steelhead	Moes Ditch	Middle	Riffle	4	6	4375037.35	623899.647	0.4	0.36	0.26	0.32	Small Gravel
	2/2/2011	Steelhead	Aleck	Head	Riffle	1	12	4371476.35	622199.293	0.46	0.36	0.3	1.16	Large Gravel
	2/3/2011	SASU	Herringer	Middle		0	0	4353159.63	618954.558	0	0	0	0	
	2/3/2011	SASU	Herringer	Head		0	0	4353230.09	618895.773	0	0	0	0	
	2/3/2011	SASU	Herringer	Head		0	0	4353218.45	618900.166	0	0	0	0	
	2/3/2011	SASU	Herringer	Head		0	0	4353212.69	618900.506	0	0	0	0	
	2/3/2011	SASU	Cox	Middle		0	0	4355196.99	617969.177	0	0	0	0	
	2/3/2011	SASU	Lower Macfarland	Middle		0	0	4359152.82	617769.188	0	0	0	0	
	2/3/2011	SASU	Lower Macfarland	Middle		0	0	4359153.56	617769.911	0	0	0	0	
	2/3/2011	SASU	Lower Macfarland			0	0	4359149.54	617761.773	0	0	0	0	
	2/3/2011	SASU	Gridley East	Middle		0	0	4357059.09	618064.898	0	0	0	0	
	2/3/2011	SASU	Gridley East	Middle		0	0	4357062.26	618063.975	0	0	0	0	
	2/3/2011	SASU	Gridley East			0	0	4357066.8	618066.099	0	0	0	0	
	2/3/2011	SASU	Gridley East			0	0	4357077.24	618073.54	0	0	0	0	
	2/3/2011	SASU	Gridley East	Middle		0	0	4357084.82	618073.148	0	0	0	0	
	2/3/2011	SASU	Gridley East			0	0	4357129.24	618077.017	0	0	0	0	
	2/3/2011	SASU	Gridley East	Middle		0	0	4357128.47	618078.202	0	0	0	0	
	2/3/2011	SASU	Lower Macfarland	Middle		0	0	4356794.42	618321.36	0	0	0	0	
	2/3/2011	SASU	Upper Junkyard	Middle		0	0	4356089.82	618327.893	0	0	0	0	
	2/3/2011	SASU	Upper Junkyard			0	0	4356077.98	618319.055	0	0	0	0	
	2/3/2011	SASU	Upper Junkyard	Middle		0	0	4356076.19	618319.131	0	0	0	0	
	2/7/2011	Test	Lower Auditorium			0	0	4374983.85	623734.911	0	0	0	0	
	2/7/2011	Test	Auditorium			0	0	4374996.32	623766.543	0	0	0	0	
	2/7/2011	Test	Hatchery Ditch			0	0	4375092.77	624010.003	0	0	0	0	
	2/7/2011	Test	Moes Ditch			0	0	4375040.22	623919.455	0	0	0	0	
	2/7/2011	Test	Moes Ditch			0	0	4375041.96	623919.147	0	0	0	0	
	2/7/2011	Test	Mathews	Head	Riffle	0	0	4372389.21	622197.413	0	0	0	0	
	2/7/2011	Test	Weir			0	0	4368933.9	619807.288	0	0	0	0	

2/7/2011	Steelhead	Lower Hatchery Ditch	Tail	Glide	0	4.5	4375014.14	623705.521	0.48	0.45	0.3	0.56	Small Gravel
2/7/2011	Steelhead	Hatchery Ditch	Tail	Glide	0	5.1	4375033.2	623798.901	1.2	0.4	0.3	0.55	Large Gravel
2/7/2011	Steelhead	Hatchery Ditch	Middle	Glide	0	0.1	4375096.06	623997.41	0.64	0.32	0.28	0.18	Large Gravel
2/7/2011	Steelhead	Moes Ditch	Middle	Riffle	0	2.3	4375041.04	623918.551	0.78	0.46	0.34	0.43	Large Gravel
2/7/2011	CHN	Upper Auditorium	Head	Riffle	0	0	4375044.26	624053.823	0	0	0	0	
2/7/2011	Steelhead	Lower Hatchery Ditch	Tail	Glide	0	15	4375006.92	623728.476	0.64	0.5	0.3	0.34	Small Gravel
2/7/2011	SASU	Lower Robinson	Tail		0	0	4369436.16	620488.643	0	0	0	0	
2/15/2011	Test	Hatchery Ditch			0	0	4375016.77	623733.25	0	0	0	0	
2/15/2011	Test	Hatchery Ditch			0	0	4375008.42	623729.365	0	0	0	0	
2/16/2011	SASU	Developing Riffle			0	0	4359222.67	617372.302	0	0	0	0	
2/16/2011	SASU	Developing Riffle			0	0	4359220.39	617374.269	0	0	0	0	
2/16/2011	SASU	Developing Riffle			0	0	4359220.22	617376.701	0	0	0	0	
2/16/2011	SASU	Developing Riffle			0	0	4359220.38	617378.363	0	0	0	0	
2/16/2011	SASU	Developing Riffle			0	0	4359216.96	617379.902	0	0	0	0	
2/16/2011	SASU	Developing Riffle			0	0	4359216.14	617383.179	0	0	0	0	
2/23/2011	CHN	Upper Auditorium	Middle	Riffle	0	0	4375032.95	624267.735	0	0	0	0	
2/23/2011	UNK	Moes Ditch	Middle	Riffle	0	0	4375037.82	623923.732	0	0	0	0	
2/23/2011	Steelhead	Upper Auditorium	Head	Riffle	2	1.8	4375045.91	624053.743	0.7	0.5	0.36	0.28	Large Gravel
2/23/2011	UNK	Upper Robinson	Tail	Riffle	0	0	4369611.59	620971.608	0	0	0	0	
2/23/2011	CHN	Upper Robinson	Head	Riffle	0	0	4369600.65	621007.578	0	0	0	0	

	SH	CHN	SASQ
1	4	1	0
2	4	3	0
3	3	15	1
4	5	2	3
5	4	0	19
6	5	1	1
7	0	0	6



8

1

2

0



Small Gravel	None	Canopy	None	None
Large Gravel	Canopy	.5-2m above	LWD	SWD
Small Gravel	Canopy	.5-2m above	LWD	SWD
Large Gravel	None	None	None	None
Large Gravel	None	None	None	None
Large Gravel	None	None	None	None
Large Gravel	0-.5m above	.5-2m above	None	None
Small Gravel	.5-2m above	Canopy	SWD	None
Large Gravel	None	None	None	None

Row Labels	Values	
	Count of Dominant Substrate	Count of Secondary Substrate
Large Gravel	9	9
Small Gravel	9	9
Sand	1	1
Small Gravel	1	1
Small Gravel	64	64
Large Gravel	44	44
Sand	17	17
Small Gravel	3	3
Small Gravel	5	5
Large Gravel	3	3
Sand	2	2
(blank)		
(blank)		
Grand Total	79	79

Substrate Categorization - Percent Occurrer

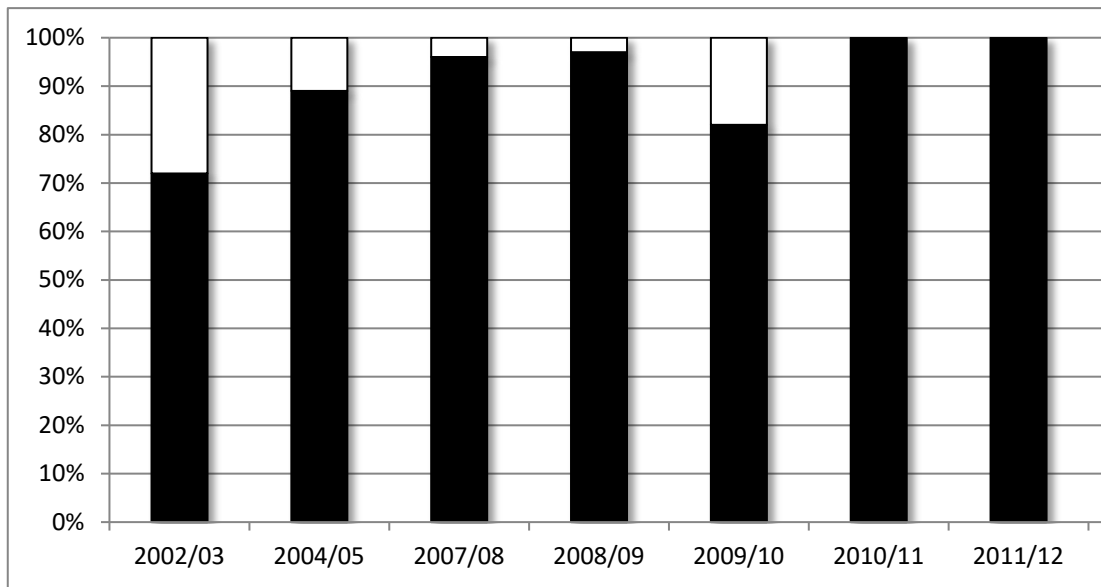
	Percent Occurrence
Sand	25.30%
Small Gravel	100.00%
Large Gravel	70.90%

Overhead Cover - Percent Occurrence

	Percent Occurrence	
None	46.84%	0.46835443
0.0 - 0.5 m	11.39%	0.113924051
0.5 - 2.0 m	32.91%	0.329113924
Canopy	40.51%	0.405063291

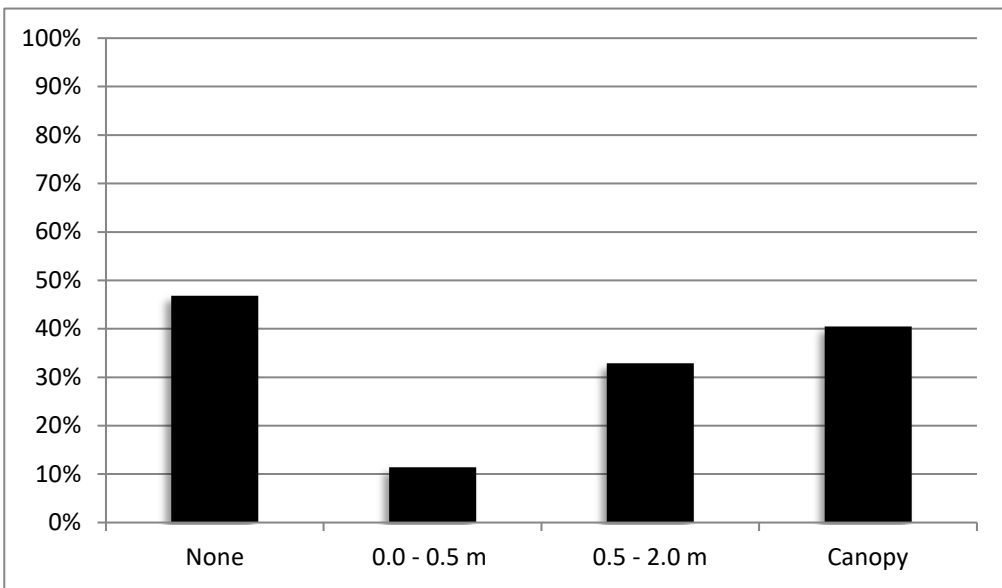
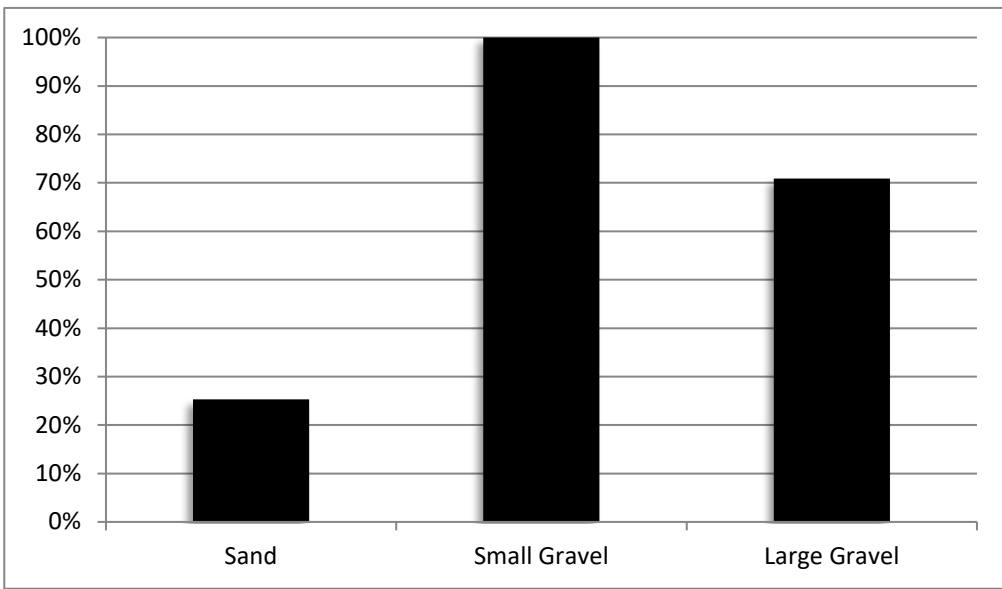
Insream Cover - Percent Occurrence

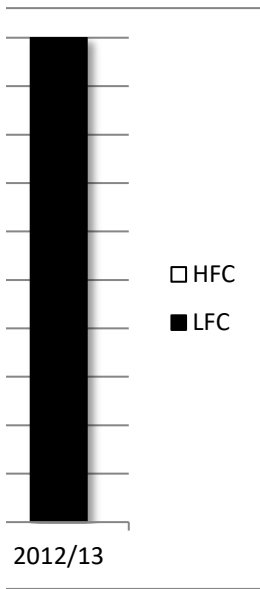
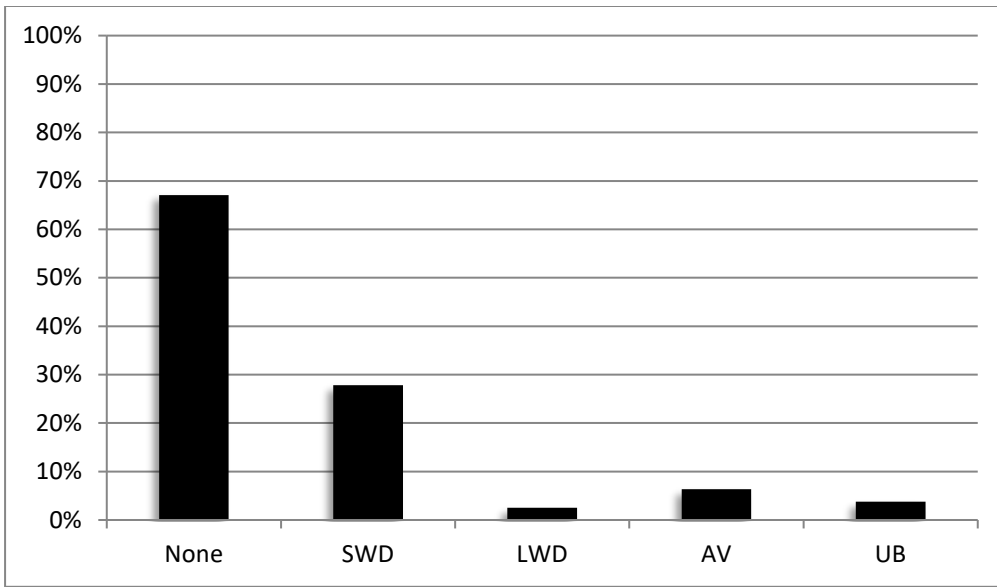
	Percent Occurrence
None	67.09%
SWD	27.85%
LWD	2.53%
AV	6.33%
UB	3.80%



STEELHEAD ONLY

ice

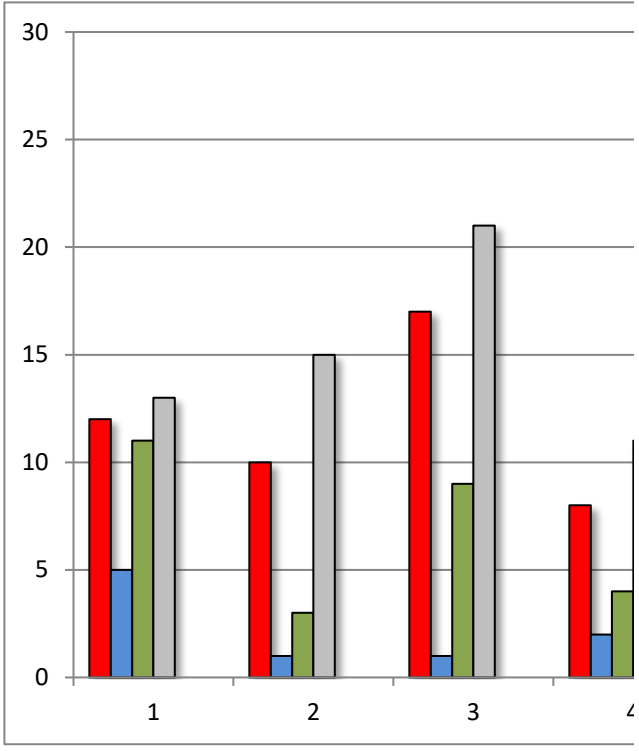




	2002/03	2004/05
LFC	72	89
HFC	28	11

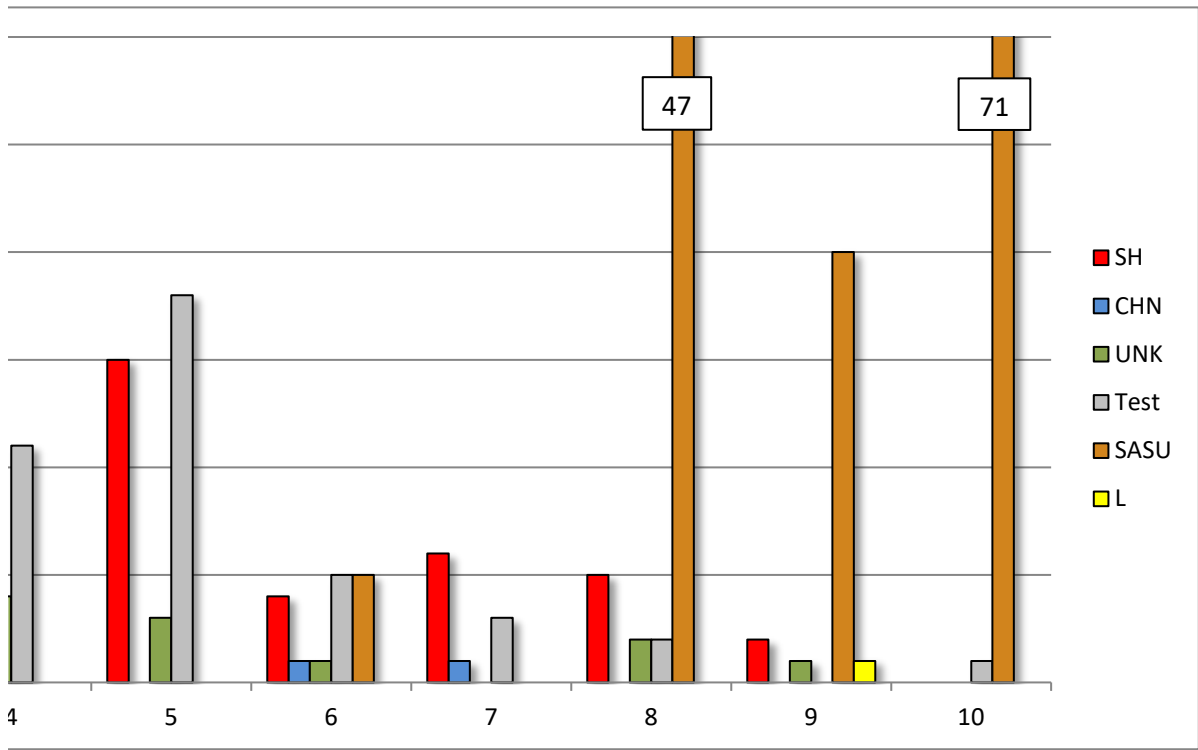
HFC vs LFC SH Redd Location by year

	2002/03	2004/05
SH	12	10
CHN	5	1
UNK	11	3
Test	13	15
SASU	0	0
L	0	0



2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	
96	97	82	100	100		100
4	3	18	0	0		0

3	4	5	6	7		8
17	8	15	4	6		5
1	2	0	1	1		0
9	4	3	1	0		2
21	11	18	5	3		2
0	0	0	5	0		47
0	0	0	0	0		0



9	10	
2	0	79
0	0	11
1	0	34
0	1	89
20	71	143
1	0	1

Week #	Redd # for Rover File	Date	Species	Likely species	# Redds	Riffle Name	Reach
1	1	01/03/12	SH		1	Lower Hatchery Ditch	1
1	2	01/03/12	Test		1	Lower Hatchery Ditch	1
1	3	01/03/12	Test		1	Lower Hatchery Ditch	1
1	4	01/03/12	Unk	CHN/SH	1	Lower Hatchery Ditch	1
1	5	01/03/12	Unk	CHN/SH	1	Lower Hatchery Ditch	1
1	6	01/03/12	CHN		1	Lower Hatchery Ditch	1
1	7	01/03/12	SH		1	Lower Hatchery Ditch	1
1	8	01/03/12	Unk	CHN/SH	1	Upper Hatchery Ditch	1
1	9	01/03/12	Unk	CHN/SH	1	Upper Hatchery Ditch	1
1	10	01/03/12	SH		1	Moes Ditch	1
1	11	01/03/12	SH		1	Moes Ditch	1
1	12	01/03/12	SH		1	Moes Ditch	1
1	1	01/04/12	SH		1	Table Mountain Riffle	1
1	2	01/04/12	Test		1	Cottonwood Riffle	1
1	3	01/04/12	Test		1	Upper Auditorium Riffle	1
1	4	01/04/12	SH		1	Lower Auditorium Riffle	1
1	5	01/04/12	CHN		1	Lower Auditorium Riffle	1
1	6	01/04/12	SH		1	Lower Auditorium Riffle	1
1	7	01/04/12	SH		1	Lower Auditorium Riffle	1
1	8	01/04/12	Test		1	Lower Auditorium Riffle	1
1	9	01/04/12	SH		1	Lower Auditorium Riffle	1
1	10	01/04/12	SH		1	Lower Auditorium Riffle	1
1	11	01/04/12	Test		1	Lower Auditorium Riffle	1
1	12	01/04/12	Test		1	Lower Auditorium Riffle	1
1	13	01/04/12	SH		1	Lower Auditorium Riffle	1
1	14	01/04/12	Unk	CHN/SH	1	Mathews Riffle	2
1	15	01/04/12	CHN		1	Mathews Riffle	2
1	16	01/04/12	Test		1	Mathews Riffle	2
1	17	01/04/12	Unk	SH	1	Aleck Riffle	2
1	18	01/04/12	Unk	SH	1	Aleck Riffle	2
1	19	01/04/12	Test		1	Aleck Riffle	2
1	20	01/04/12	Test		1	Aleck Riffle	2
1	1	01/05/12	Unk	CHN	1	Upper Robinson	3
1	2	01/05/12	CHN		1	Upper Robinson	3
1	3	01/05/12	Test		1	Lower Robinson	3
1	4	01/05/12	Unk	CHN	1	Lower Robinson	3
1	5	01/05/12	Unk	CHN	1	Lower Robinson	3
1	6	01/05/12	Test		1	Lower Robinson	3
1	7	01/05/12	Unk	SH	1	Lower Robinson	3
1	8	01/05/12	CHN		1	Steep Riffle	3
1	9	01/05/12	Test		1	Vance East	4
2	1	01/10/12	Test		1	Table Mountain Riffle	1
2	2	01/10/12	SH		1	Table Mountain Riffle	1
2	3	01/10/12	SH		1	Moes Ditch	1
2	4	01/10/12	SH		1	Moes Ditch	1

2	5	01/10/12	SH		1	Moes Ditch	1
2	6	01/10/12	Test		1	Moes Ditch	1
2	7	01/10/12	Test		1	Moes Ditch	1
2	8	01/10/12	Test		1	Moes Ditch	1
2	9	01/10/12	Test		1	Lower Hatchery Ditch	1
2	10	01/10/12	SH		1	Lower Hatchery Ditch	1
2	11	01/10/12	SH		1	Upper Hatchery Ditch	1
2	12	01/10/12	Test		1	Upper Hatchery Ditch	1
2	13	01/10/12	Test		1	Lower Auditorium Riffle	1
2	14	01/10/12	Unk	SH	1	Lower Auditorium Riffle	1
2	15	01/10/12	SH		1	Lower Auditorium Riffle	1
2	16	01/10/12	Test		1	Lower Hatchery Ditch	1
2	17	01/10/12	Test		1	Lower Auditorium Riffle	1
2	18	01/10/12	SH		1	Lower Auditorium Riffle	1
2	19	01/10/12	Unk	SH	1	Lower Hatchery Ditch	1
2	20	01/10/12	Test		1	Lower Hatchery Ditch	1
2	21	01/11/12	SH		1	Upper Robinson	3
2	22	01/11/12	Test		1	Lower Robinson	3
2	23	01/11/12	Test		1	Steep Riffle	3
2	24	01/11/12	SH		1	Steep Riffle	3
2	25	01/11/12	Test		1	Steep Riffle	3
2	26	01/11/12	Test		1	Weir Riffle	3
2	27	01/11/12	Unk	CHN	1	Weir Riffle	3
2	28	01/11/12	Test		1	Weir Riffle	3
2	29	01/11/12	CHN		1	Big Riffle	4
3	1	01/17/12	SH		1	Lower Hatchery Ditch	1
3	2	01/17/12	Test		1	Lower Hatchery Ditch	1
3	3	01/17/12	Test		1	Lower Auditorium Riffle	1
3	4	01/17/12	Unk	SH	1	Lower Auditorium Riffle	1
3	5	01/17/12	SH		1	Lower Auditorium Riffle	1
3	6	01/17/12	Unk	CHN	1	Lower Auditorium Riffle	1
3	7	01/17/12	SH		1	Lower Hatchery Ditch	1
3	8	01/17/12	Test		1	Lower Hatchery Ditch	1
3	9	01/17/12	Unk	CHN	1	Lower Auditorium Riffle	1
3	10	01/17/12	Unk	CHN	1	Lower Auditorium Riffle	1
3	11	01/17/12	SH		1	Lower Hatchery Ditch	1
3	12	01/17/12	SH		1	Lower Hatchery Ditch	1
3	13	01/17/12	Test		1	Lower Hatchery Ditch	1
3	14	01/17/12	Test		1	Moes Ditch	1
3	15	01/17/12	Unk	SH	1	Moes Ditch	1
3	16	01/17/12	SH		1	Upper Hatchery Ditch	1
3	17	01/17/12	SH		1	Upper Hatchery Ditch	1
3	18	01/17/12	Test		1	Upper Hatchery Ditch	1
3	19	01/17/12	SH		1	Upper Hatchery Ditch	1
3	20	01/17/12	Test		1	Upper Hatchery Ditch	1
3	21	01/17/12	Unk	SH	1	Lower Hatchery Ditch	1
3	22	01/17/12	Test		1	Lower Auditorium Riffle	1

3	23	01/17/12	SH		1	Lower Auditorium Riffle	1
3	24	01/17/12	Test		1	Lower Auditorium Riffle	1
3	25	01/17/12	Test		1	Lower Auditorium Riffle	1
3	26	01/17/12	Test		1	Lower Auditorium Riffle	1
3	27	01/17/12	Test		1	Lower Auditorium Riffle	1
3	28	01/17/12	Test		1	Lower Auditorium Riffle	1
3	29	01/17/12	Unk	CHN	1	Lower Auditorium Riffle	1
3	30	01/17/12	SH		1	Lower Auditorium Riffle	1
3	31	01/17/12	Test		1	Lower Auditorium Riffle	1
3	32	01/17/12	SH		1	Lower Auditorium Riffle	1
3	33	01/17/12	Test		1	Lower Auditorium Riffle	1
3	34	01/17/12	SH		1	Lower Auditorium Riffle	1
3	35	01/17/12	Test		1	Lower Auditorium Riffle	1
3	36	01/17/12	Unk	CHN	1	Lower Auditorium Riffle	1
3	37	01/17/12	Unk	CHN	1	Lower Auditorium Riffle	1
3	38	01/17/12	CHN		1	Upper Auditorium Riffle	1
3	39	01/18/12	Test		1	Aleck Riffle	2
3	40	01/18/12	SH		1	Great Western Canal	2
3	42	01/18/12	SH		1	Lower Robinson Riffle	3
3	43	01/18/12	SH		1	Lower Robinson Riffle	3
3	44	01/18/12	Test		1	Lower Robinson Riffle	3
3	45	01/18/12	Test		1	Lower Robinson Riffle	3
3	46	01/18/12	SH		1	Lower Robinson Riffle	3
3	47	01/18/12	SH		1	Steep Riffle	3
3	48	01/18/12	Test		1	Steep Riffle	3
3	49	01/18/12	Test		1	Steep Side Channel	3
4	1	01/23/12	SH		1	Lower Hatchery Ditch	1
4	2	01/23/12	Test		1	Lower Hatchery Ditch	1
4	3	01/23/12	Test		1	Lower Hatchery Ditch	1
4	4	01/23/12	Test		1	Lower Hatchery Ditch	1
4	5	01/23/12	SH		1	Lower Hatchery Ditch	1
4	6	01/23/12	Unk	CHN	1	Lower Hatchery Ditch	1
4	7	01/23/12	SH		1	Upper Hatchery Ditch	1
4	8	01/23/12	Test		1	Moes Ditch	1
4	9	01/23/12	SH		1	Moes Ditch	1
4	10	01/23/12	Test		1	Moes Ditch	1
4	11	01/24/12	SH		1	Table Mountain Riffle	1
4	12	01/24/12	SH		1	Upper Auditorium Riffle	1
4	13	01/24/12	Test		1	Upper Auditorium Riffle	1
4	14	01/24/12	Unk	SH	1	Lower Auditorium Riffle	1
4	15	01/24/12	Test		1	Lower Auditorium Riffle	1
4	16	01/24/12	Test		1	Lower Auditorium Riffle	1
4	17	01/24/12	Test		1	Lower Auditorium Riffle	1
4	18	01/24/12	Unk	CHN	1	Lower Auditorium Riffle	1
4	19	01/24/12	Unk	CHN	1	Lower Auditorium Riffle	1
4	20	01/24/12	CHN		1	Mathews Riffle	2
4	21	01/24/12	SH		1	Aleck Riffle	2

4	22	01/24/12	SH		1	Aleck Riffle	2
4	23	01/25/12	CHN		1	Upper Robinson Riffle	3
4	24	01/25/12	Test		1	Lower Robinson Riffle	3
4	25	01/25/12	Test		1	Steep Side Channel	3
5	1	01/30/12	Test		1	Table Mountain Riffle	1
5	2	01/30/12	Test		1	Upper Auditorium Riffle	1
5	3	01/30/12	Test		1	Moes Ditch	1
5	4	01/30/12	SH		1	Moes Ditch	1
5	5	01/30/12	SH		1	Moes Ditch	1
5	6	01/30/12	SH		1	Moes Ditch	1
5	7	01/30/12	SH		1	Moes Ditch	1
5	8	01/30/12	SH		1	Moes Ditch	1
5	9	01/30/12	Test		1	Moes Ditch	1
5	10	01/30/12	Test		1	Upper Hatchery Ditch	1
5	11	01/30/12	Unk	CHN	1	Lower Auditorium Riffle	1
5	12	01/30/12	SH		1	Lower Auditorium Riffle	1
5	13	01/30/12	Test		1	Lower Auditorium Riffle	1
5	14	01/30/12	Test		1	Lower Auditorium Riffle	1
5	15	01/30/12	Test		1	Lower Hatchery Ditch	1
5	16	01/30/12	Test		1	Lower Hatchery Ditch	1
5	17	01/30/12	SH		1	Lower Hatchery Ditch	1
5	18	01/30/12	SH		1	Lower Hatchery Ditch	1
5	19	01/30/12	SH		1	Lower Hatchery Ditch	1
5	20	01/30/12	SH		1	Lower Hatchery Ditch	1
5	21	01/30/12	SH		1	Lower Hatchery Ditch	1
5	22	01/30/12	Test		1	Lower Hatchery Ditch	1
5	23	01/30/12	SH		1	Lower Hatchery Ditch	1
5	24	01/30/12	SH		1	Lower Hatchery Ditch	1
5	25	01/30/12	Unk	CHN	1	Lower Auditorium Riffle	1
5	26	02/01/12	Test		1	Trailer Park Riffle	2
5	27	02/01/12	Test		1	Trailer Park Riffle	2
5	28	02/01/12	Test		1	Trailer Park Riffle	2
5	29	02/01/12	SH		1	Trailer Park Riffle	2
5	30	02/01/12	SH		1	Trailer Park Riffle	2
5	31	02/01/12	Test		1	Aleck Riffle	2
5	32	02/01/12	Test		1	Lower Robinson Riffle	3
5	33	02/01/12	Test		1	Lower Robinson Riffle	3
5	34	02/01/12	Unk	CHN	1	Lower Robinson Riffle	3
5	35	02/01/12	Test		1	Lower Robinson Riffle	3
5	36	02/01/12	Test		1	Gateway Riffle	3
6	1	02/06/12	SH		1	Upper Hatchery Riffle	1
6	2	02/06/12	Test		1	Upper Hatchery Ditch	1
6	3	02/06/12	Test		1	Upper Hatchery Ditch	1
6	4	02/06/12	Test		1	Upper Auditorium Riffle	1
6	5	02/06/12	SH		1	Lower Auditorium Riffle	1
6	6	02/06/12	SH		1	Lower Auditorium Riffle	1
6	7	02/06/12	Test		1	Lower Hatchery Ditch	1

6	8	02/06/12	Test		1	Lower Hatchery Ditch	1
6	9	02/06/12	SH		1	Lower Hatchery Ditch	1
6	10	02/06/12	Unk	SH	1	Lower Auditorium Riffle	1
6	11	02/06/12	CHN		1	Lower Robinson Riffle	3
6	12	02/08/12	SASU		1	Gridley East Side Channel	4
6	13	02/08/12	SASU		1	Gridley East Side Channel	4
6	14	02/08/12	SASU		1	Gridley East Side Channel	4
6	15	02/08/12	SASU		1	Gridley East Side Channel	4
6	16	02/08/12	SASU		1	Gridley East Side Channel	4
7	1	02/13/12	SH		1	Table Mountain Riffle	1
7	2	02/13/12	SH		1	Cottonwood Riffle	1
7	3	02/13/12	SH		1	Cottonwood Riffle	1
7	4	02/13/12	Test		1	Upper Auditorium Riffle	1
7	5	02/13/12	Test		1	Moes Ditch	1
7	6	02/13/12	Test		1	Lower Auditorium Riffle	1
7	7	02/13/12	SH		1	Lower Auditorium Riffle	1
7	8	02/13/12	SH		1	Lower Hatchery Ditch	1
7	9	02/13/12	SH		1	Mathews Riffle	2
7	10	02/13/12	CHN		1	Weir Riffle	3
8	1	02/21/12	Test		1	Upper Hatchery	1
8	2	02/21/12	SH		1	Moes Ditch	1
8	3	02/21/12	SH		1	Moes Ditch	1
8	4	02/21/12	SH		1	Lower Auditorium Riffle	1
8	5	02/21/12	Unk	SH	1	Lower Auditorium Riffle	1
8	6	02/21/12	Unk	CHN	1	Lower Auditorium Riffle	1
8	7	02/21/12	Test		1	Lower Auditorium Riffle	1
8	8	02/21/12	SH		1	Lower Hatchery Ditch	1
8	9	02/22/12	SH		1	Eye Side Channel	3
8	10	02/22/12	SASU		10	Gridley East Side Channel	4
8	11	02/22/12	SASU		30	Gridley East Side Channel	4
8	12	02/22/12	SASU		7	Gridley East Side Channel	4
9	1	02/27/12	L		1	Table Mountain Riffle	1
9	2	02/27/12	SH		1	Hatchery Riffle	1
9	3	02/27/12	SH		1	Upper Hatchery Ditch	1
9	4	02/27/12	Unk	SH	1	Lower Robinson Riffle	3
9	5	02/27/12	SASU		20	Lower Robinson Riffle	3
10	1	03/05/12	Test		1	Lower Auditorium Riffle	1
10	2	03/05/12	SASU		1	Lower Auditorium Riffle	1
10	3	03/08/12	SASU		70	Developing Riffle	4

Flows (CFS)	Turbidity (RST)	Riffle Position	Geomorphic Unit	# of Steelhead on Redd	Distance From Bank	UTM Northing
	0.82	Tail	Riffle	0	11	4375006.92
	0.82					
	0.82					
	0.82					
	0.82					
	0.82	Middle	Glide	0	3	4375027.6
	0.82					
	0.82					
	0.82	Middle	Riffle	0	2.1	4375043.1
	0.82	Middle	Riffle	0	2.2	4375034.96
	0.82	Middle	Riffle	0	1.5	4375036.38
	0.69	Tail	Glide	1	15	4375172.4
	0.69					
	0.69					
	0.69	Head	Riffle	0	6.5	4375000.57
	0.69					
	0.69	Middle	Riffle	2	0.3	4375001.95
	0.69	Middle	Riffle	0	6	4374996.95
	0.69					
	0.69	Middle	Riffle	0	40	4374978.71
	0.69	Middle	Riffle	0	30	4374986.37
	0.69					
	0.69					
	0.69	Tail	Riffle	0	50	4374987.69
	0.69					
	0.69					
	0.69					
	0.69					
	0.69					
	0.69					
	0.69					
	0.69					
	0.93					
	0.93					
	0.93					
	0.93					
	0.93					
	0.93					
	0.93					
	0.93					
1642	1.67					
	0.65					
	0.65	Head	Glide	0	0.8	4375248.74
	0.65	Middle	Glide	0	1.5	4375044.49
	0.65	Middle	Glide	0	2.2	4375043.02

	0.65	Middle	Glide	0	1.8	4375045.08
	0.65					
	0.65					
	0.65					
	0.65	Middle	Glide	1	3	4375046.08
	0.65	Middle	Riffle	0	2.1	4375066.04
	0.65					
	0.65					
	0.65					
	0.65	Middle	Glide	0	26	4374982.04
	0.65					
	0.65					
	0.65	Middle	Glide	0	1	4374915.03
	0.65					
	0.65					
	6.19	Middle	Riffle	0	15	4369588.01
	6.19					
	6.19					
	6.19	Head	Riffle	0	4.8	4369119.88
	6.19					
	6.19					
	6.19					
1621	1.03					
	0.94	Tail	Glide	0	20	4375000.38
	0.94					
	0.94					
	0.94					
	0.94	Tail	Glide	0	45	4374964.8
	0.94					
	0.94	Tail	Glide	0	3.5	4375012.98
	0.94					
	0.94					
	0.94					
	0.94	Middle	Riffle	0	4.5	4375032.61
	0.94	Middle	Riffle	0	5	4375034.42
	0.94					
	0.94					
	0.94					
	0.94	Middle	Riffle	3	0.9	4375078.63
	0.94	Middle	Riffle	2	2.1	4375074.31
	0.94					
	0.94	Middle	Riffle	0	1	4375068.79
	0.94					
	0.94					
	0.94					

	0.94	Head	Riffle	0	1.5	4374998.24
	0.94					
	0.94					
	0.94					
	0.94					
	0.94					
	0.94	Middle	Riffle	0	9	4374988.35
	0.94					
	0.94	Middle	Riffle	0	4.5	4374992.23
	0.94					
	0.94	Tail	Riffle	0	25	4374979.36
	0.94					
	0.94					
	0.94					
	1.56					
	1.56	Middle	Glide	0	1.2	4370439.59
	1.56	Middle	Riffle	0	1.8	4369435.93
	1.56	Middle	Riffle	0	2	4369435.46
	1.56					
	1.56					
	1.56	Middle	Riffle	0	1.8	4369444.92
	1.56	Head	Riffle	0	2.4	4639119.27
	1.56					
	1.56					
	6.68	Tail	Glide	0	8	4375008.35
	6.68					
	6.68					
	6.68					
	6.68	Middle	Glide	0	4.5	4375030.11
	6.68					
	6.68	Middle	Riffle	2	1.5	4375076.64
	6.68					
	6.68	Middle	Riffle	0	3	4375039.63
	6.68					
	2.21	Tail	Glide	0	5	4375251.86
	2.21	Middle	Glide	0	5.5	4375024.26
	2.21					
	2.21					
	2.21					
	2.21					
	2.21					
	2.21					
	2.21					
	2.21	Head	Glide	0	5.5	4371486.23

	2.21	Head	Glide	0	2	4371478.91
	2.21					
	2.21					
	2.21					
	0.69					
	0.69					
	0.69					
	0.69	Middle	Glide	1	1.6	4375044.95
	0.69	Middle	Glide	0	1.8	4375042.41
	0.69	Middle	Glide	0	4.5	4375038.92
	0.69	Middle	Glide	0	2.8	4375040.01
	0.69	Middle	Glide	0	3	4375040.13
	0.69					
	0.69					
	0.69					
	0.69	Middle	Glide	0	12	4374994.95
	0.69					
	0.69					
	0.69					
	0.69	Middle	Riffle	2	1.6	4375044.25
	0.69	Middle	Riffle	0	2.3	4375041.39
	0.69	Middle	Riffle	5	1	4375043.72
	0.69	Middle	Riffle	1	1.1	4375052.57
	0.69	Tail	Glide	1	12	4375012.14
	0.69					
	0.69	Tail	Glide	0	14	4375006.32
	0.69	Tail	Glide	0	24	4374999.84
	0.69					
	1.48					
	1.48					
	1.48					
	1.48	Middle	Glide	1	5	4372639.04
	1.48	Middle	Glide	1	4	4372647.85
	1.48					
	1.48					
	1.48					
	1.48					
	1.48					
	1.48					
	2.82	Middle	Glide	0	5	4375077.41
	2.82					
	2.82			2		
	2.82			2		
	2.82	Middle	Riffle	0	23	4374977.95
	2.82	Middle	Riffle	0	37	4374975.79
	2.82					

	2.82					
	2.82	Middle	Riffle	0	3	4375035.49
	2.82					
	2.82					
1874	1.1					
1874	1.1					
1874	1.1					
1874	1.1					
1874	1.1					
	0.71	Head	Glide	0	2	4375250.26
	0.71	Middle	Glide	0	2.2	4375123.03
	0.71	Middle	Glide	0	1.3	4375135.69
	0.71					
	0.71					
	0.71					
	0.71	Middle	Glide	0	8.5	4374995.24
	0.71	Middle	Glide	0	4.7	4375032.04
	0.71	Middle	Glide	0	15	4372394.72
	0.71					
	0.6					
	0.6	Middle	Riffle	0	5	4375038.33
	0.6	Middle	Riffle	0	20	4375041.09
	0.6	Head	Glide	0	10	4374997.29
	0.6					
	0.6					
	0.6					
	0.6	Middle	Riffle	0	1.7	4375042.64
	1.55	Head	Riffle	0	14	4368353.7
2525	3.11					4357132.64
2525	3.11					4357073.01
2525	3.11					4356976.92
	0.37					
	0.37	Middle	Riffle	0	9	4375017.6
	0.37	Middle	Riffle	0	1.5	4375074
	0.37					
	0.37					
	1.15					
	1.15					
	2.53					

	Max	50.00
ALL SH REDDs	Min	0.80
	(SH Only) MEAN	9.327272727
	(SH Only) ST DEV	14.01985605

SH Redds w/ No SH Present

Max
Min
MEAN
ST DEV

SH Redds w/SH Present

Max
Min
MEAN
ST DEV

623839.88	1	0.7	0.6	0.5	0.27	0.3	Small Gravel	Large Gravel
623761.89	1.1	0.9	0.7	0.6	0.3	0.57	Large Gravel	Small Gravel
623762.39	1.1	1	0.5	0.5	0.25	0.52	Large Gravel	Small Gravel
623747.28	1.2	0.65	0.55	0.5	0.34	0.6	Small Gravel	Large Gravel
621959.28	1	1	0.5	0.4	0.45	0.46	Small Gravel	Large Gravel
650487.69	1.6	1.2	0.6	0.7	0.32	0.51	Small Gravel	Large Gravel
620492.55	1.2	1.2	0.6	0.6	0.31	0.71	Small Gravel	Large Gravel
620508.15	0.7	0.85	0.45	0.45	0.35	0.47	Large Gravel	Small Gravel
620086.82	0.9	0.75	0.6	0.6	0.26	0.63	Small Gravel	Large Gravel
623707.79	1.7	0.85	0.55	0.5	0.37	0.32	Small Gravel	Large Gravel
623796.22	0.95	0.55	0.45	0.4	0.36	0.44	Small Gravel	Sand
623959.14	1	1	0.65	0.45	0.16	0.61	Large Gravel	Small Gravel
623893.66	1.1	0.8	0.5	0.55	0.2	0.38	Small Gravel	Large Gravel
624523.31	0.9	0.65	0.48	0.28	0.44	0.55	Small Gravel	Large Gravel
623998.72	1.2	0.7	0.4	0.28	0.48	0.33	Small Gravel	Large Gravel
622205.88	1.16	0.68	0.72	0.56	0.34	0.78	Large Gravel	Small Gravel

623822.05	0.8	0.85	0.52	0.48	0.2	0.45	Small Gravel	Large Gravel
624541.57	1.3	0.7	0.52	0.46	0.66	0.5	Small Gravel	Sand
624169.09	1	0.7	0.4	0.38	0.39	0.76	Small Gravel	Sand
624241.69	0.8	0.6	0.5	0.55	0.48	0.79	Small Gravel	Large Gravel
623773.43	1.1	1.2	0.55	0.6	0.38	0.5	Small Gravel	Large Gravel
623795.82	1	1.1	0.6	0.45	0.34	0.33	Small Gravel	Sand
622198.57	1	0.9	0.52	0.44	0.48	0.54	Small Gravel	Large Gravel
623905.76	0.9	0.9	0.4	0.4	0.24	0.51	Small Gravel	Large Gravel
623893.35	0.7	0.6	0.4	0.34	0.18	0.45	Small Gravel	Large Gravel
623820.67	0.9	0.5	0.5	0.35	0.24	0.6	Small Gravel	Large Gravel
623818.97	1	0.9	0.5	0.4	0.3	0.55	Sand	Small Gravel
619273.65	1.1	0.85	0.6	0.4	0.45	0.71	Small Gravel	Large Gravel
618076.296								
618069.47								
617969.83								
624242.01	1	0.64	0.4	0.4	0.36	0.51	Small Gravel	Large Gravel
623962.19	0.7	0.6	0.45	0.4	0.2	0.38	Small Gravel	Sand

1.75 2.00 1.00 0.80 0.70 0.69
0.60 0.38 0.26 0.28 0.19 0.27
1.17 0.89 0.57 0.49 0.40 0.47
0.29252 0.32637 0.1846 0.14621 0.1562 0.11009

None	None	None	Small Woody Debris
.5 - 2m	Canopy	Small Woody Debris	None
Canopy	None	Large Woody Debris	None
None	None	None	None
.5 - 2m	Canopy	Large Woody Debris	Aquatic Vegetation
None	None	None	None
Canopy	.5 - 2m	None	None
None	None	None	None
None	None	None	None
.5 - 2 m	Canopy	None	Small Woody Debris
Canopy	None	None	None
None	Canopy	None	Small Woody Debris
.5 - 2 m	Canopy	Undercut Bank	Small Woody Debris
Canopy	.5 - 2 m	None	Small Woody Debris
Canopy	0 - .5m	Small Woody Debris	Undercut Bank

None	None	Small Woody Debris	Aquatic Vegetation
None	None	None	None
None	None	None	None
None	None	None	None
None	None	None	None
Canopy	.5 - 2 m	None	None
.5 - 2 m	Canopy	None	None
Canopy	.5 - 2 m	None	None
Canopy	.5 - 2 m	None	Aquatic Vegetation
None	None	None	None
Canopy	None	Small Woody Debris	None
0 - .5 m	.5 - 2 m	Small Woody Debris	None
.5 - 2 m	Canopy	None	None
None	Canopy	None	None
0 - .5 m	.5 - 2 m	Small Woody Debris	None
None	None	None	None

None	None	None	None
None	None	None	Small Woody Debris
None	None	None	None
.5 - 2 m	Canopy	None	Small Woody Debris
None	.5 - 2 m	None	None
.5 - 2 m	None	None	None
None	None	None	None
.5 - 2 m	0 - .5 m	None	Small Woody Debris
None	Canopy	None	None
0 - .5 m	Canopy	None	Small Woody Debris
0 - .5 m	Canopy	Small Woody Debris	None
None	None	None	None
None	None	None	None
None	None	None	None
None	Canopy	None	None
0 - .5 m	.5 - 2 m	Small Woody Debris	Small Woody Debris
None	None	None	None
None	None	None	None
None	None	None	None

.5 - 2 m	Canopy	None	None
None	Canopy	Small Woody Debris	None
None	Canopy	None	None
None	Canopy	None	Small Woody Debris
None	None	None	None
Canopy	Canopy	None	None
None	None	None	None
None	None	None	None
.5 - 2 m	Canopy	None	Small Woody Debris
None	None	None	None
.5 - 2 m	Canopy	None	None
None	None	None	None
None	None	None	None
.5 - 2 m	0 - .5 m	Small Woody Debris	Small Woody Debris

appears 1 - 2 weeks old
within a previously recorded test area
within a previously recorded test area
within a previously recorded test area
Area
Area
Area
Area
Area

	Week #	Reach 1	Reach 2	Reach 3	Reach 4	Total:
Steelhead	1	13	1	0	0	14
	2	16	2	2	0	20
	3	30	2	0	0	32
	4	12	0	0	0	12
	5	22	2	1	0	25
	6	29	0	1	0	30
	7	20	2	0	0	22
	8	6	0	0	0	6
	9	2	0	0	0	2
	10	4	0	0	0	4
		92.22%	5.39%	2.40%	0.00%	
		154	9	4	0	
				Yearly Total:		167

CHN

- * 1 Coho observed in Aleck Riffle on 02/06 (Week 6)
- * 1 Pacific Lamprey observed in Auditorium Riffle on 02/21 (Week 8)

Week #	Reach 1	Reach 2	Reach 3	Reach 4	Total:
1	0	0	0	0	0
2	1	0	2	1	4
3	3	0	0	0	3
4	0	0	0	0	0
5	3	2	1	0	6
6	1	1	0	0	2
7	2	0	0	0	2
8	0	0	1	0	1
9	3	0	0	0	3
10	0	0	0	0	0
	61.90%	21.43%	28.57%	7.14%	
	13	3	4	1	
	Yearly Total:				21

Redd # for Rover

Week #	File	Date	Species	# Redds	Riffle Name	Reach
1	1	01/03/12	SH	1	Lower Hatchery Ditch	1
1	7	01/03/12	SH	1	Lower Hatchery Ditch	1
1	10	01/03/12	SH	1	Moes Ditch	1
1	11	01/03/12	SH	1	Moes Ditch	1
1	12	01/03/12	SH	1	Moes Ditch	1
1	4	01/04/12	SH	1	Lower Auditorium Riffle	1
1	7	01/04/12	SH	1	Lower Auditorium Riffle	1
1	9	01/04/12	SH	1	Lower Auditorium Riffle	1
1	10	01/04/12	SH	1	Lower Auditorium Riffle	1
1	13	01/04/12	SH	1	Lower Auditorium Riffle	1
2	2	01/10/12	SH	1	Table Mountain Riffle	1
2	3	01/10/12	SH	1	Moes Ditch	1
2	4	01/10/12	SH	1	Moes Ditch	1
2	5	01/10/12	SH	1	Moes Ditch	1
2	11	01/10/12	SH	1	Upper Hatchery Ditch	1
2	15	01/10/12	SH	1	Lower Auditorium Riffle	1
2	18	01/10/12	SH	1	Lower Auditorium Riffle	1
2	21	01/11/12	SH	1	Upper Robinson	3
2	24	01/11/12	SH	1	Steep Riffle	3
3	1	01/17/12	SH	1	Lower Hatchery Ditch	1
3	5	01/17/12	SH	1	Lower Auditorium Riffle	1
3	7	01/17/12	SH	1	Lower Hatchery Ditch	1
3	11	01/17/12	SH	1	Lower Hatchery Ditch	1
3	12	01/17/12	SH	1	Lower Hatchery Ditch	1
3	19	01/17/12	SH	1	Upper Hatchery Ditch	1
3	23	01/17/12	SH	1	Lower Auditorium Riffle	1
3	30	01/17/12	SH	1	Lower Auditorium Riffle	1
3	32	01/17/12	SH	1	Lower Auditorium Riffle	1
3	34	01/17/12	SH	1	Lower Auditorium Riffle	1
3	40	01/18/12	SH	1	Great Western Canal	2
3	42	01/18/12	SH	1	Lower Robinson Riffle	3
3	43	01/18/12	SH	1	Lower Robinson Riffle	3
3	46	01/18/12	SH	1	Lower Robinson Riffle	3
3	47	01/18/12	SH	1	Steep Riffle	3
4	1	01/23/12	SH	1	Lower Hatchery Ditch	1
4	5	01/23/12	SH	1	Lower Hatchery Ditch	1
4	9	01/23/12	SH	1	Moes Ditch	1
4	11	01/24/12	SH	1	Table Mountain Riffle	1
4	12	01/24/12	SH	1	Upper Auditorium Riffle	1
4	21	01/24/12	SH	1	Aleck Riffle	2
4	22	01/24/12	SH	1	Aleck Riffle	2
5	5	01/30/12	SH	1	Moes Ditch	1
5	6	01/30/12	SH	1	Moes Ditch	1

5	7	01/30/12	SH	1	Moes Ditch	1
5	8	01/30/12	SH	1	Moes Ditch	1
5	12	01/30/12	SH	1	Lower Auditorium Riffle	1
5	18	01/30/12	SH	1	Lower Hatchery Ditch	1
5	23	01/30/12	SH	1	Lower Hatchery Ditch	1
5	24	01/30/12	SH	1	Lower Hatchery Ditch	1
6	1	02/06/12	SH	1	Upper Hatchery Riffle	1
6	5	02/06/12	SH	1	Lower Auditorium Riffle	1
6	6	02/06/12	SH	1	Lower Auditorium Riffle	1
6	9	02/06/12	SH	1	Lower Hatchery Ditch	1
7	1	02/13/12	SH	1	Table Mountain Riffle	1
7	2	02/13/12	SH	1	Cottonwood Riffle	1
7	3	02/13/12	SH	1	Cottonwood Riffle	1
7	7	02/13/12	SH	1	Lower Auditorium Riffle	1
7	8	02/13/12	SH	1	Lower Hatchery Ditch	1
7	9	02/13/12	SH	1	Mathews Riffle	2
8	2	02/21/12	SH	1	Moes Ditch	1
8	3	02/21/12	SH	1	Moes Ditch	1
8	4	02/21/12	SH	1	Lower Auditorium Riffle	1
8	8	02/21/12	SH	1	Lower Hatchery Ditch	1
8	9	02/22/12	SH	1	Eye Side Channel	3
9	2	02/27/12	SH	1	Hatchery Riffle	1
9	3	02/27/12	SH	1	Upper Hatchery Ditch	1
1	1	01/04/12	SH	1	Table Mountain Riffle	1
2	10	01/10/12	SH	1	Lower Hatchery Ditch	1
5	4	01/30/12	SH	1	Moes Ditch	1
5	20	01/30/12	SH	1	Lower Hatchery Ditch	1
5	21	01/30/12	SH	1	Lower Hatchery Ditch	1
5	29	02/01/12	SH	1	Trailer Park Riffle	2
5	30	02/01/12	SH	1	Trailer Park Riffle	2
1	6	01/04/12	SH	1	Lower Auditorium Riffle	1
3	17	01/17/12	SH	1	Upper Hatchery Ditch	1
4	7	01/23/12	SH	1	Upper Hatchery Ditch	1
5	17	01/30/12	SH	1	Lower Hatchery Ditch	1
3	16	01/17/12	SH	1	Upper Hatchery Ditch	1
5	19	01/30/12	SH	1	Lower Hatchery Ditch	1

Bins

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Flows (CFS)	Turbidity (RST)	Riffle Position	Geomorphic Unit	# of Steelhead on Redd	Distance From Bank	UTM Northing	UTM Easting
	0.82	Tail	Riffle	0	11	4375006.92	623708
	0.82	Middle	Glide	0	3	4375027.6	623796.1
	0.82	Middle	Riffle	0	2.1	4375043.1	623907.1
	0.82	Middle	Riffle	0	2.2	4375034.96	623891.5
	0.82	Middle	Riffle	0	1.5	4375036.38	623876.3
	0.69	Head	Riffle	0	6.5	4375000.57	623822.2
	0.69	Middle	Riffle	0	6	4374996.95	623778.1
	0.69	Middle	Riffle	0	40	4374978.71	623734.8
	0.69	Middle	Riffle	0	30	4374986.37	623745.5
	0.69	Tail	Riffle	0	50	4374987.69	623708.1
	0.65	Head	Glide	0	0.8	4375248.74	624549.7
	0.65	Middle	Glide	0	1.5	4375044.49	623953.9
	0.65	Middle	Glide	0	2.2	4375043.02	623955.9
	0.65	Middle	Glide	0	1.8	4375045.08	623950
	0.65	Middle	Riffle	0	2.1	4375066.04	623889.5
	0.65	Middle	Glide	0	26	4374982.04	623745.8
	0.65	Middle	Glide	0	1	4374915.03	623747.2
	6.19	Middle	Riffle	0	15	4369588.01	620940
	6.19	Head	Riffle	0	4.8	4369119.88	62008.77
	0.94	Tail	Glide	0	20	4375000.38	623700.1
	0.94	Tail	Glide	0	45	4374964.8	623722.9
	0.94	Tail	Glide	0	3.5	4375012.98	623708.9
	0.94	Middle	Riffle	0	4.5	4375032.61	623805.2
	0.94	Middle	Riffle	0	5	4375034.42	623809.8
	0.94	Middle	Riffle	0	1	4375068.79	623898.4
	0.94	Head	Riffle	0	1.5	4374998.24	623839.9
	0.94	Middle	Riffle	0	9	4374988.35	623761.9
	0.94	Middle	Riffle	0	4.5	4374992.23	623762.4
	0.94	Tail	Riffle	0	25	4374979.36	623747.3
	1.56	Middle	Glide	0	1.2	4370439.59	621959.3
	1.56	Middle	Riffle	0	1.8	4369435.93	650487.7
	1.56	Middle	Riffle	0	2	4369435.46	620492.6
	1.56	Middle	Riffle	0	1.8	4369444.92	620508.2
	1.56	Head	Riffle	0	2.4	4639119.27	620086.8
	6.68	Tail	Glide	0	8	4375008.35	623707.8
	6.68	Middle	Glide	0	4.5	4375030.11	623796.2
	6.68	Middle	Riffle	0	3	4375039.63	623893.7
	2.21	Tail	Glide	0	5	4375251.86	624523.3
	2.21	Middle	Glide	0	5.5	4375024.26	623998.7
	2.21	Head	Glide	0	5.5	4371486.23	622205.9
	2.21	Head	Glide	0	2	4371478.91	622194.9
	0.69	Middle	Glide	0	1.8	4375042.41	623947.6
	0.69	Middle	Glide	0	4.5	4375038.92	623923.7

	0.69	Middle	Glide	0	2.8	4375040.01	623919
	0.69	Middle	Glide	0	3	4375040.13	623908
	0.69	Middle	Glide	0	12	4374994.95	623801.6
	0.69	Middle	Riffle	0	2.3	4375041.39	623849.2
	0.69	Tail	Glide	0	14	4375006.32	623712.5
	0.69	Tail	Glide	0	24	4374999.84	623710.6
	2.82	Middle	Glide	0	5	4375077.41	624410.4
	2.82	Middle	Riffle	0	23	4374977.95	623746.8
	2.82	Middle	Riffle	0	37	4374975.79	623732.7
	2.82	Middle	Riffle	0	3	4375035.49	623822.1
	0.71	Head	Glide	0	2	4375250.26	624541.6
	0.71	Middle	Glide	0	2.2	4375123.03	624169.1
	0.71	Middle	Glide	0	1.3	4375135.69	624241.7
	0.71	Middle	Glide	0	8.5	4374995.24	623773.4
	0.71	Middle	Glide	0	4.7	4375032.04	623795.8
	0.71	Middle	Glide	0	15	4372394.72	622198.6
	0.6	Middle	Riffle	0	5	4375038.33	623905.8
	0.6	Middle	Riffle	0	20	4375041.09	623893.4
	0.6	Head	Glide	0	10	4374997.29	623820.7
	0.6	Middle	Riffle	0	1.7	4375042.64	623819
	1.55	Head	Riffle	0	14	4368353.7	619273.7
	0.37	Middle	Riffle	0	9	4375017.6	624242
	0.37	Middle	Riffle	0	1.5	4375074	623962.2
	0.69	Tail	Glide	1	15	4375172.4	624382.1
	0.65	Middle	Glide	1	3	4375046.08	623844.4
	0.69	Middle	Glide	1	1.6	4375044.95	623954.6
	0.69	Middle	Riffle	1	1.1	4375052.57	623861.4
	0.69	Tail	Glide	1	12	4375012.14	623729.9
	1.48	Middle	Glide	1	5	4372639.04	622096.5
	1.48	Middle	Glide	1	4	4372647.85	622094
	0.69	Middle	Riffle	2	0.3	4375001.95	623778.1
	0.94	Middle	Riffle	2	2.1	4375074.31	623950.2
	6.68	Middle	Riffle	2	1.5	4375076.64	623959.1
	0.69	Middle	Riffle	2	1.6	4375044.25	623839.5
	0.94	Middle	Riffle	3	0.9	4375078.63	623975
	0.69	Middle	Riffle	5	1	4375043.72	623857.6

		Distance From Bank	UTM Northing	UTM Easting
SH Redds w/ No SH Present	Max	50.00		
	Min	0.80		
	MEAN	9.04		
	ST DEV	11.24		
SH Redds w/SH Present	Max	15.00		
	Min	0.30		
	MEAN	3.78		
	ST DEV	4.55		
ALL SH REDDS	Max	50.00		
	Min	0.30		
	MEAN	8.17		
	ST DEV	10.60		

<i>D.F.B</i>		<i>Redd Length</i>	
Mean	8.172152	Mean	1.17481
Standard Error	1.192396	Standard Error	0.0456
95 CI	2.337096	95 CI	0.089377
Median	4	Median	1.1
Mode	3	Mode	1
Standard Deviativ	10.59825	Standard Deviation	0.405304
Sample Variance	112.3228	Sample Variance	0.164271
Kurtosis	4.840967	Kurtosis	11.74803
Skewness	2.226559	Skewness	2.721567
Range	49.7	Range	2.8
Minimum	0.3	Minimum	0.6
Maximum	50	Maximum	3.4
Sum	645.6	Sum	92.81
Count	79	Count	79

Redd Width

Mean	0.86481
Standard Error	0.032973
95 CI	0.064628
Median	0.8
Mode	0.7
Standard Deviation	0.293073
Sample Variance	0.085892
Kurtosis	5.383149
Skewness	1.805257
Range	1.72
Minimum	0.38
Maximum	2.1
Sum	68.32
Count	79

Redd Length	Redd Width	Pot Length	Pot Width	Depth	Velocity	Dominant Substrate	Secondary Substrate
1.6	1.4			0.27	0.5	Small Gravel	Small Gravel
2.5	2.1			0.39	0.36	Small Gravel	Large Gravel
1.1	0.9			0.22	0.35	Large Gravel	Small Gravel
1.35	1.1			0.29	0.27	Small Gravel	Large Gravel
1.4	1.1			0.25	0.35	Small Gravel	Small Gravel
1.7	1			0.2	0.55	Small Gravel	Sand
1.5	1.1	0.9	0.8	0.3	0.41	Small Gravel	Large Gravel
1.5	1	0.8	0.55	0.25	0.56	Small Gravel	Large Gravel
1.4	1.25	0.95	0.65	0.3	0.63	Small Gravel	Large Gravel
1.55	1.05	0.8	0.7	0.36	0.27	Small Gravel	Large Gravel
1.5	0.9	0.55	0.55	0.7	0.42	Small Gravel	Sand
1	1.1	0.7	0.5	0.4	0.45	Small Gravel	Small Gravel
0.88	0.38	0.5	0.38	0.48	0.44	Small Gravel	Large Gravel
1.2	1	0.46	0.54	0.46	0.39	Small Gravel	Large Gravel
0.82	0.42	0.26	0.28	0.22	0.45	Small Gravel	Sand
1	0.76	0.3	0.36	0.56	0.69	Small Gravel	Large Gravel
1.22	0.68	0.6	0.4	0.46	0.32	Large Gravel	Small Gravel
0.8	2	0.51	0.3	0.19	0.64	Small Gravel	Large Gravel
1.1	0.7	0.51	0.4	0.38	0.54	Small Gravel	Large Gravel
1.2	0.7	0.5	0.4	0.33	0.33	Small Gravel	Sand
1.6	0.7	0.75	0.4	0.68	0.5	Small Gravel	Large Gravel
1.3	1	0.9	0.7	0.5	0.35	Small Gravel	Sand
1.3	1	0.65	0.6	0.37	0.46	Small Gravel	Large Gravel
1.75	1.2	1	0.7	0.39	0.51	Small Gravel	Sand
1	0.8	0.55	0.45	0.19	0.53	Small Gravel	Sand
1	0.7	0.6	0.5	0.27	0.3	Small Gravel	Large Gravel
1.1	0.9	0.7	0.6	0.3	0.57	Large Gravel	Small Gravel
1.1	1	0.5	0.5	0.25	0.52	Large Gravel	Small Gravel
1.2	0.65	0.55	0.5	0.34	0.6	Small Gravel	Large Gravel
1	1	0.5	0.4	0.45	0.46	Small Gravel	Large Gravel
1.6	1.2	0.6	0.7	0.32	0.51	Small Gravel	Large Gravel
1.2	1.2	0.6	0.6	0.31	0.71	Small Gravel	Large Gravel
0.7	0.85	0.45	0.45	0.35	0.47	Large Gravel	Small Gravel
0.9	0.75	0.6	0.6	0.26	0.63	Small Gravel	Large Gravel
1.7	0.85	0.55	0.5	0.37	0.32	Small Gravel	Large Gravel
0.95	0.55	0.45	0.4	0.36	0.44	Small Gravel	Sand
1.1	0.8	0.5	0.55	0.2	0.38	Small Gravel	Large Gravel
0.9	0.65	0.48	0.28	0.44	0.55	Small Gravel	Large Gravel
1.2	0.7	0.4	0.28	0.48	0.33	Small Gravel	Large Gravel
1.16	0.68	0.72	0.56	0.34	0.78	Large Gravel	Small Gravel
1.12	0.9	0.7	0.42	0.64	0.67	Small Gravel	Large Gravel
1.1	0.8	0.5	0.45	0.2	0.32	Small Gravel	Large Gravel
1	0.7	0.5	0.6	0.3	0.26	Small Gravel	Large Gravel

1.1	0.6	1	0.5	0.3	0.29	Small Gravel	Large Gravel
1	0.7	0.5	0.5	0.29	0.21	Small Gravel	Large Gravel
1.2	0.7	0.45	0.35	0.4	0.4	Small Gravel	Large Gravel
1.2	0.65	0.5	0.4	0.3	0.66	Small Gravel	Large Gravel
0.8	0.8	0.4	0.4	0.28	0.26	Small Gravel	Sand
1	0.8	0.5	0.4	0.3	0.26	Small Gravel	Sand
0.86	0.66	0.42	0.45	0.22	0.27	Small Gravel	Large Gravel
1	1	0.54	0.5	0.31	0.58	Small Gravel	Large Gravel
1	0.55	0.5	0.4	0.42	0.57	Small Gravel	Large Gravel
0.8	0.85	0.52	0.48	0.2	0.45	Small Gravel	Large Gravel
1.3	0.7	0.52	0.46	0.66	0.5	Small Gravel	Sand
1	0.7	0.4	0.38	0.39	0.76	Small Gravel	Sand
0.8	0.6	0.5	0.55	0.48	0.79	Small Gravel	Large Gravel
1.1	1.2	0.55	0.6	0.38	0.5	Small Gravel	Large Gravel
1	1.1	0.6	0.45	0.34	0.33	Small Gravel	Sand
1	0.9	0.52	0.44	0.48	0.54	Small Gravel	Large Gravel
0.9	0.9	0.4	0.4	0.24	0.51	Small Gravel	Large Gravel
0.7	0.6	0.4	0.34	0.18	0.45	Small Gravel	Large Gravel
0.9	0.5	0.5	0.35	0.24	0.6	Small Gravel	Large Gravel
1	0.9	0.5	0.4	0.3	0.55	Sand	Small Gravel
1.1	0.85	0.6	0.4	0.45	0.71	Small Gravel	Large Gravel
1	0.64	0.4	0.4	0.36	0.51	Small Gravel	Large Gravel
0.7	0.6	0.45	0.4	0.2	0.38	Small Gravel	Sand
1	0.75			0.52	0.22	Large Gravel	Small Gravel
0.6	0.6	0.3	0.3	0.68	0.6	Small Gravel	Sand
2	0.7	1	0.5	0.4	0.24	Small Gravel	Large Gravel
1.2	0.5	0.5	0.4	0.35	0.52	Small Gravel	Large Gravel
1	0.7	0.55	0.55	0.25	0.32	Small Gravel	Sand
1	0.65	0.45	0.4	0.6	0.51	Small Gravel	Large Gravel
0.75	0.7	0.4	0.5	0.62	0.42	Small Gravel	Sand
3.4	1.5	0.75	0.7	0.38	0.21	Small Gravel	Large Gravel
1.6	1	0.5	0.8	0.26	0.5	Large Gravel	Small Gravel
1	1	0.65	0.45	0.16	0.61	Large Gravel	Small Gravel
1.4	1	0.75	0.6	0.3	0.83	Small Gravel	Large Gravel
1.2	0.9	0.7	0.6	0.26	0.48	Small Gravel	Sand
0.9	0.6	0.7	0.4	0.2	0.7	Small Gravel	Sand

Redd Length	Redd Width	Pot Length	Pot Width	Depth	Velocity	
2.50	2.10	1.00	0.80	0.70	0.79	
0.70	0.38	0.26	0.28	0.18	0.21	Sand
1.15	0.87	0.56	0.48	0.35	0.47	Small Gravel
0.31	0.30	0.16	0.12	0.12	0.14	Large Gravel

3.40	1.50	1.00	0.80	0.68	0.83	
0.60	0.50	0.30	0.30	0.16	0.21	Sand
1.31	0.82	0.60	0.52	0.38	0.47	Small Gravel
0.73	0.26	0.19	0.14	0.17	0.19	Large Gravel

3.40	2.10	1.00	0.80	0.70	0.83
0.60	0.38	0.26	0.28	0.16	0.21
1.17	0.86	0.57	0.48	0.35	0.47
0.41	0.29	0.16	0.12	0.13	0.15

<i>Pot Length</i>	
Mean	0.569583
Standard Error	0.019285
95 CI	0.037799
Median	0.515
Mode	0.5
Standard Deviation	0.163642
Sample Variance	0.026779
Kurtosis	0.850736
Skewness	0.995258
Range	0.74
Minimum	0.26
Maximum	1
Sum	41.01
Count	72

<i>Depth</i>	
Mean	0.354684
Standard Error	0.014709
95 CI	0.02883
Median	0.33
Mode	0.3
Standard Deviation	0.130736
Sample Variance	0.017092
Kurtosis	0.414771
Skewness	0.938843
Range	0.54
Minimum	0.16
Maximum	0.7
Sum	28.02
Count	79

<i>Pot Width</i>

<i>Velocity</i>

Mean	0.481944
Standard Error	0.01418
95 CI	0.027793
Median	0.45
Mode	0.4
Standard Deviation	0.120324
Sample Variance	0.014478
Kurtosis	0.067638
Skewness	0.647352
Range	0.52
Minimum	0.28
Maximum	0.8
Sum	34.7
Count	72

Mean	0.472532
Standard Error	0.016867
95 CI	0.03306
Median	0.48
Mode	0.5
Standard Deviation	0.149919
Sample Variance	0.022476
Kurtosis	-0.53825
Skewness	0.229022
Range	0.62
Minimum	0.21
Maximum	0.83
Sum	37.33
Count	79

Dominant
Overhead Cover Secondary Overhead Cover Dominant Instream Cover Secondary Instream Cover

None	None	None	None
Canopy	None	None	None
Canopy	.5 - 2m	None	None
None	Canopy	None	None
None	None	None	None
None	None	None	None
None	None	None	None
None	None	None	None
None	None	None	None
None	None	None	None
None	None	None	None
.5 - 2m	0 - .5m	Aquatic Vegetation	Undercut Bank
None	.5 - 2m	Small Woody Debris	Aquatic Vegetation
None	None	None	None
None	None	None	Small Woody Debris
Canopy	None	Large Woody Debris	None
None	None	None	None
.5 - 2m	Canopy	Large Woody Debris	Aquatic Vegetation
None	None	None	None
Canopy	.5 - 2m	None	None
None	None	None	None
None	None	None	None
.5 - 2 m	Canopy	None	Small Woody Debris
Canopy	None	None	None
None	Canopy	None	Small Woody Debris
Canopy	0 - .5m	Small Woody Debris	Undercut Bank
None	None	Small Woody Debris	Aquatic Vegetation
None	None	None	None
None	None	None	None
None	None	None	None
None	None	None	None
Canopy	.5 - 2 m	None	None
.5 - 2 m	Canopy	None	None
Canopy	.5 - 2 m	None	None
Canopy	.5 - 2 m	None	Aquatic Vegetation
None	None	None	None
Canopy	None	Small Woody Debris	None
.5 - 2 m	Canopy	None	None
None	Canopy	None	None
0 - .5 m	.5 - 2 m	Small Woody Debris	None
None	None	None	None
None	None	None	None
None	None	None	None
.5 - 2 m	Canopy	None	Small Woody Debris

None	.5 - 2 m	None	None
.5 - 2 m	None	None	None
None	None	None	None
None	Canopy	None	None
None	None	None	None
None	None	None	None
None	None	None	None
None	None	None	None
None	None	None	None
None	None	None	None
.5 - 2 m	Canopy	None	None
None	Canopy	Small Woody Debris	None
None	Canopy	None	None
None	Canopy	None	Small Woody Debris
None	None	None	None
Canopy	Canopy	None	None
None	None	None	None
None	None	None	None
.5 - 2 m	Canopy	None	Small Woody Debris
None	None	None	None
.5 - 2 m	Canopy	None	None
None	None	None	None
None	None	None	None
.5 - 2 m	0 - .5 m	Small Woody Debris	Small Woody Debris
None	None	None	None
.5 - 2m	Canopy	Small Woody Debris	None
None	None	None	Small Woody Debris
0 - .5 m	Canopy	Small Woody Debris	None
None	None	None	None
None	Canopy	None	None
0 - .5 m	.5 - 2 m	Small Woody Debris	Small Woody Debris
.5 - 2m	None	None	None
Canopy	.5 - 2 m	None	Small Woody Debris
0 - .5 m	.5 - 2 m	Small Woody Debris	None
.5 - 2 m	0 - .5 m	None	Small Woody Debris
.5 - 2 m	Canopy	Undercut Bank	Small Woody Debris
0 - .5 m	Canopy	None	Small Woody Debris

100% -
90% -
00%

Substrate Categorization - Percent Occurrence

Percent Occurrence

22.73%

100.00%

72.73%

80% -

70% -

60% -

50% -

40% -

30% -

20% -

10% -

0% -

Substrate Categorization - Percent Occurrence

Percent Occurrence

46.15%

100.00%

61.54%

100%

90%

80%

70%

60%

50%

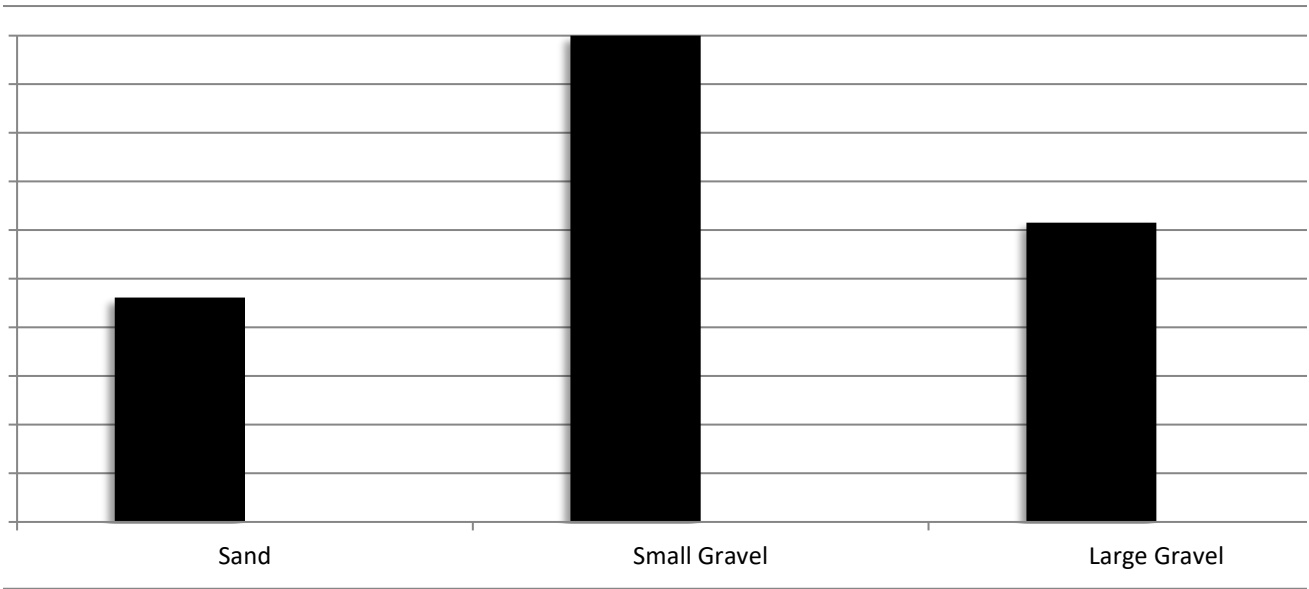
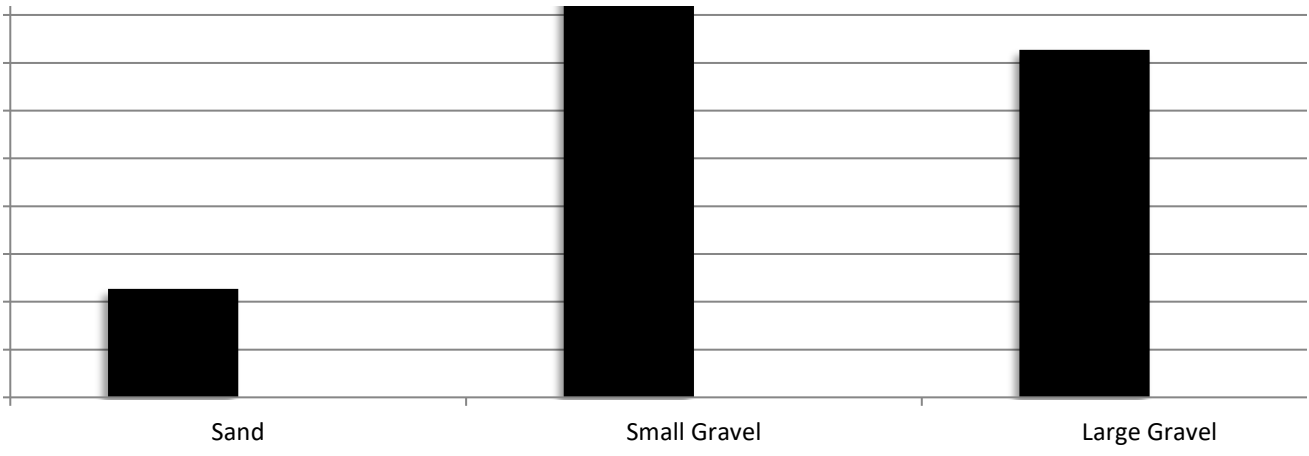
40%

30%

20%

10%

0%



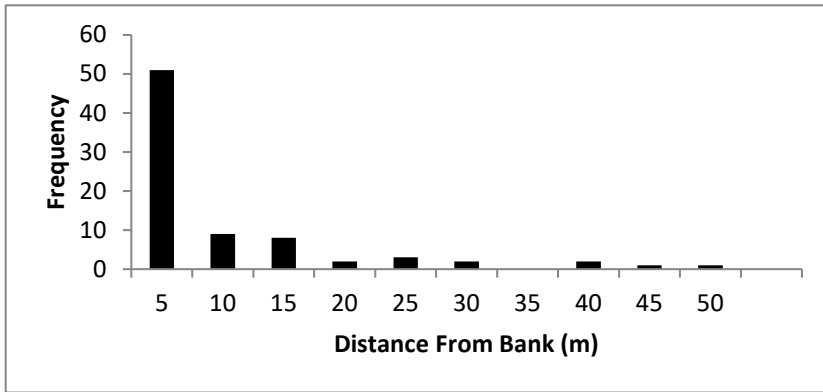




<i>Bin</i>	<i>Frequency</i>
5	51
10	9
15	8
20	2
25	3
30	2
35	0
40	2
45	1
50	1

Bin

- 0.1
- 0.2
- 0.3
- 0.4
- 0.5
- 0.6
- 0.7
- 0.8
- 0.9
- 1
- 1.1
- 1.2
- 1.3
- 1.4
- 1.5
- 1.6
- 1.7
- 1.8
- 1.9
- 2
- 2.5
- 3
- 3.5
- 4



Date	SurveyWeek	ActualFlow	AvgTurbidity	AvgTempF	AvgTempC	Section
1/10/2013	2		2.45	47.3	8.5	LFC
1/10/2013	2		2.45	47.3	8.5	LFC
1/24/2013	4		1.69	46.4	8	LFC
2/15/2013	7	1250	0.94	48.2	9	LFC
1/10/2013	2		2.45	47.3	8.5	LFC
1/10/2013	2		2.45	47.3	8.5	LFC
1/10/2013	2		2.45	47.3	8.5	LFC
1/10/2013	2		2.45	47.3	8.5	LFC
1/10/2013	2		2.45	47.3	8.5	LFC
1/17/2013	3		2.03	45.5	7.5	LFC
1/17/2013	3		2.03	45.5	7.5	LFC
1/17/2013	3		2.03	45.5	7.5	LFC
2/15/2013	7	1250	0.94	48.2	9	LFC
2/15/2013	7	1250	0.94	48.2	9	LFC
2/15/2013	7	1250	0.94	48.2	9	LFC
2/15/2013	7	1250	0.94	48.2	9	LFC
2/15/2013	7	1250	0.94	48.2	9	LFC
2/15/2013	7	1250	0.94	48.2	9	LFC
2/28/2013	9		1.25	50	10	LFC
2/28/2013	9		1.25	50	10	LFC
2/28/2013	9		1.25	50	10	LFC
2/28/2013	9		1.25	50	10	LFC
2/28/2013	9		1.25	50	10	LFC
2/28/2013	9	1750	1.25	50	10	LFC
3/5/2013	10		0.84	50	10	LFC
2/14/2013	7	1250	1.14	47.3	8.5	LFC
2/14/2013	7	1250	1.14	47.3	8.5	LFC
2/14/2013	7	1250	1.14	47.3	8.5	LFC
2/15/2013	7	1250	0.94	48.2	9	LFC
1/10/2013	2		2.45	47.3	8.5	LFC
2/14/2013	7	1250	1.14	47.3	8.5	LFC

Year	Month	Sample	NumRedds	Species	Initialnam
2013	January	2012-13	1	CHN	Moes Ditch
2013	January	2012-13	1	CHN	Moes Ditch
2013	January	2012-13	1	CHN	Lower Hatchery Ditch
2013	February	2012-13	1	CHN	Lower Hatchery Ditch
2013	January	2012-13	1	SH	Moes Ditch
2013	January	2012-13	1	SH	Lower Hatchery Ditch
2013	January	2012-13	1	SH	Lower Hatchery Ditch
2013	January	2012-13	1	SH	Lower Hatchery Ditch
2013	January	2012-13	1	SH	Lower Hatchery Ditch
2013	January	2012-13	1	SH	Lower Hatchery Ditch
2013	January	2012-13	1	SH	Moes Ditch
2013	January	2012-13	1	SH	Moes Ditch
2013	February	2012-13	1	SH	Lower Hatchery Ditch
2013	February	2012-13	1	SH	Lower Hatchery Ditch
2013	February	2012-13	1	SH	Lower Hatchery Ditch
2013	February	2012-13	1	SH	Moes Ditch
2013	February	2012-13	1	SH	Moes Ditch
2013	February	2012-13	1	SH	Moes Ditch
2013	February	2012-13	1	SH	Lower Hatchery Ditch
2013	February	2012-13	1	SH	Lower Hatchery Ditch
2013	February	2012-13	1	SH	Lower Hatchery Ditch
2013	February	2012-13	1	SH	Lower Hatchery Ditch
2013	February	2012-13	1	SH	Lower Hatchery Ditch
2013	February	2012-13	1	SH	Lower Hatchery Ditch
2013	February	2012-13	1	SH	Lower Hatchery Ditch
2013	March	2012-13	1	SH	Moes Ditch
2013	February	2012-13	0	Test	Steep SC
2013	February	2012-13	0	Test	Steep
2013	February	2012-13	0	Test	Steep
2013	February	2012-13	0	Test	Lower Hatchery Ditch
2013	January	2012-13	1	UNK Salmonid	Moes Ditch
2013	February	2012-13	1	UNK Salmonid	Steep SC

Name	Check	RM	RovNum	Reach	Rfplcomplex
Moes Ditch	OK	66.5	NA	1	1
Moes Ditch	OK	66.5	NA	1	1
Lower Hatchery Ditch	OK	66.5	NA	1	1
Lower Hatchery Ditch	OK	66.5	NA	1	1
Moes Ditch	OK	66.5	NA	1	1
Lower Hatchery Ditch	OK	66.5	NA	1	1
Lower Hatchery Ditch	OK	66.5	NA	1	1
Lower Hatchery Ditch	OK	66.5	NA	1	1
Lower Hatchery Ditch	OK	66.5	NA	1	1
Lower Hatchery Ditch	OK	66.5	NA	1	1
Moes Ditch	OK	66.5	NA	1	1
Moes Ditch	OK	66.5	NA	1	1
Lower Hatchery Ditch	OK	66.5	NA	1	1
Lower Hatchery Ditch	OK	66.5	NA	1	1
Lower Hatchery Ditch	OK	66.5	NA	1	1
Moes Ditch	OK	66.5	NA	1	1
Moes Ditch	OK	66.5	NA	1	1
Moes Ditch	OK	66.5	NA	1	1
Lower Hatchery Ditch	OK	66.5	NA	1	1
Lower Hatchery Ditch	OK	66.5	NA	1	1
Lower Hatchery Ditch	OK	66.5	NA	1	1
Lower Hatchery Ditch	OK	66.5	NA	1	1
Lower Hatchery Ditch	OK	66.5	NA	1	1
Lower Hatchery Ditch	OK	66.5	NA	1	1
Lower Hatchery Ditch	OK	66.5	NA	1	1
Moes Ditch	OK	66.5	NA	1	1
Steep SC	OK	61.1	NA	3	6
Steep	OK	61	NA	3	6
Steep	OK	61	NA	3	6
Lower Hatchery Ditch	OK	66.5	NA	1	1
Moes Ditch	OK	66.5	NA	1	1
Steep SC	OK	61.1	NA	3	6

RifflePosi	GeoUnit	NumSteelh	DistBank	UTM N	UTM E	GPS N
				4375057.0	624042.0	NA
				4375046.0	623947.0	NA
				4375060.0	623902.0	NA
				4375007.7	623705.7	NA
Middle	Riffle	0	3.5	4375043.0	623933.0	NA
Middle	Riffle	0	3	4375051.0	623890.0	NA
Middle	Riffle	0	1.5	4375067.0	623936.0	NA
Middle	Riffle	2	1	4375075.0	623951.0	NA
Middle	Riffle	1	1.2	4375077.0	623955.0	NA
Middle	Riffle	0	3	4375062.0	623896.0	NA
Middle	Glide	0	0.8	4375047.0	623946.0	NA
Middle	Riffle	0	0.1	4375044.0	623906.0	NA
Tail	Glide	0	1.8	4375016.0	623708.0	NA
Middle	Riffle	0	2	4375074.7	623952.8	NA
Middle	Riffle	0	0.2	4375074.8	623937.9	NA
Tail	Riffle	3	2.8	4375041.2	623897.0	NA
Middle	Riffle	0	3	4375037.3	623907.8	NA
Middle	Glide	0	1.2	4375043.2	623924.3	NA
Middle	Riffle	1	0.4	4375074.6	623951.2	NA
Middle	Riffle	2	1.1	4375076.9	623956.4	NA
Middle	Riffle	1	0.3	4375073.4	623965.7	NA
Middle	Riffle	0	1.2	4375075.6	623961.1	NA
Middle	Glide	1	0.3	4375082.1	623975.0	NA
Middle	Riffle	0	1.3	4375080.6	623981.9	NA
Middle	Riffle	3	2	4375043.9	623942.0	NA
				4369059.0	620147.5	NA
				4369162.0	620114.4	NA
				4369119.4	620088.4	NA
				4375008.2	623705.7	NA
				4375044.0	623934.0	NA
Middle	Riffle	0	3	4369062.8	620148.6	NA

Dist to bank

0.284286

Mean	1.50952381
Standard Error	0.228754887
Median	1.2
Mode	3
Standard Deviation	1.048286584
Sample Variance	1.098904762
Kurtosis	-0.910066929
Skewness	0.461596604
Range	3.4

Minimum	0.1
Maximum	3.5
Sum	31.7
Count	21

GPS W	ReddLength	ReddWidth	PotLength	PotWidth	Depth	Velocity1
NA						
NA						
NA						
NA						
NA	1.4	0.81	0.79	0.6	0.45	1.57
NA	1.1	1	0.6	0.4	0.29	0.85
NA	1.2	0.6	0.5	0.4	0.36	0.92
NA	1.1	0.8	0.4	0.35	0.14	1.77
NA	1	0.65	0.3	0.3	0.14	2.20
NA	1.1	1.5	0.73	0.6	0.26	1.41
NA	1.12	0.8	0.64	0.7	0.33	1.97
NA	1	0.66	0.5	0.44	0.22	1.15
NA	1	0.6	0.5	0.4	0.68	1.18
NA	0.9	0.65	0.4	0.3	0.11	2.36
NA	1.1	0.6	0.4	0.4	0.28	1.74
NA	1	0.6	0.5	0.4	0.26	1.77
NA	0.9	0.5	0.4	0.3	0.28	1.48
NA	0.9	0.4	0.4	0.4	0.46	0.72
NA	1.1	0.5	0.35	0.32	0.24	1.05
NA	0.65	0.5	0.3	0.25	0.22	1.02
NA	1	0.65	0.5	0.4	0.22	1.35
NA	1.4	0.8	0.6	0.4	0.19	1.38
NA	0.9	0.65	0.4	0.35	0.3	1.18
NA	1.4	0.5	0.4	0.3	0.08	1.74
NA	1.2	1	0.5	0.45	0.46	2.36
NA						
NA						
NA						
NA						
NA						
NA						
NA	2.6	1.58	0.8	0.68	0.44	2.30

<i>Redd Length</i>		<i>Pot Length</i>		<i>Dep</i>
Mean	1.07	Mean	0.48142857	Mean
Standard Error	0.040355563	Standard Error	0.02852973	Standard E
Median	1.1	Median	0.5	Median
Mode	1.1	Mode	0.4	Mode
Standard Deviat	0.18493242	Standard Devi	0.13073965	Standard C
Sample Varianc	0.0342	Sample Varian	0.01709286	Sample Va
Kurtosis	0.576117438	Kurtosis	0.34858543	Kurtosis
Skewness	0.148628075	Skewness	0.84341712	Skewness
Range	0.75	Range	0.49	Range

Minimum	0.65
Maximum	1.4
Sum	22.47
Count	21

Minimum	0.3
Maximum	0.79
Sum	10.11
Count	21

Minimum	
Maximum	
Sum	
Count	

Redd Width

Mean	0.703333333
Standard Error	0.052632297
Median	0.65
Mode	0.6
Standard Deviat	0.241191487
Sample Varianc	0.058173333
Kurtosis	5.163290723
Skewness	1.950160606
Range	1.1
Minimum	0.4
Maximum	1.5
Sum	14.77
Count	21

Pot Width

Mean	0.40285714
Standard Error	0.02429132
Median	0.4
Mode	0.4
Standard Devi	0.11131679
Sample Varian	0.01239143
Kurtosis	1.7171397
Skewness	1.3191959
Range	0.45
Minimum	0.25
Maximum	0.7
Sum	8.46
Count	21

Velo

Mean	
Standard E	
Median	
Mode	
Standard C	
Sample Va	
Kurtosis	
Skewness	
Range	
Minimum	
Maximum	
Sum	
Count	

Unit1	Velocity	Unit	__Mud_Silt	__Sand	__Gravel	__Pebble	__Cobble
-------	----------	------	------------	--------	----------	----------	----------

f/s	0.48	m/s	0	5	10	40	45
f/s	0.26	m/s	0	10	50	40	0
f/s	0.28	m/s	0	5	15	80	0
f/s	0.54	m/s	0	5	35	60	0
f/s	0.67	m/s	0	15	40	45	0
f/s	0.43	m/s	0	5	40	45	0
f/s	0.6	m/s	0	10	25	50	10
f/s	0.35	m/s	0	0	30	55	15
f/s	0.36	m/s	0	10	50	40	0
f/s	0.72	m/s	0	5	60	35	0
f/s	0.53	m/s	0	5	70	25	0
f/s	0.54	m/s	0	0	55	45	0
f/s	0.45	m/s	0	5	20	75	0
f/s	0.22	m/s	0	8	62	30	0
f/s	0.32	m/s	0	0	100	0	0
f/s	0.31	m/s	0	15	60	25	0
f/s	0.41	m/s	0	5	65	30	0
f/s	0.42	m/s	0	2	58	40	0
f/s	0.36	m/s	0	5	45	50	0
f/s	0.53	m/s	0	8	82	10	0
f/s	0.72	m/s	0	5	70	25	0

f/s	0.7	m/s	0	5	55	40	0
-----	-----	-----	---	---	----	----	---

Average Composition

<u>pth</u>	0.00	6.10	49.62	40.24	3.33
		6.10	49.62	40.23809524	3.333333333

0.284286

0.030555

0.26

0.22

0.14002

0.019606

1.918204

1.133806

0.6

	Mud/Silt	Sand	Gravel	Pebble	Cobble
Percent Occurrence	0%	86%	100%	95%	14%

0.08
0.68
5.97
21

city

0.452381
0.031996
0.43
0.54
0.146626
0.021499
-0.68628
0.374978
0.5
0.22
0.72
9.5
21

__Boulder	DomSubstra	DomSubstra1	DomSubstra2	SecSubstra	Overhead_C
-----------	------------	-------------	-------------	------------	------------

0	Cobble	Cobble	NA	Pebble	None
0	Gravel	Gravel	NA	Pebble	Canopy
0	Pebble	Pebble	NA	Gravel	0-.5 m above H2O
0	Pebble	Pebble	NA	Gravel	0-.5 m above H2O
0	Pebble	Pebble	NA	Gravel	0-.5 m above H2O
0	Pebble	Pebble	NA	Gravel	None
5	Pebble	Pebble	NA	Gravel	.5 - 2m above H2O
0	Pebble	Pebble	NA	Gravel	0-.5 m above H2O
0	Gravel	Gravel	NA	Pebble	0-.5 m above H2O
0	Gravel	Gravel	NA	Pebble	.5 - 2m above H2O
0	Gravel	Gravel	NA	Pebble	0-.5 m above H2O
0	Gravel	Gravel	NA	Pebble	0-.5 m above H2O
0	Pebble	Pebble	NA	Gravel	.5 - 2m above H2O
0	Gravel	Gravel	NA	Pebble	0-.5 m above H2O
0	Gravel	Gravel	NA	NA	0-.5 m above H2O
0	Gravel	Gravel	NA	Pebble	Canopy
0	Gravel	Gravel	NA	Pebble	Canopy
0	Gravel	Gravel	NA	Pebble	0-.5 m above H2O
0	Pebble	Pebble	NA	Gravel	0-.5 m above H2O
0	Gravel	Gravel	NA	Pebble	.5 - 2m above H2O
0	Gravel	Gravel	NA	Pebble	None

0	Gravel	Gravel	NA	Pebble	None
---	--------	--------	----	--------	------

0.24
0.23809524

Boulder
5%

Cobble	Pebble
Gravel	Pebble
Pebble	Gravel
Pebble	Gravel

100%
90%

0

Pebble	Gravel
Pebble	Gravel
Pebble	Gravel
Pebble	Gravel
Gravel	Pebble
Gravel	Pebble
Gravel	Pebble
Gravel	Pebble
Pebble	Gravel
Gravel	Pebble
Gravel	NA
Gravel	Pebble
Gravel	Pebble
Gravel	Pebble
Pebble	Gravel
Gravel	Pebble
Gravel	Pebble

80%

70%

60%

50%

40%

30%

20%

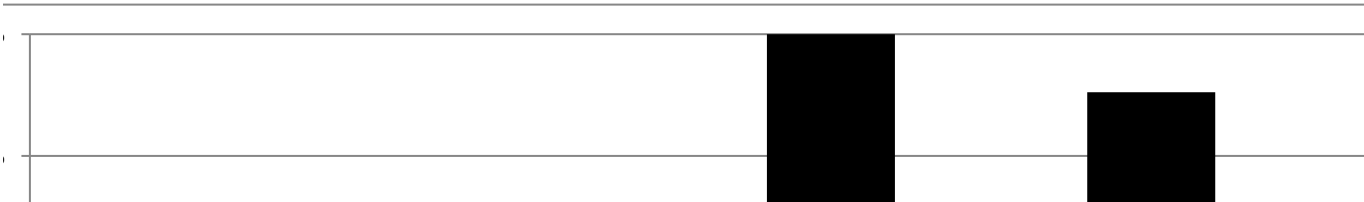
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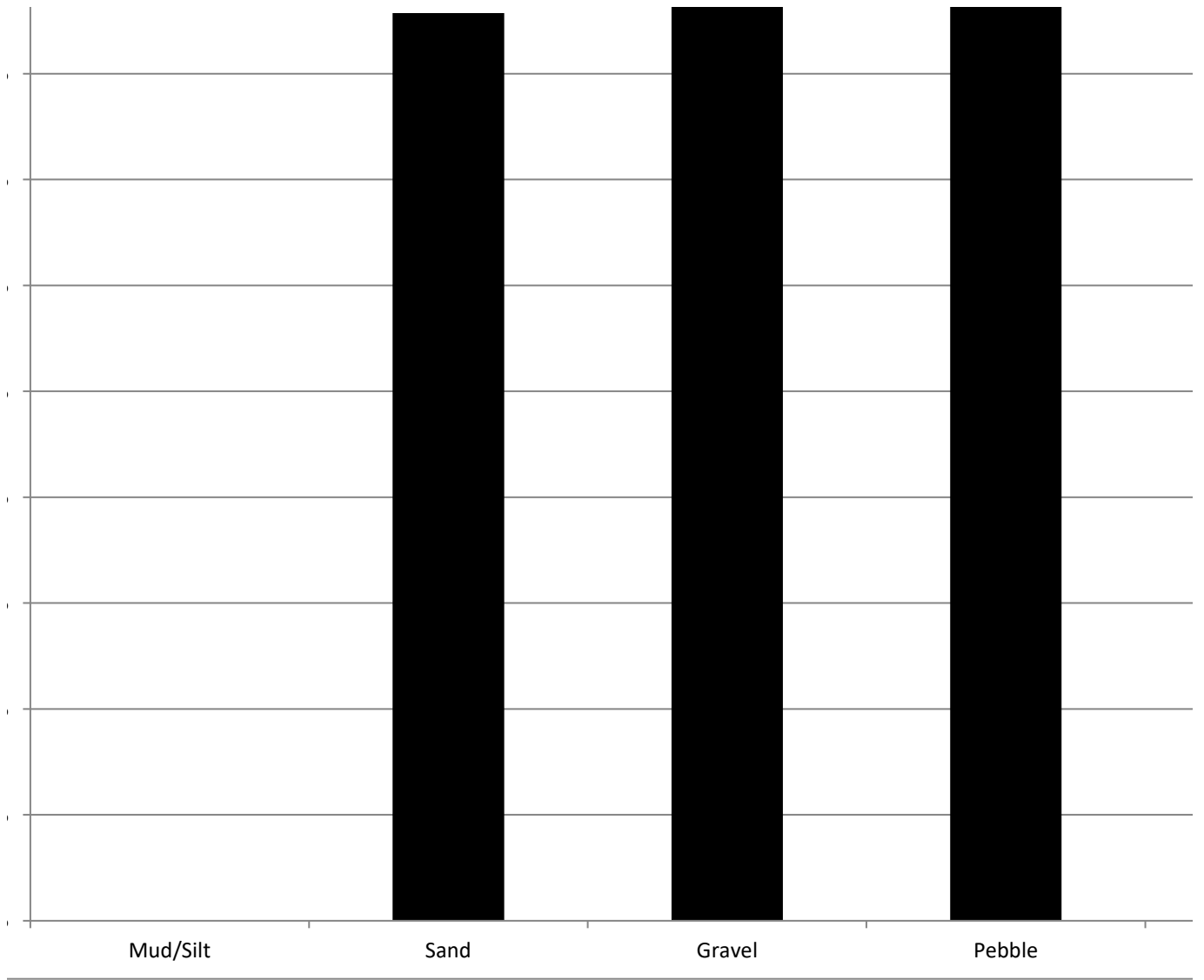
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Overhead_2	Overhead_3	DomOHCover	SecOHCover	Instream_C
------------	------------	------------	------------	------------

None	None	None	None	None
None	None	Canopy	None	Small Woody Debris
.5 - 2m above H2O	Canopy	0-.5 m above H2O	.5 - 2m above H2O	Small Woody Debris
.5 - 2m above H2O	Canopy	0-.5 m above H2O	.5 - 2m above H2O	Small Woody Debris
.5 - 2m above H2O	Canopy	0-.5 m above H2O	.5 - 2m above H2O	Small Woody Debris
None	Canopy	None	None	None
0-.5 m above H2O	Canopy	.5 - 2m above H2O	0-.5 m above H2O	Small Woody Debris
.5 - 2m above H2O	Canopy	0-.5 m above H2O	.5 - 2m above H2O	Undercut Bank
.5 - 2m above H2O	Canopy	0-.5 m above H2O	.5 - 2m above H2O	Small Woody Debris
Canopy	None	.5 - 2m above H2O	Canopy	None
.5 - 2m above H2O	Canopy	0-.5 m above H2O	.5 - 2m above H2O	None
.5 - 2m above H2O	Canopy	0-.5 m above H2O	.5 - 2m above H2O	None
Canopy	None	.5 - 2m above H2O	Canopy	None
.5 - 2m above H2O	Canopy	0-.5 m above H2O	.5 - 2m above H2O	Small Woody Debris
.5 - 2m above H2O	Canopy	0-.5 m above H2O	.5 - 2m above H2O	Submerged Aq. Veg
0-.5 m above H2O	None	Canopy	0-.5 m above H2O	None
.5 - 2m above H2O	None	Canopy	.5 - 2m above H2O	Small Woody Debris
.5 - 2m above H2O	Canopy	0-.5 m above H2O	.5 - 2m above H2O	None
.5 - 2m above H2O	Canopy	0-.5 m above H2O	.5 - 2m above H2O	Undercut Bank
Canopy	None	.5 - 2m above H2O	Canopy	Small Woody Debris
None	None	None	None	None

Canopy None None Canopy None





Instream_2	Instream_3	Instream_4	DomIScover	SecIScover
------------	------------	------------	------------	------------

None	None	None	None	None
None	None	None	Small Woody Debris	None
None	None	None	Small Woody Debris	None
None	None	None	Small Woody Debris	None
None	None	None	Small Woody Debris	None
None	None	Small Woody Debris	None	None
Submerged Aq. Veg	None	None	Small Woody Debris	Submerged Aq. Veg
Submerged Aq. Veg	Small Woody Debris	None	Undercut Bank	Submerged Aq. Veg
Submerged Aq. Veg	None	None	Small Woody Debris	Submerged Aq. Veg
Small Woody Debris	None	None	None	Small Woody Debris
Undercut Bank	Submerged Aq. Veg	None	None	Undercut Bank
None	None	None	None	None
None	None	None	None	None
Submerged Aq. Veg	None	None	Small Woody Debris	Submerged Aq. Veg
Small Woody Debris	None	None	Submerged Aq. Veg	Small Woody Debris
None	Small Woody Debris	None	None	None
Submerged Aq. Veg	None	None	Small Woody Debris	Submerged Aq. Veg
None	None	None	None	None
None	None	None	Undercut Bank	None
None	None	None	Small Woody Debris	None
None	None	None	None	None

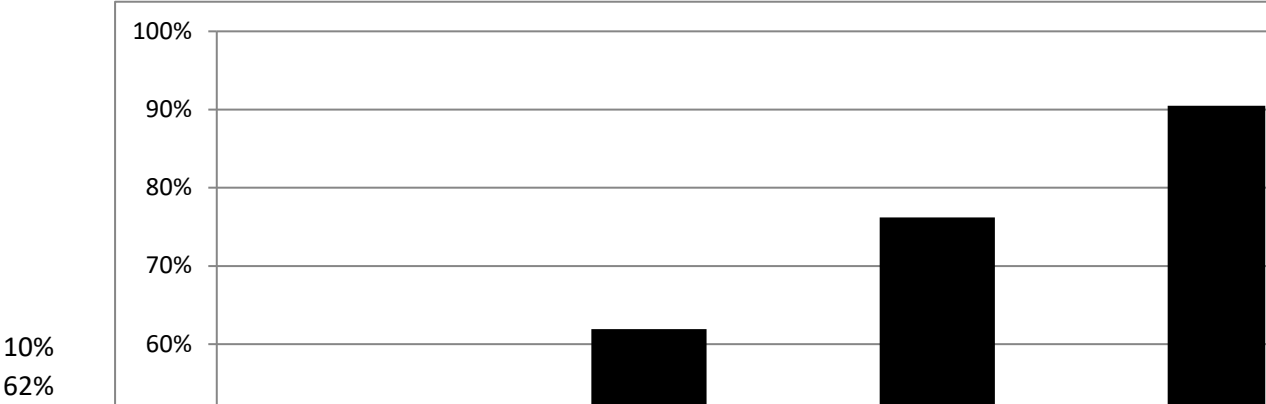
None	None	None	None	None
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None
0-0.5 m

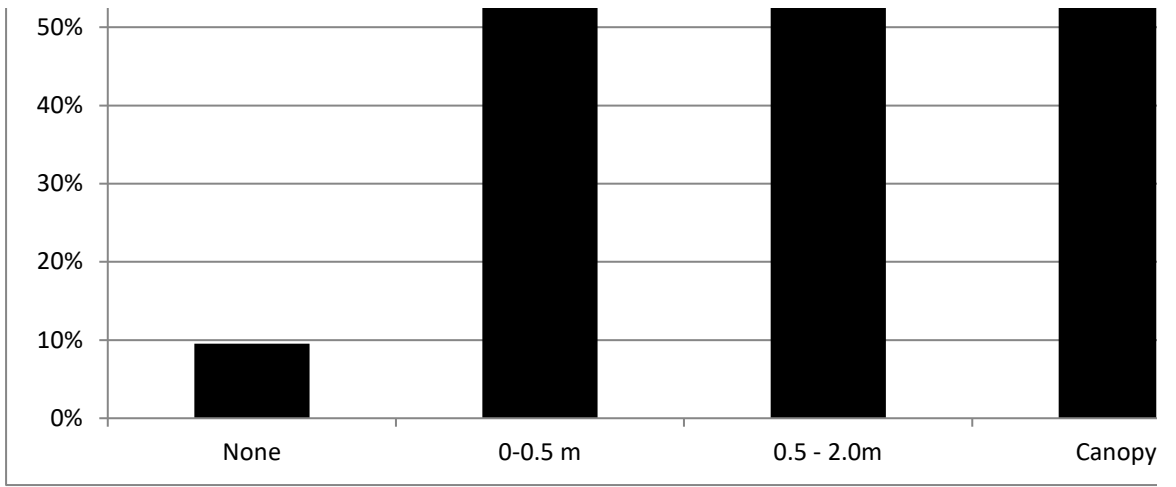
0.5 - 2.0m
Canopy

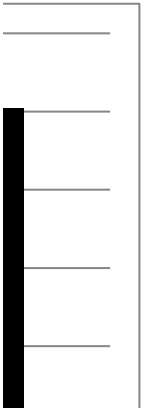


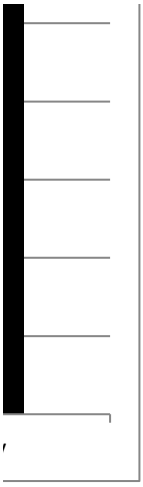
Area_Prev_	Survey Type	Comment
	Full Coverage	
	Full Coverage	
	Full Coverage	
	Full Coverage	
No	Full Coverage	
No	Full Coverage	
No	Full Coverage	
No	Full Coverage	
No	Full Coverage	
No	Full Coverage	
No	Full Coverage	
No	Full Coverage	
No	Full Coverage	
No	Full Coverage	
No	Full Coverage	
No	Full Coverage	
No	Full Coverage	
No	Full Coverage	
No	Full Coverage	just above picket weir
No	Full Coverage	
No	Full Coverage	
No	Full Coverage	
No	Full Coverage	
No	Full Coverage	
No	Full Coverage	
No	Full Coverage	
No	Full Coverage	Likely SH Redd



76%
90%







Column1

Mean	1.07
Standard E	0.040356
Median	1.1
Mode	1.1
Standard D	0.184932
Sample Var	0.0342
Kurtosis	0.576117
Skewness	0.148628
Range	0.75
Minimum	0.65
Maximum	1.4
Sum	22.47
Count	21

Column1

Mean	0.703333
Standard E	0.052632
Median	0.65
Mode	0.6
Standard D	0.241191
Sample Var	0.058173
Kurtosis	5.163291
Skewness	1.950161
Range	1.1
Minimum	0.4
Maximum	1.5
Sum	14.77
Count	21

Date	SurveyWee	ActualFlow	AvgTurbiditi	AvgTempF	AvgTempC	Section	Year	Month
1/10/2013	1	1788	2.45	47.3	8.5	LFC	2013	January
1/10/2013	1	1788	2.45	47.3	8.5	LFC	2013	January
1/10/2013	1	1788	2.45	47.3	8.5	LFC	2013	January
1/10/2013	1	1788	2.45	47.3	8.5	LFC	2013	January
1/10/2013	1	1788	2.45	47.3	8.5	LFC	2013	January
1/10/2013	1	1788	2.45	47.3	8.5	LFC	2013	January
1/10/2013	1	1788	2.45	47.3	8.5	LFC	2013	January
1/10/2013	1	1788	2.45	47.3	8.5	LFC	2013	January
1/17/2013	2	1779	2.03	45.5	7.5	LFC	2013	January
1/17/2013	2	1779	2.03	45.5	7.5	LFC	2013	January
1/17/2013	2	1779	2.03	45.5	7.5	LFC	2013	January
1/24/2013	3	1818	1.69	46.4	8	LFC	2013	January
2/14/2013	6	1299	1.14	47.3	8.5	LFC	2013	February
2/14/2013	6	1299	1.14	47.3	8.5	LFC	2013	February
2/14/2013	6	1299	1.14	47.3	8.5	LFC	2013	February
2/14/2013	6	1299	1.14	47.3	8.5	LFC	2013	February
2/15/2013	6	1320	0.94	48.2	9	LFC	2013	February
2/15/2013	6	1320	0.94	48.2	9	LFC	2013	February
2/15/2013	6	1320	0.94	48.2	9	LFC	2013	February
2/15/2013	6	1320	0.94	48.2	9	LFC	2013	February
2/15/2013	6	1320	0.94	48.2	9	LFC	2013	February
2/15/2013	6	1320	0.94	48.2	9	LFC	2013	February
2/15/2013	6	1320	0.94	48.2	9	LFC	2013	February
2/15/2013	6	1320	0.94	48.2	9	LFC	2013	February
2/28/2013	8	1850	1.25	50	10	LFC	2013	February
2/28/2013	8	1850	1.25	50	10	LFC	2013	February
2/28/2013	8	1850	1.25	50	10	LFC	2013	February
2/28/2013	8	1850	1.25	50	10	LFC	2013	February
2/28/2013	8	1850	1.25	50	10	LFC	2013	February
2/28/2013	8	1850	1.25	50	10	LFC	2013	February
3/5/2013	9		0.84	50	10	LFC	2013	March

Sample	NumRedds Species	Initialnam	Name	Check	RM
2012-13	1 CHN	Moes Ditch	Moes Ditch	OK	66.5
2012-13	1 CHN	Moes Ditch	Moes Ditch	OK	66.5
2012-13	1 SH	Moes Ditch	Moes Ditch	OK	66.5
2012-13	1 SH	Lower Hatchery Ditch	Lower Hatchery Ditch	OK	66.5
2012-13	1 SH	Lower Hatchery Ditch	Lower Hatchery Ditch	OK	66.5
2012-13	1 SH	Lower Hatchery Ditch	Lower Hatchery Ditch	OK	66.5
2012-13	1 SH	Lower Hatchery Ditch	Lower Hatchery Ditch	OK	66.5
2012-13	1 UNK Salmo	Moes Ditch	Moes Ditch	OK	66.5
2012-13	1 SH	Lower Hatchery Ditch	Lower Hatchery Ditch	OK	66.5
2012-13	1 SH	Moes Ditch	Moes Ditch	OK	66.5
2012-13	1 SH	Moes Ditch	Moes Ditch	OK	66.5
2012-13	1 CHN	Lower Hatchery Ditch	Lower Hatchery Ditch	OK	66.5
2012-13	0 Test	Steep SC	Steep SC	OK	61.1
2012-13	0 Test	Steep	Steep	OK	61
2012-13	0 Test	Steep	Steep	OK	61
2012-13	1 UNK Salmo	Steep SC	Steep SC	OK	61.1
2012-13	1 CHN	Lower Hatchery Ditch	Lower Hatchery Ditch	OK	66.5
2012-13	1 SH	Lower Hatchery Ditch	Lower Hatchery Ditch	OK	66.5
2012-13	1 SH	Lower Hatchery Ditch	Lower Hatchery Ditch	OK	66.5
2012-13	1 SH	Lower Hatchery Ditch	Lower Hatchery Ditch	OK	66.5
2012-13	1 SH	Moes Ditch	Moes Ditch	OK	66.5
2012-13	1 SH	Moes Ditch	Moes Ditch	OK	66.5
2012-13	1 SH	Moes Ditch	Moes Ditch	OK	66.5
2012-13	0 Test	Lower Hatchery Ditch	Lower Hatchery Ditch	OK	66.5
2012-13	1 SH	Lower Hatchery Ditch	Lower Hatchery Ditch	OK	66.5
2012-13	1 SH	Lower Hatchery Ditch	Lower Hatchery Ditch	OK	66.5
2012-13	1 SH	Lower Hatchery Ditch	Lower Hatchery Ditch	OK	66.5
2012-13	1 SH	Lower Hatchery Ditch	Lower Hatchery Ditch	OK	66.5
2012-13	1 SH	Lower Hatchery Ditch	Lower Hatchery Ditch	OK	66.5
2012-13	1 SH	Lower Hatchery Ditch	Lower Hatchery Ditch	OK	66.5
2012-13	1 SH	Moes Ditch	Moes Ditch	OK	66.5

RovNum	Reach	Rfplcomple	RifflePosi	GeoUnit	NumSteelh	DistBank	UTM N	UTM E	GPS N
NA		1	1				4375057	624042	NA
NA		1	1				4375046	623947	NA
NA		1	1 Middle	Riffle	0	3.5	4375043	623933	NA
NA		1	1 Middle	Riffle	0	3	4375051	623890	NA
NA		1	1 Middle	Riffle	0	1.5	4375067	623936	NA
NA		1	1 Middle	Riffle	2	1	4375075	623951	NA
NA		1	1 Middle	Riffle	1	1.2	4375077	623955	NA
NA		1	1				4375044	623934	NA
NA		1	1 Middle	Riffle	0	3	4375062	623896	NA
NA		1	1 Middle	Glide	0	0.8	4375047	623946	NA
NA		1	1 Middle	Riffle	0	0.1	4375044	623906	NA
NA		1	1				4375060	623902	NA
NA		3	6				4369059	620147.5	NA
NA		3	6				4369162	620114.4	NA
NA		3	6				4369119	620088.4	NA
NA		3	6 Middle	Riffle	0	3	4369063	620148.6	NA
NA		1	1				4375008	623705.7	NA
NA		1	1 Tail	Glide	0	1.8	4375016	623708	NA
NA		1	1 Middle	Riffle	0	2	4375075	623952.8	NA
NA		1	1 Middle	Riffle	0	0.2	4375075	623937.9	NA
NA		1	1 Tail	Riffle	3	2.8	4375041	623897	NA
NA		1	1 Middle	Riffle	0	3	4375037	623907.8	NA
NA		1	1 Middle	Glide	0	1.2	4375043	623924.3	NA
NA		1	1				4375008	623705.7	NA
NA		1	1 Middle	Riffle	1	0.4	4375075	623951.2	NA
NA		1	1 Middle	Riffle	2	1.1	4375077	623956.4	NA
NA		1	1 Middle	Riffle	1	0.3	4375073	623965.7	NA
NA		1	1 Middle	Riffle	0	1.2	4375076	623961.1	NA
NA		1	1 Middle	Glide	1	0.3	4375082	623975	NA
NA		1	1 Middle	Riffle	0	1.3	4375081	623981.9	NA
NA		1	1 Middle	Riffle	3	2	4375044	623942	NA

AVG	1.57
Median	1.35
Mode	3

GPS W	ReddLength	ReddWidth	PotLength	PotWidth	Depth	Velocity1	Unit1	Velocity	Unit
NA									
NA									
NA	1.4	0.81	0.79	0.6	0.45	1.57 f/s		0.48 m/s	
NA	1.1	1	0.6	0.4	0.29	0.85 f/s		0.26 m/s	
NA	1.2	0.6	0.5	0.4	0.36	0.92 f/s		0.28 m/s	
NA	1.1	0.8	0.4	0.35	0.14	1.77 f/s		0.54 m/s	
NA	1	0.65	0.3	0.3	0.14	2.2 f/s		0.67 m/s	
NA									
NA	1.1	1.5	0.73	0.6	0.26	1.41 f/s		0.43 m/s	
NA	1.12	0.8	0.64	0.7	0.33	1.97 f/s		0.6 m/s	
NA	1	0.66	0.5	0.44	0.22	1.15 f/s		0.35 m/s	
NA									
NA									
NA									
NA									
NA	2.6	1.58	0.8	0.68	0.44	2.3 f/s		0.7 m/s	
NA									
NA	1	0.6	0.5	0.4	0.68	1.18 f/s		0.36 m/s	
NA	0.9	0.65	0.4	0.3	0.11	2.36 f/s		0.72 m/s	
NA	1.1	0.6	0.4	0.4	0.28	1.74 f/s		0.53 m/s	
NA	1	0.6	0.5	0.4	0.26	1.77 f/s		0.54 m/s	
NA	0.9	0.5	0.4	0.3	0.28	1.48 f/s		0.45 m/s	
NA	0.9	0.4	0.4	0.4	0.46	0.72 f/s		0.22 m/s	
NA									
NA	1.1	0.5	0.35	0.32	0.24	1.05 f/s		0.32 m/s	
NA	0.65	0.5	0.3	0.25	0.22	1.02 f/s		0.31 m/s	
NA	1	0.65	0.5	0.4	0.22	1.35 f/s		0.41 m/s	
NA	1.4	0.8	0.6	0.4	0.19	1.38 f/s		0.42 m/s	
NA	0.9	0.65	0.4	0.35	0.3	1.18 f/s		0.36 m/s	
NA	1.4	0.5	0.4	0.3	0.08	1.74 f/s		0.53 m/s	
NA	1.2	1	0.5	0.45	0.46	2.36 f/s		0.72 m/s	
	1.14	0.75	0.49	0.43	0.3			0.48	
	1.05	0.63	0.45	0.4	0.27			0.49	
	1.1	0.6	0.4	0.4	0.14			0.54	

__Mud_Silt__Sand __Gravel __Pebble __Cobble __Boulder DomSubstr DomSubstr DomSubstr SecSubstra

0	5	10	40	45	0 Cobble	Cobble	NA	Pebble
0	10	50	40	0	0 Gravel	Gravel	NA	Pebble
0	5	15	80	0	0 Pebble	Pebble	NA	Gravel
0	5	35	60	0	0 Pebble	Pebble	NA	Gravel
0	15	40	45	0	0 Pebble	Pebble	NA	Gravel
0	5	40	45	0	0 Pebble	Pebble	NA	Gravel
0	10	25	50	10	5 Pebble	Pebble	NA	Gravel
0	0	30	55	15	0 Pebble	Pebble	NA	Gravel

0	5	55	40	0	0 Gravel	Gravel	NA	Pebble
0	10	50	40	0	0 Gravel	Gravel	NA	Pebble
0	5	60	35	0	0 Gravel	Gravel	NA	Pebble
0	5	70	25	0	0 Gravel	Gravel	NA	Pebble
0	0	55	45	0	0 Gravel	Gravel	NA	Pebble
0	5	20	75	0	0 Pebble	Pebble	NA	Gravel
0	8	62	30	0	0 Gravel	Gravel	NA	Pebble

0	0	100	0	0	0 Gravel	Gravel	NA	NA
0	15	60	25	0	0 Gravel	Gravel	NA	Pebble
0	5	65	30	0	0 Gravel	Gravel	NA	Pebble
0	2	58	40	0	0 Gravel	Gravel	NA	Pebble
0	5	45	50	0	0 Pebble	Pebble	NA	Gravel
0	8	82	10	0	0 Gravel	Gravel	NA	Pebble
0	5	70	25	0	0 Gravel	Gravel	NA	Pebble

Average Composition

0	5.57	46.93	44.64	1.79	0.36
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Perecent Occurrence

0	0.86	100	0.95	0.14	0.05
---	------	-----	------	------	------

Overhead_ Overhead_ Overhead_ DomOHCov SecOHCov Instream_1 Instream_2 Instream_3 Instream_4 DomIScore

None	None	None	None	None	None	None	None	None	None
Canopy	None	None	Canopy	None	Small Woo	None	None	None	Small Woo
0-.5 m abo	.5 - 2m abc	Canopy	0-.5 m abo	.5 - 2m abc	Small Woo	None	None	None	Small Woo
0-.5 m abo	.5 - 2m abc	Canopy	0-.5 m abo	.5 - 2m abc	Small Woo	None	None	None	Small Woo
0-.5 m abo	.5 - 2m abc	Canopy	0-.5 m abo	.5 - 2m abc	Small Woo	None	None	None	Small Woo

None	None	Canopy	None	None	None	None	None	Small Woo	None
.5 - 2m abc	0-.5 m abo	Canopy	.5 - 2m abc	0-.5 m abo	Small Woo	Submerg	None	None	Small Woo
0-.5 m abo	.5 - 2m abc	Canopy	0-.5 m abo	.5 - 2m abc	Undercut B	Submerg	Small Woo	None	Undercut B

None	Canopy	None	None	Canopy	None	None	None	None	None
0-.5 m abo	.5 - 2m abc	Canopy	0-.5 m abo	.5 - 2m abc	Small Woo	Submerg	None	None	Small Woo
.5 - 2m abc	Canopy	None	.5 - 2m abc	Canopy	None	Small Woo	None	None	None
0-.5 m abo	.5 - 2m abc	Canopy	0-.5 m abo	.5 - 2m abc	None	Undercut B	Submerg	None	None
0-.5 m abo	.5 - 2m abc	Canopy	0-.5 m abo	.5 - 2m abc	None	None	None	None	None
.5 - 2m abc	Canopy	None	.5 - 2m abc	Canopy	None	None	None	None	None
0-.5 m abo	.5 - 2m abc	Canopy	0-.5 m abo	.5 - 2m abc	Small Woo	Submerg	None	None	Small Woo
0-.5 m abo	.5 - 2m abc	Canopy	0-.5 m abo	.5 - 2m abc	Submerg	Small Woo	None	None	Submerg
Canopy	0-.5 m abo	None	Canopy	0-.5 m abo	None	None	Small Woo	None	None
Canopy	.5 - 2m abc	None	Canopy	.5 - 2m abc	Small Woo	Submerg	None	None	Small Woo
0-.5 m abo	.5 - 2m abc	Canopy	0-.5 m abo	.5 - 2m abc	None	None	None	None	None
0-.5 m abo	.5 - 2m abc	Canopy	0-.5 m abo	.5 - 2m abc	Undercut B	None	None	None	Undercut B
.5 - 2m abc	Canopy	None	.5 - 2m abc	Canopy	Small Woo	None	None	None	Small Woo
None	None	None	None	None	None	None	None	None	None

Overhead Cover by Percent Occurrence

None	0.0 - 0.5 m	0.5 - 2.0 m	Canopy
0.1	0.62	0.76	0.9

Instream Cover by Percent Occurrence

None	SWD	LWD	AV	UB
0.24	0.67	0	0.33	0.14

Sec1Scover Area_Prev_Survey Typ Comment

		Full Covera
		Full Covera
None	No	Full Coverage
None	No	Full Covera
None	No	Full Covera
None	No	Full Covera
None	No	Full Covera
None	No	Full Covera
None	No	Full Covera
Submergec	No	Full Covera
Submergec	No	Full Covera
		Full Covera
		Full Coverage
		Full Coverage
		Full Coverage
None	No	Full Covera Likely SH Redd
		Full Covera
Submergec	No	Full Covera
Small Woo	No	Full Covera
Undercut B	No	Full Covera
None	No	Full Covera
None	No	Full Covera
Submergec	No	Full Covera
		Full Coverage
Small Woo	No	Full Covera
None	No	Full Covera just above picket weir
Submergec	No	Full Covera
None	No	Full Covera
None	No	Full Covera
None	No	Full Covera
None	No	Full Covera

Date	SurveyWeek	Section	Year	Month	Sample	NumRedds	Species
1/8/2014	1.1	LFC	2014	January	2013-2014	1	SH
1/8/2014	1.1	LFC	2014	January	2013-2014	1	SH
1/8/2014	1.1	LFC	2014	January	2013-2014	1	SH
1/9/2014	1.2	LFC	2014	January	2013-2014	1	SH
1/14/2014	2.1	LFC	2014	January	2013-2014	1	SH
1/14/2014	2.1	LFC	2014	January	2013-2014	1	SH
1/14/2014	2.1	LFC	2014	January	2013-2014	1	SH
1/14/2014	2.1	LFC	2014	January	2013-2014	1	SH
1/14/2014	2.1	LFC	2014	January	2013-2014	1	SH
1/14/2014	2.1	LFC	2014	January	2013-2014	1	SH
1/14/2014	2.1	LFC	2014	January	2013-2014	1	SH
1/14/2014	2.1	LFC	2014	January	2013-2014	1	SH
1/14/2014	2.1	LFC	2014	January	2013-2014	1	SH
1/28/2014	4.1	LFC	2014	January	2013-2014	1	SH
1/28/2014	4.1	LFC	2014	January	2013-2014	1	SH
1/28/2014	4.1	LFC	2014	January	2013-2014	1	SH
1/28/2014	4.1	LFC	2014	January	2013-2014	1	SH
1/29/2014	4.2	LFC	2014	January	2013-2014	1	SH
2/6/2014	5.1	LFC	2014	February	2013-2014	1	SH
2/6/2014	5.1	LFC	2014	February	2013-2014	1	SH
3/6/2014		LFC	2014	March	2013-2014	1	SH
4/26/2014	8	LFC	2014	April	2013-2014	1	SH
4/26/2014	8	LFC	2014	April	2013-2014	1	SH
4/26/2014	8	LFC	2014	April	2013-2014	1	SH
4/26/2014	8	LFC	2014	April	2013-2014	1	SH

Initialnam	Name	RifflePosi	GeoUnit	NumSteelhe	DistBank
Moe's Ditch	Moe's Ditch	Middle	Riffle	2	1.5
Lower Hatchery Ditch	Lower Hatchery Ditch	Middle	Glide	0	2.5
Lower Hatchery Ditch	Lower Hatchery Ditch	Middle	Glide	0	5
Lower Aud RR, bottom	Lower Aud RR, bottom	Tail	Glide	0	3
Moe's Ditch	Moe's Ditch	Middle	Glide	1	2
Moe's Ditch	Moe's Ditch	Head	Riffle	2	3
Moe's Ditch	Moe's Ditch	Middle	Riffle	0	3.5
Lower Aud RR, bottom	Lower Aud RR, bottom	Tail	Glide	0	5
Table Mountain	Table Mountain	Head	Riffle	1	1
Moe's Ditch	Moe's Ditch	Middle	Glide	0	1
Lower Aud RR	Lower Aud RR	Middle	Riffle	0	3.5
Hatchery Side Channel	Hatchery Side Channel	Middle	Glide	0	1
Lower Aud RR, bottom	Lower Aud RR, bottom	Middle	Glide	1	8
Moe's Ditch	Moe's Ditch	Middle	Glide	0	2
Moe's Ditch	Moe's Ditch	Middle	Glide	0	4
Moe's Ditch	Moe's Ditch	Middle	Glide	0	2
Bedrock	Bedrock	Middle	Riffle	0	0.5
Upper Alec	Upper Alec	Head	Glide	0	2.5
Moe's Ditch	Moe's Ditch	Middle		2	4
Moe's Ditch (lower)	Moe's Ditch (lower)	Middle	Riffle	2	1.5
Upper Hatchery Ditch	Upper Hatchery Ditch	Middle		4	2.5
Cottonwood	Cottonwood	Head	Riffle	1	1.5
Moe's Ditch	Moe's Ditch	Middle	Riffle	0	5
Moe's Ditch	Moe's Ditch	Middle	Glide	2	4.5
Moe's Ditch	Moe's Ditch	Middle	Glide	0	3.5

GPS W	ReddLength	ReddWidth	PotLength	PotWidth	Depth	Velocity	__Mud_Silt	
	1.5	1	0.5	0.5		0.38	0.66	0
	1.25	1.2	0.3	0.3		0.32	0.36	0
	1.2	1	0.4	0.4		0.24	0.39	0
	1	1	0.3	0.3		0.26	0.53	0
	1.75	1.25	0.3	0.3		0.3	0.52	0
	1.25	1	0.3	0.3		0.42	0.5	0
	1.25	1	0.3	0.3		0.4	0.5	0
	1.8	0.85	0.4	0.4		0.49	0.35	0
	1.25	1	0.3	0.3		0.65	0.22	0
	1	0.75	0.3	0.3		0.42	0.41	0
	1.7	0.9	0.3	0.3		0.33	0.42	0
	1.5	0.9	0.3	0.4		0.38	0.31	0
	2	1.25	0.25	0.25		0.6	0.45	0
	1.3	0.65	0.5	0.4		0.36	0.41	0
	1.2	0.8	0.4	0.35		0.34	0.35	0
	1.5	1.1	0.6	0.4		0.3	0.41	0
	2	0.7	0.5	0.35		0.34	0.2	0
	0.82	0.7	0.26	0.1		0.48	0.33	0
			0.6	0.5		0.26		0
	0.7	0.7	0.4	0.4		0.32		0
	0.85	0.7	0.5	0.5		0.5	0.46	0
	1.2	1	0.75	0.5				0
	0.8	0.65	0.6	0.4		0.38	0.43	0
	0.7	0.8	0.5	0.6		0.28	0.43	0
	0.8	0.6	0.4	0.4		0.38	0.46	0

Substrate Size Class	Average	Range
Silt (<0.06 mm)	0.0%	0
Sand (0.06-1.00 mm)	9.8%	0-50%
Gravel (2-15 mm)	34.0%	10-70%
Pebble (16-63 mm)	39.8%	10-75%
Cobble (64-256 mm)	15.4%	0-65%
Boulder (>256 mm)	0.6%	0-10%

__Sand	__Gravel	__Pebble	__Cobble	__Boulder	Overhead_C	Instream_C	Instream_2
0	10	75	15	0	None	No	
10	50	40	0	0	None	Yes	
20	60	20	0	0		1 Yes	
0	30	70	0	0	None	No	
10	50	40	0	0		1 No	
0	50	50	0	0		1 No	
0	30	30	30	0		1 No	
0	60	40	0	0	None	No	
0	50	50	0	0		1 S	
15	30	30	15	10		1 No	
0	30	60	10	0	None	No	
0	50	50	0	0		1 S	
5	70	20	5	0	None	No	
30	30	30	10	0	None	S	
50	20	10	20	0	None	No	
10	10	30	50	0	None	S	
10	50	10	30	0	None	U	
5	10	20	60	5	None	No	
30	40	30	0	0		1 S	
5	10	20	65	0	None	No	
10	30	30	30	0		1 L	
10	30	60	0	0	None	No	
5	10	70	15	0		2 No	
10	20	65	5	0		2 No	
10	20	45	25	0	None	No	

Instream_3	Instream_4	DomIScover	SecIScover	Area_Prev_	Survey Type	Comment
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1

Date	Section	Name	RifflePosi	GeoUnit	NumSteelhe	DistBank	GPS W
1/8/2014	LFC	Moe's Ditch	Middle	Riffle	2	1.5	
1/8/2014	LFC	Lower Hatchery Ditch	Middle	Glide	0	2.5	
1/8/2014	LFC	Lower Hatchery Ditch	Middle	Glide	0	5	
1/9/2014	LFC	Lower Aud RR, bottom	Tail	Glide	0	3	
1/14/2014	LFC	Moe's Ditch	Middle	Glide	1	2	
1/14/2014	LFC	Moe's Ditch	Head	Riffle	2	3	
1/14/2014	LFC	Moe's Ditch	Middle	Riffle	0	3.5	
1/14/2014	LFC	Lower Aud RR, bottom	Tail	Glide	0	5	
1/14/2014	LFC	Table Mountain	Head	Riffle	1	1	
1/14/2014	LFC	Moe's Ditch	Middle	Glide	0	1	
1/14/2014	LFC	Lower Aud RR	Middle	Riffle	0	3.5	
1/14/2014	LFC	Hatchery Side Channel	Middle	Glide	0	1	
1/14/2014	LFC	Lower Aud RR, bottom	Middle	Glide	1	8	
1/28/2014	LFC	Moe's Ditch	Middle	Glide	0	2	
1/28/2014	LFC	Moe's Ditch	Middle	Glide	0	4	
1/28/2014	LFC	Moe's Ditch	Middle	Glide	0	2	
1/28/2014	LFC	Bedrock	Middle	Riffle	0	0.5	
1/29/2014	LFC	Upper Alec	Head	Glide	0	2.5	
2/6/2014	LFC	Moe's Ditch	Middle		2	4	
2/6/2014	LFC	Moe's Ditch (lower)	Middle	Riffle	2	1.5	
3/6/2014	LFC	Upper Hatchery Ditch	Middle		4	2.5	
4/26/2014	LFC	Cottonwood	Head	Riffle	1	1.5	
4/26/2014	LFC	Moe's Ditch	Middle	Riffle	0	5	
4/26/2014	LFC	Moe's Ditch	Middle	Glide	2	4.5	
4/26/2014	LFC	Moe's Ditch	Middle	Glide	0	3.5	

ReddLength	ReddWidth	PotLength	PotWidth	Depth	Velocity	__Mud_Silt	__Sand
1.5	1	0.5	0.5		0.38	0.66	0
1.25	1.2	0.3	0.3		0.32	0.36	10
1.2	1	0.4	0.4		0.24	0.39	20
1	1	0.3	0.3		0.26	0.53	0
1.75	1.25	0.3	0.3		0.3	0.52	10
1.25	1	0.3	0.3		0.42	0.5	0
1.25	1	0.3	0.3		0.4	0.5	0
1.8	0.85	0.4	0.4		0.49	0.35	0
1.25	1	0.3	0.3		0.65	0.22	0
1	0.75	0.3	0.3		0.42	0.41	15
1.7	0.9	0.3	0.3		0.33	0.42	0
1.5	0.9	0.3	0.4		0.38	0.31	0
2	1.25	0.25	0.25		0.6	0.45	5
1.3	0.65	0.5	0.4		0.36	0.41	30
1.2	0.8	0.4	0.35		0.34	0.35	50
1.5	1.1	0.6	0.4		0.3	0.41	10
2	0.7	0.5	0.35		0.34	0.2	10
0.82	0.7	0.26	0.1		0.48	0.33	5
		0.6	0.5		0.26		30
0.7	0.7	0.4	0.4		0.32		5
0.85	0.7	0.5	0.5		0.5	0.46	10
1.2	1	0.75	0.5				10
0.8	0.65	0.6	0.4		0.38	0.43	5
0.7	0.8	0.5	0.6		0.28	0.43	10
0.8	0.6	0.4	0.4		0.38	0.46	10

Substrate Size Class	Average	Range
Silt (<0.06 mm)	0.0%	0
Sand (0.06-1.00 mm)	9.8%	0-50%
Gravel (2-15 mm)	34.0%	10-70%
Pebble (16-63 mm)	39.8%	10-75%
Cobble (64-256 mm)	15.4%	0-65%
Boulder (>256 mm)	0.6%	0-10%

__Gravel	__Pebble	__Cobble	__Boulder	Overhead_C	Instream_C	Instream_2	Instream_3
10	75	15	0	None	No		
50	40	0	0	None	Yes		
60	20	0	0		1 Yes		
30	70	0	0	None	No		
50	40	0	0		1 No		
50	50	0	0		1 No		
30	30	30	0		1 No		
60	40	0	0	None	No		
50	50	0	0		1 S		
30	30	15	10		1 No		
30	60	10	0	None	No		
50	50	0	0		1 S		
70	20	5	0	None	No		
30	30	10	0	None	S		
20	10	20	0	None	No		
10	30	50	0	None	S		
50	10	30	0	None	U		
10	20	60	5	None	No		
40	30	0	0		1 S		
10	20	65	0	None	No		
30	30	30	0		1 L		
30	60	0	0	None	No		
10	70	15	0		2 No		
20	65	5	0		2 No		
20	45	25	0	None	No		

Instream_4	DomIScover	SecIScover	Area_Prev_	SurveyType	Comment
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1

<u>Date</u>	<u>Section</u>	<u>Name</u>	<u>Geomorphic Unit</u>	<u>Position</u>	<u># Steelhead</u>
1/8/2014	LFC	Moe's Ditch	Riffle	Middle	2
1/8/2014	LFC	Lower Hatchery Ditch	Glide	Middle	0
1/8/2014	LFC	Lower Hatchery Ditch	Glide	Middle	0
1/9/2014	LFC	Lower Aud RR, bottom	Glide	Tail	0
1/14/2014	LFC	Moe's Ditch	Glide	Middle	1
1/14/2014	LFC	Moe's Ditch	Riffle	Head	2
1/14/2014	LFC	Moe's Ditch	Riffle	Middle	0
1/14/2014	LFC	Lower Aud RR, bottom	Glide	Tail	0
1/14/2014	LFC	Table Mountain	Riffle	Head	1
1/14/2014	LFC	Moe's Ditch	Glide	Middle	0
1/14/2014	LFC	Lower Aud RR	Riffle	Middle	0
1/14/2014	LFC	Hatchery Side Channel	Glide	Middle	0
1/14/2014	LFC	Lower Aud RR, bottom	Glide	Middle	1
1/28/2014	LFC	Moe's Ditch	Glide	Middle	0
1/28/2014	LFC	Moe's Ditch	Glide	Middle	0
1/28/2014	LFC	Moe's Ditch	Glide	Middle	0
1/28/2014	LFC	Bedrock	Riffle	Middle	0
1/29/2014	LFC	Upper Alec	Glide	Head	0
2/6/2014	LFC	Moe's Ditch		Middle	2
2/6/2014	LFC	Moe's Ditch (lower)	Riffle	Middle	2
3/6/2014	LFC	Upper Hatchery Ditch		Middle	4
4/26/2014	LFC	Cottonwood	Riffle	Head	1
4/26/2014	LFC	Moe's Ditch	Riffle	Middle	0
4/26/2014	LFC	Moe's Ditch	Glide	Middle	2
4/26/2014	LFC	Moe's Ditch	Glide	Middle	0

Date	Survey Week	Species	Riffle Name	Riffle Positon
1/15/2015		1 SH	Upper Hatchery	Head
1/15/2015		1 SH	Upper Hatchery Ditch	Middle
1/15/2015		1 SH	Upper Hatchery Ditch	Middle
1/15/2015		1 SH	Upper Hatchery Ditch	Middle
1/15/2015		1 SH	Upper Hatchery Ditch	Middle
1/15/2015		1 SH	Upper Hatchery Ditch	Middle
1/15/2015		1 SH	Upper Hatchery Ditch	Middle
1/15/2015		1 SH	Upper Hatchery Ditch	Middle
1/15/2015		1 SH	Upper Hatchery Ditch	Middle
1/15/2015		1 SH	Moes Ditch	Middle
1/15/2015		1 SH	Lower Hatchery Ditch	Middle
1/15/2015		1 SH	Lower Hatchery Ditch	Middle
1/15/2015		1 SH	Auditorium	Middle
22-Jan-15		2 SH	Cottonwood	Head
22-Jan-15		2 SH	Moe's Ditch	Middle
22-Jan-15		2 SH	Moe's Ditch	Middle
22-Jan-15		2 SH	Moe's Ditch	Middle
22-Jan-15		2 SH	Moe's Ditch	Middle
22-Jan-15		2 SH	Upper Hatchery Ditch	Middle
22-Jan-15		2 SH	Upper Hatchery Ditch	Middle
22-Jan-15		2 SH	Upper Hatchery Ditch	Middle
22-Jan-15		2 SH	Upper Hatchery Ditch	Middle
29-Jan-15		3 SH	Hatchery Riffle	Head
29-Jan-15		3 SH	Upper Hatchery Ditch	Middle
29-Jan-15		3 SH	Upper Hatchery Ditch	Middle
29-Jan-15		3 SH	Upper Hatchery Ditch	Middle
29-Jan-15		3 SH	Lower Hatchery Ditch	Middle
29-Jan-15		3 SH	Lower Hatchery Ditch	Middle
29-Jan-15		3 SH	Lower Hatchery Ditch	Middle
29-Jan-15		3 SH	Lower Hatchery Ditch	Middle
29-Jan-15		3 SH	Lower Hatchery Ditch	Middle
29-Jan-15		3 SH	Lower Hatchery Ditch	Middle
29-Jan-15		3 SH	Lower Hatchery Ditch	Middle
29-Jan-15		3 SH	Lower Hatchery Ditch	Middle
29-Jan-15		3 SH	Auditorium	Tail
29-Jan-15		3 SH	Auditorium	Tail
29-Jan-15		3 SH	Moe's Ditch	Middle
29-Jan-15		3 SH	Moe's Ditch	Middle
4-Feb-15		4 SH	Moe's Ditch	Middle
4-Feb-15		4 SH	Moe's Ditch	Middle
4-Feb-15		4 SH	Trailer Park	Middle
4-Feb-15		4 SH	Upper Robinson	Tail
4-Feb-15		4 SH	Upper Hatchery Ditch	Middle
4-Feb-15		4 SH	Upper Hatchery Ditch	Middle
4-Feb-15		4 SH	Auditorium	Tail
4-Feb-15		4 SH	Moe's Ditch	Middle
4-Feb-15		4 SH	Lower Robinson	Middle

4-Feb-15	4 SH	Lower Robinson	Middle
5-Feb-15	4 SH	Steep	Head
5-Feb-15	4 SH	Steep Side Channel	Middle
5-Feb-15	4 SH	Steep Side Channel	Middle
11-Feb-15	5 SH	Upper Hatchery Ditch	Middle
11-Feb-15	5 SH	Upper Hatchery Ditch	Middle
11-Feb-15	5 SH	Upper Hatchery Ditch	Middle
11-Feb-15	5 SH	Upper Hatchery Ditch	Middle
19-Feb-15	6 SH	G-95	Middle
25-Feb-15	7 SH	Moe's Ditch	Middle

Channel Geo Unit	Pot Length	Pot Width	Redd Leng	Redd Wid	Water Dep	Water Velocity m/sec
Riffle	0.4	0.5	0.9	0.8	0.62	0.88
Riffle	0.5	0.3	0.9	1	0.15	0.66
Riffle	0.2	0.4	0.6	0.7	0.18	0.43
Riffle	0.5	0.4	0.6	0.9	0.21	0.77
Riffle	0.4	0.2	0.6	0.4	0.31	0.61
Riffle	0.4	0.4	0.8	0.6	0.31	0.61
Riffle	0.4	0.3	1	0.8	0.31	0.74
Riffle	0.4	0.4	1.1	0.8	0.22	1.22
Riffle	0.4	0.5	0.8	0.7	0.2	0.57
Riffle	0.7	0.3	1.2	0.8	0.3	0.97
Riffle	0.4	0.4	1.1	0.9	0.28	0.9
Riffle	0.7	0.6	1.3	1	0.32	0.58
Glide	0.5	0.4	1.2	1.3	0.32	0.44
Riffle	0.5	0.5	1.5	1.1	0.6	0.44
Riffle	0.4	0.3	1.3	1	0.32	0.42
Riffle	0.5	0.4	0.9	0.7	0.32	0.41
Riffle	0.2	0.2	0.8	0.6	0.24	0.71
Riffle	0.5	0.4	1.2	1	0.42	1.53
Riffle	0.6	0.4	2	1.2	0.32	1.52
Riffle	0.4	0.4	1	0.6	0.2	0.72
Riffle	0.2	0.3	1.1	0.7	0.44	0.23
Riffle	0.6	0.4	1.6	0.8	0.26	1.14
Riffle	0.5	0.4	1.6	0.9	0.5	4.78
Riffle	0.4	0.5	1.3	0.7	0.26	3.4
Riffle	0.7	0.5	1.4	0.8	0.25	4
Riffle	0.5	0.5	1.4	0.6	0.3	5.2
Riffle	0.5	0.4	0.8	0.5	0.3	1.5
Riffle	0.6	0.4	1.1	0.7	0.22	5.5
Riffle	0.6	0.4	1.1	0.6	0.3	2.15
Riffle	0.5	0.4	1	0.5	0.3	1.95
Riffle	0.6	0.4	1.2	0.9	0.46	1.3
Riffle	0.6	0.4	1.2	0.8	0.26	1.03
Riffle	0.5	0.4	1.2	0.6	0.3	1.33
Glide	0.6	0.4	1	0.7	0.38	1.83
Glide	0.6	0.5	1.2	0.7	0.48	1.97
Riffle	0.5	0.4	1	0.7	0.34	2.3
Riffle	0.4	0.4	1	0.6	0.3	2.15
Riffle	0.5	0.3	1	0.6	0.3	2.5
Riffle	0.5	0.4	1.3	0.7	0.34	1.12
Glide	0.5	0.5	1	0.8	0.4	1.5
Riffle	0.5	0.5	1.6	1.2	0.27	1
Riffle	0.4	0.3	2.6	0.8	0.3	1.3
Riffle	0.4	0.4	1.2	0.6	0.3	1.85
Glide	0.7	0.6	0.9	0.7	0.4	1.15
Riffle	0.4	0.4	1	0.5	0.3	1.7
Riffle	0.5	0.3	1.5	0.8	0.32	1.44

Riffle	0.5	0.4	1.5	0.7	0.46	1.7
Glide	0.5	0.4	1	0.5	0.34	0.33
Riffle	0.5	0.5	1.5	1	0.4	2.17
Riffle	0.4	0.4	2.2	0.9	0.42	0.45
Riffle	0.8	0.82	1.2	1	0.38	1.6
Riffle	0.63	0.52	1.5	0.73	0.3	0.2
Riffle	0.44	0.42	1.14	0.6	0.28	0.57
Riffle	0.32	0.36	0.8	0.64	0.2	0.84
Riffle	0.45	0.3	0.75	0.5	0.66	1.95
Riffle	0.4	0.3	0.6	0.5	0.26	1.85

Water Velocity ft/sec	Distance from Bank	SH present
0.268292683	5	0
0.201219512	1.5	4
0.131097561	2	4
0.234756098	0.5	0
0.18597561	1.5	0
0.18597561	1.5	0
0.225609756	4	0
0.37195122	4	0
0.173780488	1	0
0.295731707	3	3
0.274390244	3.5	3
0.176829268	5	0
0.134146341	2.5	1
0.134146341	2	4
0.12804878	2	0
0.125	2.5	0
0.216463415	1	0
0.466463415	4	1
0.463414634	1	2
0.219512195	2	0
0.070121951	3	1
0.347560976	0.5	0
1.457317073	10	0
1.036585366	2	2
1.219512195	4	0
1.585365854	2	0
0.457317073	1	0
1.676829268	1	3
0.655487805	0.5	4
0.594512195	0.5	1
0.396341463	0.5	1
0.31402439	4	0
0.405487805	2	0
0.557926829	3	0
0.600609756	1.5	0
0.701219512	1.5	0
0.655487805	1	0
0.762195122	1.5	0
0.341463415	2	0
0.457317073	3	0
0.304878049	10	0
0.396341463	1	3
0.56402439	1	0
0.350609756	6	0
0.518292683	2	0
0.43902439	1.5	0

0.518292683
0.100609756
0.661585366
0.137195122
0.487804878
0.06097561
0.173780488
0.256097561
0.594512195
0.56402439

2	0
1.5	0
2	0
2	0
0.5	0
0.5	0
2	0
2	2
15	0
0.2	0

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of stellhead

Count	Date	Survey Week	Species	Riffle Name	Riffle Positon
1	1/4/2017		1 SH	Steep Side Channel	Middle
2	1/4/2017		1 SH	Upper Hatchery Side Channel	Tail
3	1/5/2017		1 SH	Upper Hatchery Side Channel	Middle
4	1/5/2017		1 SH	Upper Hatchery Side Channel	Tail
5	1/11/2017		2 SH	Lower Hatchery Side Channel	Tail
6	1/11/2017		2 SH	Upper Hatchery Side Channel	Head
7	1/11/2017		2 SH	Upper Hatchery Side Channel	Tail
8	1/11/2017		2 SH	Upper Hatchery Side Channel	Middle

Channel Geo Unit	Pot Length	Pot Width	Redd Length	Redd Width	Water Depth
Riffle	0.5	0.5	2	1	0.36
Glide	0.5	0.5	1.25	0.75	0.32
Glide	0.2	0.2	1	0.75	0.39
Riffle	0.4	0.3	1.25	0.8	0.38
Glide	0.2	0.2	1	0.5	0.28
Riffle	0.3	0.2	1	0.4	0.24
Pool	0.3	0.3	1	0.6	0.26
Glide	0.3	0.3	0.8	0.5	0.2

Code	Substrate Description
0	Silt and Clay (<0.059 mm)
1	Sand (0.06-1 mm)
2	Gravel (2-15 mm)
3	Pebble (16-63 mm)
4	Cobble (64-256 mm)
5	Boulder (>256 mm)

Code	Instream Cover Description
None	No Cover
S	Small woody debris
L	Large woody debris
A	Submerged aquatic vegetation
U	Undercut bank

Water Velocity m/sec	Water Velocity ft/sec	Distance from Bank (m)	SH present	__Mud_Silt (0)
0.66		1	0	0
0.2		3	2	0
0.19		2.5	0	0
0.48		4	2	0
0.37		2.5	0	0
0.29		2	0	0
0.26		2.5	0	0
0.27		1	0	0

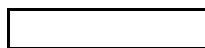
Code	Overhead Cover Description
0	No overhead cover
1	Low overhead <.5 meters
2	High overhead .5-2 meters
3	Canopy

__Sand (1)	__Gravel (2)	__Pebble (3)	__Cobble (4)	__Boulder (5)	Instream Cover	Overhead Cover
0	40	50	10		0 No	
0	40	50	10		0 L	No
10	30	50	10		0 No	
10	40	40	10		0 No	
20	40	30	10		0 No	
5	30	60	5		0 No	
0	30	50	20		0 No	
5	10	60	25		0 No	

Comment

Very poor visibility due to recent rains and possible urban runoff. Visibility was approx 1.0 ft. in depth.

Redd Count	Date	Location of Redd	Riffle Positon	Channel Geo Unit	Pot Length (m)	Pot Width (m)	Redd Length (m)	Redd Width (m)	Water Depth (m)
1	1/4/17	Steep S.C.	Middle	Riffle	0.5	0.5	2	1	0.36
2	1/4/17	U. Hatchery S.C.	Tail	Glide	0.5	0.5	1.25	0.75	0.32
3	1/5/17	U. Hatchery S.C.	Middle	Glide	0.2	0.2	1	0.75	0.39
4	1/5/17	U. Hatchery S.C.	Tail	Riffle	0.4	0.3	1.25	0.8	0.38
5	1/11/17	L. Hatchery S.C.	Tail	Glide	0.2	0.2	1	0.5	0.28
6	1/11/17	U. Hatchery S.C.	Head	Riffle	0.3	0.2	1	0.4	0.24
7	1/11/17	U. Hatchery S.C.	Tail	Pool	0.3	0.3	1	0.6	0.26
8	1/11/17	U. Hatchery S.C.	Middle	Glide	0.3	0.3	0.8	0.5	0.2



Code	Substrate Description
0	Silt and Clay (<0.059 mm)
1	Sand (0.06-1 mm)
2	Gravel (2-15 mm)

Code	Instream Cover Description
None	No Cover
S	Small woody debris
L	Large woody debris

3	Pebble (16-63 mm)
4	Cobble (64-256 mm)
5	Boulder (>256 mm)

A	Submerged aquatic vegetation
U	Undercut bank



FID	Shape	Species	Feature_	Date	Riffle_Nan	Riffle_Pos	Geomor	_of_St	Distance_t
0	Point	SH	5	#####	Lower Hat	Tail	Glide	0	2.5
1	Point	SH	6	#####	Upper Hat	Head	Riffle	0	2
2	Point	SH	7	#####	Upper Hat	Tail	Pool	0	2.5
3	Point	SH	8	#####	Upper Hat	Middle	Glide	0	1
FID	Shape	Species	Feature_	Date	Riffle_Nan	Riffle_Pos	Geomor	_of_St	Distance_t
0	Point	SH	3	1/5/2017	Upper Hat	Middle	Glide	0	2.5
1	Point	SH	4	1/5/2017	Upper Hat	Tail	Riffle	0	4

Water Velocity (m/sec)	Distance from Bank (m)	SH present	Mud/Silt (0)	Sand (1)	Gravel (2)	Pebble (3)	Cobble (4)	Boulder (5)	Instream Cover
0.66	1	0	0	0	40	50	10	0	No
0.2	3	2	0	0	40	50	10	0	L
0.19	2.5	0	0	10	30	50	10	0	No
0.48	4	2	0	10	40	40	10	0	No
0.37	2.5	0	0	20	40	30	10	0	No
0.29	2	0	0	5	30	60	5	0	No
0.26	2.5	0	0	0	30	50	20	0	No
0.27	1	0	0	5	10	60	25	0	No

Code	Overhead Cover Description
0	No overhead cover
1	Low overhead <.5 meters
2	High overhead .5-2 meters

3	Canopy

Count	Date	Riffle Name	Riffle Position	Channel Geo Unit	Pot Length	Pot Width	Redd Length	Redd Width	Water Depth	W
1	1/4/17	Steep S.C.	Middle	Riffle	0.5	0.5	2	1	0.36	
2	1/4/17	Upper Hatchery S.C.	Tail	Glide	0.5	0.5	1.25	0.75	0.32	
3	1/5/17	Upper Hatchery S.C.	Middle	Glide	0.2	0.2	1	0.75	0.39	
4	1/5/17	Upper Hatchery S.C.	Tail	Riffle	0.4	0.3	1.25	0.8	0.38	
5	1/11/17	Lower Hatchery S.C.	Tail	Glide	0.2	0.2	1	0.5	0.28	
6	1/11/17	Upper Hatchery S.C.	Head	Riffle	0.3	0.2	1	0.4	0.24	
7	1/11/17	Upper Hatchery S.C.	Tail	Pool	0.3	0.3	1	0.6	0.26	
8	1/11/17	Upper Hatchery S.C.	Middle	Glide	0.3	0.3	0.8	0.5	0.2	

Pot_Length	Pot_Width	Depth	Redd_Length	Redd_Width	Velocity	__silt__	__sand__	__gravel__	__pebble__
0.2	0.2	0.28	1	0.5	0.37	0	20	40	30
0.3	0.2	0.24	1	0.4	0.29	0	5	30	60
0.3	0.3	0.26	1	0.6	0.26	0	0	30	50
0.3	0.3	0.2	0.8	0.5	0.27	0	5	10	60
Pot_Length	Pot_Width	Depth	Redd_Length	Redd_Width	Velocity	__silt__	__sand__	__gravel__	__pebble__
0.2	0.2	0.39	1	0.8	0.19	0	10	30	50
0.4	0.3	0.38	1.3	0.8	0.48	0	10	40	40

Overhead Cover	Northing	Easting	Comment
2	4375087.15	623991.444	
No	4375076.953	623971.357	
3	4375087.15	623991.444	
2	4375076.953	623971.357	
2	4375038.47	623814.201	Very poor visibility due to recent rains and possible urban
3	4375090.008	623991.137	Very poor visibility due to recent rains and possible urban
3	4375096.517	624026.325	Very poor visibility due to recent rains and possible urban
3	4375090.263	624001.265	Very poor visibility due to recent rains and possible urban

Water Velocity m/sec	Distance from Bank (m)	SH present	Mud/Silt (0)	Sand (1)	Gravel (2)	Pebble (3)	Cobble (4)	Boulder (5)	Instream Cover	Overhead Cover
0.66	1	0	0	0	40	50	10	0	No	2
0.2	3	2	0	0	40	50	10	0	L	No
0.19	2.5	0	0	10	30	50	10	0	No	3
0.48	4	2	0	10	40	40	10	0	No	2
0.37	2.5	0	0	20	40	30	10	0	No	2
0.29	2	0	0	5	30	60	5	0	No	3
0.26	2.5	0	0	0	30	50	20	0	No	3
0.27	1	0	0	5	10	60	25	0	No	3

__cobble	__boulder	Overhead_C	Overhead_2	Overhead_3	Overhead_Instream_1	Instream_2
10		0 Yes	Canopy	.5 - 2 m abo		Yes
5		0 Yes	Canopy	Canopy		Yes
20		0 Yes	Canopy	Canopy		Yes
25		0 Yes	Canopy	Canopy		Yes
__cobble	__boulder	Overhead_C	Overhead_2	Overhead_3	Overhead_Instream_1	Instream_2
10		0 Yes	Canopy		Canopy	No
10		0 Yes	.5 - 2 m abov	.5 - 2 m abo	Canopy	No

Instream_ID	Instream_ID	Instream_ID	Max_PDOI	Max_HDO	Corr_Type	Rcvr_Type	GPS_Date	GPS_Time	Feat_Name
			3	1.7	Real-time	GeoXH 60	#####	12:33:39p	SH_Redd
			3.5	2.5	Real-time	GeoXH 60	#####	01:01:31p	SH_Redd
			2.3	1.2	Real-time	GeoXH 60	#####	01:08:57p	SH_Redd
			4.3	2.2	Real-time	GeoXH 60	#####	01:19:26p	SH_Redd
Instream_ID	Instream_ID	Instream_ID	Max_PDOI	Max_HDO	Corr_Type	Rcvr_Type	GPS_Date	GPS_Time	Feat_Name
			2.3	1.5	Real-time	GeoXH 60	1/5/2017	10:54:52a	SH_Redd
			5.7	4.1	Real-time	GeoXH 60	1/5/2017	11:02:56a	SH_Redd

Datafile	Unfilt_Pos	Filt_Pos	Data_Dicti	GPS_Week	GNSS_Height	Vert_Prec	Horz_Prec	Std_Dev	Northing
2017 SH RI	10	10	SH Redd 20	1931	11.735	0.4	0.2	0.015191	4375038
2017 SH RI	10	10	SH Redd 20	1931	13.212	0.2	0.2	0.035503	4375090
2017 SH RI	10	10	SH Redd 20	1931	13.299	0.2	0.2	0.012544	4375097
2017 SH RI	10	10	SH Redd 20	1931	13.272	0.2	0.2	0.021892	4375090
Datafile	Unfilt_Pos	Filt_Pos	Data_Dicti	GPS_Week	GNSS_Height	Vert_Prec	Horz_Prec	Std_Dev	Northing
2017 SH RI	11	11	SH Redd 20	1930	12.322	0.2	0.2	0.020269	4375087
2017 SH RI	12	12	SH Redd 20	1930	12.952	1.9	0.7	0.037105	4375077

Easting

623814.2

623991.1

624026.3

624001.3

Easting

623991.4

623971.4

Easting	Northing	Species	Feature ID	Date	Riffle Name	Riffle Postition
623989.13	4375022.08	SH	10	26-Dec-17	Upper Auditorium	Middle
624174.24	4375037.66	SH	11	26-Dec-17	Hatchery Riffle	Middle
624176.88	4375038.45	SH	12	26-Dec-17	Hatchery Riffle	Middle
624545.23	4375252.01	SH	1	27-Dec-17	Table Mountain Riffle	
624545.97	4375249.88	SH	2	27-Dec-17	Table Mountain Riffle	Head
620628.7	4369553.51	SH	1	04-Jan-18	Lower Robinson Riffle	
620628.7	4369553.51	SH	1	04-Jan-18	Lower Robinson Riffle	
623808.84	4374991.38	SH	1	08-Jan-18	Lower Auditorium	Head
623755.36	4375023.43	SH	1	09-Jan-18	Lower Hatchery Side Channel	Tail
623758.06	4374922.48	SH	12	09-Jan-18	Lower Auditorium	Middle
623749.31	4375021.63	SH	1	18-Jan-18	Lower Hatchery Side Channel	Tail
623754.29	4375022.45	SH	2	18-Jan-18	Lower Hatchery Side Channel	Tail
623875.13	4375056.19	SH	4	18-Jan-18	Lower Hatchery Side Channel	Tail
623953.18	4375071.99	SH	5	18-Jan-18	Upper Hatchery Side Channel	Tail

623971.16	4375075.8	SH	6	18-Jan-18	Upper Hatchery Side Channel	Middle
623972.54	4375077.76	SH	7	18-Jan-18	Upper Hatchery Side Channel	Middle
624002.5	4375091.83	SH	8	18-Jan-18	Upper Hatchery Side Channel	Middle
624019.63	4375098.34	SH	9	18-Jan-18	Upper Hatchery Side Channel	Tail
624034.72	4375098.43	SH	10	18-Jan-18	Upper Hatchery Side Channel	Head
624062.95	4375083.54	SH	11	18-Jan-18	Top of Auditorium	Head
623882.75	4374998.08	SH	12	18-Jan-18	Lower Auditorium	Middle
623819.58	4374987.66	SH	13	18-Jan-18	Lower Auditorium	Middle
624187.19	4375039.8	SH	14	18-Jan-18	Hatchery Riffle	Middle
624547.57	4375252.01	SH	15	18-Jan-18	Table Mountain Riffle	Head
624553.43	4375253.28	SH	16	18-Jan-18	Table Mountain Riffle	Head
624552.48	4375249.36	SH	17	18-Jan-18	Table Mountain Riffle	Head
624006.22	4375026.34	SH	11	25-Jan-18	Upper Auditorium	Middle
624269.74	4375045.74	SH	1	31-Jan-18	Hatchery Riffle	Middle
624271.62	4375053.24	SH	2	31-Jan-18	Hatchery Riffle	Middle
624096.89	4375060.57	SH	3	31-Jan-18	Top of Auditorium	Head
624068.16	4375067.22	SH	4	31-Jan-18	Top of Auditorium	Head

624083.32	4375058.5	SH	5	31-Jan-18	Top of Auditorium	Head
624018.74	4375028.91	SH	6	31-Jan-18	Upper Auditorium	Middle
624556.66	4375253.27	SH	13	31-Jan-18	Table Mountain Riffle	Head
624544.56	4375251.24	SH	14	31-Jan-18	Table Mountain Riffle	Head
620092.29	4369161.67	SH	1	01-Feb-18	Steep Riffle	Head
621022.54	4369609.73	SH	1	06-Feb-18	Upper Robinson Riffle	Head
622099.34	4372665.15	SH	2	06-Feb-18	Trailer Park Riffle	Tail
623845.71	4374996.36	SH	1	07-Feb-18	Lower Auditorium	Middle
623842.02	4374987.89	SH	2	07-Feb-18	Lower Auditorium	Middle
623807.13	4374995.14	SH	3	07-Feb-18	Lower Auditorium	Middle
623800.2	4374992.97	SH	4	07-Feb-18	Lower Auditorium	Middle
623799.11	4374981.75	SH	5	07-Feb-18	Lower Auditorium	Middle
623758.36	4374992.24	SH	6	07-Feb-18	Lower Auditorium	Tail
623983.57	4375012.92	SH	19	07-Feb-18	Upper Auditorium	Middle
624542.06	4375250.85	SH	20	07-Feb-18	Table Mountain Riffle	Head
624525.47	4375250.36	SH	21	07-Feb-18	Table Mountain Riffle	Head
624459.26	4375085.66	SH	22	07-Feb-18	Upper Hatchery Riffle	Head
618184.1	4364137.7	SH	23	08-Feb-18	Hour Riffle	Head
624553.65	4375250.39	SH	1	13-Feb-18	Table Mountain Riffle	Head
624546.05	4375251.3	SH	2	13-Feb-18	Table Mountain Riffle	Head

624543	4375248.96	SH	3	13-Feb-18	Table Mountain Riffle	Head
624085.29	4374993.5	SH	4	13-Feb-18	Upper Auditorium	Middle
623835.92	4374998.56	SH	5	13-Feb-18	Lower Auditorium	Middle
623832.53	4374998.42	SH	6	13-Feb-18	Lower Auditorium	Middle
624055.51	4375064.29	SH	10	13-Feb-18	Top of Auditorium	Middle
624063.97	4375070.87	SH	11	13-Feb-18	Top of Auditorium	Middle
624065.99	4375077.9	SH	12	13-Feb-18	Top of Auditorium	Middle
623795.6	4374988.5	SH	13	13-Feb-18	Lower Auditorium	Middle
623766.93	4374990.82	SH	14	13-Feb-18	Lower Auditorium	Middle
624016.98	4375098.48	SH	15	13-Feb-18	Upper Hatchery Side Channel	Tail
622183.3	4372469.74	SH	1	14-Feb-18	Mathew's Riffle	Head
622183.09	4372473.16	SH	2	14-Feb-18	Mathew's Riffle	Head
622181.45	4372475.11	SH	3	14-Feb-18	Mathew's Riffle	Head
620109.63	4369147.01	SH	4	14-Feb-18	Steep Side Channel	Head
624243.8	4375134.88	SH	1	28-Feb-18	Cottonwood	Middle
624095.66	4375110.61	SH	2	28-Feb-18	Upper Hatchery Side Channel	Tail
624059.41	4375108.71	SH	3	28-Feb-18	Upper Hatchery Side Channel	Middle
624026.22	4375096.12	SH	4	28-Feb-18	Upper Hatchery Side Channel	Middle
624056.78	4375059.05	SH	5	28-Feb-18	Top of Auditorium	Middle

624059.11	4375049.58	SH	6	28-Feb-18	Top of Auditorium	Middle
623750.11	4374970.13	SH	7	28-Feb-18	Lower Auditorium	Middle
623764.5	4374971.77	SH	8	28-Feb-18	Lower Auditorium	Middle
623774.36	4374985.78	SH	9	28-Feb-18	Lower Auditorium	Middle
623774.92	4374986.73	SH	10	28-Feb-18	Lower Auditorium	Middle
623805.22	4374994.64	SH	11	28-Feb-18	Lower Auditorium	Middle
624169.5	4375034.41	SH	4	08-Mar-18	Hatchery Riffle	Middle
624028.93	4375094.24	SH	5	08-Mar-18	Upper Hatchery Side Channel	Head
623904.16	4375061.31	SH	3	15-Mar-18	Lower Hatchery Side Channel	Head
624047.37	4375063.31	SH	4	15-Mar-18	Top of Auditorium	Middle
624087.91	4375107.62	SH	5	15-Mar-18	Upper Hatchery Side Channel	Middle
624087.81	4375108.33	SH		15-Mar-18	Upper Hatchery Side Channel	Middle
624026.45	4375098.23	SH		15-Mar-18	Upper Hatchery Side Channel	Head
623990.85	4375088.13	SH	8	15-Mar-18	Upper Hatchery Side Channel	Middle

Geomorphic Unit	# of Steelhead	Distance to bank	Pot Length	Pot Width	Depth	Redd Length
Riffle	0	1.5	1	1	0.38	2.5
Glide	0	2	0.6	0.7	0.62	1.9
Glide	0	1.8	0.7	0.7	0.54	1.8
	0	1	0	0	0	0
Riffle	0	1	0	0	0	0
	0	1	0	0	0	0
Glide	0	1.2	0.54	0.52	0.24	1.6
Riffle	0	6.5	0.2	0.3	0.3	1.5
Riffle	0	5	0.4	0.3	0.2	1.9
Glide	0	3.5	0.5	0.6	0.4	1.4
Riffle	0	3.5	0.5	0.7	0.28	1
Riffle	0	4	0.3	0.3	0.25	0.8
Riffle	0	0.5	0.5	0.6	0.16	1.4
Riffle	0	0.2	0.5	0.5	0.2	1

Glide	0	1.5	0.8	0.7	0.2	1.4
Glide	0	2	0.3	0.3	0.2	0.7
Glide	0	1.8	0.6	0.6	0.3	1.2
Riffle	0	3.5	0.4	0.5	0.45	1.6
Glide	0	4	0.4	0.4	0.4	1.2
Riffle	0	3	0.5	0.6	0.31	1
Glide	0	3	0.7	0.6	0.6	1.3
Glide	1	11	0.5	0.4	0.38	0.9
Glide	1	1	0.4	0.5	0.8	1.3
Riffle	1	1.2	0.6	0.5	0.7	1.2
Riffle	0	0	0.4	0.5	0.59	1.4
Riffle	0	3.5	0.4	0.4	0.72	0.8
Riffle	0	2	0.5	0.6	0.32	1.2
Riffle	0	11	0.5	0.5	0.4	0.5
Riffle	0	8	0.4	0.4	0.3	0.7
Riffle	0	10	0.7	0.7	0.68	1.4
Riffle	0	13	0.5	0.5	0.54	1.1

Riffle	0	7	0.5	0.5	0.52	1.1
Riffle	0	1	0.4	0.4	0.58	1
Riffle	0	1	0.4	0.4	0.38	1.2
Riffle	0	0.8	0.3	0.3	0.5	1.2
Riffle	0	40	0.5	0.4	0.45	0.9
Riffle	0	0.3	0.4	0.5	0.48	1.2
Riffle	0	3.5	0.6	0.7	0.6	1.5
Glide	0	5	0.4	0.4	0.5	1
Glide	0	7	0.5	0.6	0.7	0.9
Riffle	0	2	0.4	0.6	0.3	1
Glide	0	3	0.5	0.5	0.24	1.1
Glide	0	9	0.5	0.5	0.46	1.3
Glide	0	7	0.5	0.5	0.22	1.1
Riffle	0	5	0.5	0.5	0.46	1.5
Riffle	3	1.5	0.5	0.4	0.36	1.1
Riffle	0	4	0.5	0.6	0.5	1.2
Riffle	0	4	0.4	0.3	0.24	1
Riffle	0	3	0.6	0.6	0.5	1.4
Glide	1	1.5	0.4	0.4	0	1.6
Glide	0	1	0.4	0.4	0.6	1.7

Riffle	0	3.5	0.4	0.5	0.54	2
Glide	0	3.5	0.3	0.3	0.5	1.2
Glide	0	5	0.3	0.4	0.57	1.2
Glide	1	5	0.5	0.3	0.41	1.3
Glide	0	6	0.4	0.4	0.41	1
Glide	2	6	0.3	0.4	0.65	1.2
Glide	4	6	0.4	0.3	0.72	1.7
Glide	1	4	0.5	0.4	0.33	2
Glide	0	3.5	0.3	0.3	0.26	0.9
Glide	0	2.5	0.4	0.4	0.28	0.9
Riffle	0	2.5	0.3	0.3	0.45	1.5
Riffle	0	3	0.3	0.3	0.48	1.2
Riffle	0	4.5	0.3	0.3	0.61	1.2
Riffle	0	3	0.5	0.3	0.25	1.7
Riffle	2	2	0.5	0.8	0.45	1.5
Riffle	0	4	1	0.8	0.3	2.5
Glide	2	2.2	0.3	0.4	0.22	1.3
Riffle	0	0.6	0.8	1.2	0.32	1.6
Riffle	0	7	0.7	0.6	0.62	2.1

Riffle	0	6	0.6	0.6	0.72	1.8
Glide	0	30	0.6	0.5	0.58	1.2
Glide	0	25	0.6	0.5	0.44	1.3
Glide	0	10	0.5	0.4	0.32	1.2
Glide	0	9.5	0.5	0.5	0.32	1
Glide	0	4	0.5	0.6	0.22	1.2
Glide	0	3.2	0.7	0.7	0.81	2.1
Riffle	1	0.2	0.6	0.4	0.42	1.1
Riffle	0	2	0.4	0.4	0.3	0.8
Riffle	0	2.5	0.5	0.4	0.26	1.1
Glide	0	1	0.6	0.4	0.28	1.1
Glide	0	1.8	0.5	0.4	0.28	1.2
Riffle	0	3	0.7	0.7	0.3	1.4
Glide	0	3.5	0.4	0.6	0.45	0.8

Redd Width	Velocity (m/s)	% silt / mud	% sand	% gravel	% pebble	% cobble	% boulder
1	0.14	0	10	50	35	5	0
1.2	0	0	0	20	50	25	5
0.8	0.51	0	0	45	20	30	5
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1.8	0.58	0	5	25	30	20	20
1.3	0.75	0	5	50	40	5	0
1.1	0.32	0	5	35	40	20	0
0.7	0.48	0	10	40	30	20	0
1.3	0.14	0	10	30	50	10	0
0.5	0.15	0	0	50	45	5	0
0.6	0.81	0	5	40	50	5	0
0.7	0.71	0	20	40	25	15	0

1.2	0.42	0	10	55	30	5	0
0.5	0.24	0	0	60	40	0	0
0.8	0.29	0	40	40	20	0	0
0.8	0.43	0	0	35	45	10	0
0.7	0.22	0	50	25	25	0	0
0.8	0.52	0	0	30	45	15	0
0.8	0.1	0	0	50	30	15	5
0.5	0.67	0	10	30	40	15	5
0.6	0.43	0	0	40	30	25	5
0.7	0.33	0	10	35	40	15	0
0.6	0.39	0	10	35	45	10	0
0.6	0.45	0	5	40	50	5	0
0.7	0.38	0	0	40	50	10	0
0.6	0.47	0	0	40	40	20	0
0.5	0.25	0	0	15	55	30	0
1.2	0.32	0	0	60	20	20	0
0.8	0.63	0	0	70	20	10	0

0.6	0.58	0	0	50	30	10	10
0.6	0.26	0	20	40	30	10	0
0.9	0.36	0	10	40	30	10	10
0.7	0.6	0	0	65	30	5	0
0.6	0.44	0	10	30	60	0	0
0.5	0.64	0	15	35	30	25	0
1.3	0	0	0	20	50	30	0
0.6	0.42	0	5	20	65	10	0
0.7	0.81	0	0	25	35	30	10
0.7	0.71	0	10	45	30	15	0
0.9	0.47	0	10	60	25	5	0
0.7	0.64	0	0	40	40	20	0
0.8	0.22	0	0	20	80	0	0
0.9	0.58	0	0	40	50	10	0
0.7	1.16	0	20	40	45	5	0
0.7	0.73	0	0	30	65	5	0
0.6	0.59	0	10	35	45	10	0
0.8	0.4	0	10	50	20	20	0
0.8	0.48	0	15	15	20	50	0
0.7	0.51	0	10	30	40	20	0

0.8	1	0	5	25	30	40	0
0.6	0.77	0	0	45	50	5	0
0.6	0.41	0	10	40	15	15	20
0.5	0.61	0	15	25	10	30	10
0.7	0.8	0	5	20	60	10	5
0.6	0.46	0	5	40	30	20	5
0.7	0.55	0	10	20	35	25	10
1.2	0.6	0	10	30	30	20	10
0.6	0.48	0	10	25	20	45	0
0.5	0.24	0	5	15	60	20	0
0.5	0.45	0	10	35	40	10	5
0.5	0.56	0	5	40	30	25	0
0.6	0.45	0	10	40	25	25	0
0.6	0.38	0	5	20	40	35	0
1	0.55	0	20	35	40	5	0
1.4	0.27	0	5	45	40	10	0
0.8	0.27	0	20	40	35	0	5
1.5	0.27	0	5	75	20	0	0
1.1	0.59	0	0	10	50	40	0

0.8	0.67	0	0	50	45	5	0
0.8	0.52	0	0	50	40	10	0
0.9	0.66	0	5	50	30	15	0
0.7	0.46	0	10	60	30	0	0
0.6	0.46	0	10	60	25	5	0
0.7	0.64	0	10	65	20	5	0
0.8	0.48	0	0	40	35	25	0
0.5	0.28	0	20	40	30	10	0
0.6	0.68	0	5	45	50	0	0
0.6	0.5	0	15	35	40	10	0
0.6	0.23	0	10	50	30	10	0
0.7	0.18	0	20	40	30	10	0
0.7	0.44	0	10	50	40	0	0
0.7	0.17	0	5	50	45	0	0

0.506111111

Overhead Cover	Overhead Cover (Dom)	Overhead Cover (Sub)	Overhead Cover2	Instream Cover
No				No
No				No
No				No
No				No
No				No
No				No
No				No
Yes	Canopy			No
No				No
No				No
No				No
Yes	Canopy			No
Yes	Canopy			No
Yes	.5 - 2 m abover water surface	0 - .5 m above water surface	Canopy	Yes
Yes	0 - .5 m above water surface	.5 - 2 m abover water surface		Yes

Yes	Canopy			No
Yes	Canopy			No
Yes	.5 - 2 m abover water surface	Canopy		No
Yes	Canopy			No
Yes	Canopy			Yes
No				No
Yes	.5 - 2 m abover water surface			Yes
No				No
Yes	.5 - 2 m abover water surface			Yes
No				No
Yes	.5 - 2 m abover water surface	Canopy		Yes
No				No
Yes	0 - .5 m above water surface	.5 - 2 m abover water surface		Yes
No				No
No				No
No				No
No				No

No			No
Yes		0 - .5 m above water surface	Yes
No			No
No			Yes
No			No
Yes		0 - .5 m above water surface	Yes
Yes		Canopy	Yes
No			No
No			No
No			No
No			No
No			No
No			No
No			No
Yes		0 - .5 m above water surface	Yes
No			No
Yes		Canopy	No
No			No
No			No
No			No

No			No
No			No
No			No
No			No
No			No
No			No
No			No
No			No
No			No
No			No
Yes		Canopy	No
No			No
No			No
No			No
No			No
Yes		Canopy	Yes
Yes		Canopy	Yes
Yes		Canopy	No
Yes		Canopy	No
No			No

No			No	
No			No	
No			No	
No			No	
No			No	
No			No	
No			No	
No			No	
Yes			0 - .5 m above water surface	Yes
Yes			.5 - 2 m above water surface	No
No				Yes
Yes			Canopy	Yes
Yes			Canopy	Yes
Yes			Canopy	Yes
Yes		Canopy	Yes	

Instream Cover (Dom)	Instream Cover (Sub)	Instream Cover2	Instream Cover3	Point_ID
				10
				11
				12
				1
				2
				3
				1
				1
				1
				12
				1
				2
UB		SWD		4
SWD				5

				6
				7
				8
				9
SWD				10
				11
SWD				12
				13
LWD				14
				15
UB	SWD			16
				17
SWD	LWD			11
				1
				2
				3
				4

		5
	SWD	6
		13
	UB	14
		1
	UB	1
	SWD	2
		1
		2
		3
		4
		5
		6
		19
	SWD	20
		21
		22
		23
		1
		2

		3
		4
		5
		6
		10
		11
		12
		13
		14
		15
		1
		2
		3
		4
	SWD	1
	LWD	2
		3
		4
		5

		6
		7
		8
		9
		10
		11
		4
	UB	5
		3
	LWD	4
	LWD	5
	LWD	6
	LWD	7
	LWD	8

Count

	Species	Feature_ID	Date	Riffle_Nam	Riffle_Pos	Geomorphic
4	SH	004	03-Jan-19	Lower Hatchery Side Channel	Tail	Riffle
5	SH	005	03-Jan-19	Lower Hatchery Side Channel	Head	Riffle
15	SH	6	10-Jan-19	Lower Hatchery Side Channel	Tail	Glide
16	SH	7	10-Jan-19	Lower Hatchery Side Channel	Middle	Glide
17	SH	8	10-Jan-19	Lower Hatchery Side Channel	Middle	Riffle
18	SH	9	10-Jan-19	Lower Hatchery Side Channel	Tail	Pool
30	SH	1	24-Jan-19	Lower Hatchery Side Channel	Tail	Glide
31	SH	2	24-Jan-19	Lower Hatchery Side Channel	Tail	Glide
32	SH	3	24-Jan-19	Lower Hatchery Side Channel	Tail	Pool
47	SH	18	24-Jan-19	Lower Hatchery Side Channel	Middle	Glide
48	SH	19	24-Jan-19	Lower Hatchery Side Channel	Tail	Glide

70	SH		28-Jan-19	Lower Hatchery Side Channel	Tail	Glide
71	SH		28-Jan-19	Lower Hatchery Side Channel	Tail	Glide
53	SH	1	07-Feb-19	Lower Hatchery Side Channel	Tail	Glide
59	SH	1	21-Feb-19	Lower Hatchery Side Channel	Tail	Pool
60	SH	2	21-Feb-19	Lower Hatchery Side Channel	Middle	Glide
61	SH	3	21-Feb-19	Lower Hatchery Side Channel	Tail	Glide
19	SH	10	10-Jan-19	Lower Moe's Side Channel	Tail	Glide
28	SH	4	17-Jan-19	Lower Moe's Side Channel	Middle	Glide
29	SH	5	17-Jan-19	Lower Moe's Side Channel	Middle	Glide
33	SH	4	24-Jan-19	Lower Moe's Side Channel	Tail	Glide
34	SH	5	24-Jan-19	Lower Moe's Side Channel	Tail	Pool
35	SH		24-Jan-19	Lower Moe's Side Channel	Tail	Pool
36	SH	7	24-Jan-19	Lower Moe's Side Channel	Tail	Pool

69	SH		28-Jan-19	Lower Moe's Side Channel	Middle	Glide
22	SH	1	11-Jan-19	Mathew's Riffle	Tail	Pool
23	SH	2	11-Jan-19	Mathew's Riffle	Tail	Pool
24	SH	3	11-Jan-19	Mathew's Riffle	Tail	Pool
6	SH	006	03-Jan-19	Moe's Ditch	Head	Riffle
7	SH	007	03-Jan-19	Moe's Ditch	Middle	Glide
8	SH	008	03-Jan-19	Moe's Ditch	Middle	Glide
9	SH	009	03-Jan-19	Moe's Ditch	Middle	Glide
20	SH	11	10-Jan-19	Moe's Ditch	Middle	Glide
21	SH	12	10-Jan-19	Moe's Ditch	Middle	Glide
26	SH	2	17-Jan-19	Moe's Ditch	Tail	Pool
27	SH	3	17-Jan-19	Moe's Ditch	Tail	Pool
37	SH	8	24-Jan-19	Moe's Ditch	Tail	Pool
38	SH	9	24-Jan-19	Moe's Ditch	Tail	Pool
39	SH	10	24-Jan-19	Moe's Ditch	Tail	Pool

40	SH	11	24-Jan-19	Moe's Ditch	Tail	Pool
41	SH	12	24-Jan-19	Moe's Ditch	Tail	Glide
44	SH	15	24-Jan-19	Moe's Ditch	Middle	Riffle
45	SH	16	24-Jan-19	Moe's Ditch	Head	Pool
46	SH	17	24-Jan-19	Moe's Ditch	Tail	Pool
68	SH		28-Jan-19	Moe's Ditch	Middle	Glide
54	SH	2	07-Feb-19	Moe's Ditch	Tail	Glide
55	SH	3	07-Feb-19	Moe's Ditch	Tail	Pool
56	SH	4	07-Feb-19	Moe's Ditch	Tail	Pool
57	SH	5	07-Feb-19	Moe's Ditch	Tail	Pool
51	SH	2	31-Jan-19	Steep Riffle	Tail	Pool
49	SH	1	25-Jan-19	Steep Side Channel	Tail	Pool
50	SH	1	31-Jan-19	Steep Side Channel	Tail	Glide

52	SH	3	31-Jan-19	Steep Side Channel	Tail	Glide
58	SH	6	07-Feb-19	Table Mountain Riffle	Tail	Pool
67	SH		28-Jan-19	Upper Hatchery Riffle	Head	Glide
1	SH	001	03-Jan-19	Upper Hatchery Side Channel	Middle	Glide
2	SH	002	03-Jan-19	Upper Hatchery Side Channel	Middle	Glide
3	SH	003	03-Jan-19	Upper Hatchery Side Channel	Middle	Glide
10	SH	1	10-Jan-19	Upper Hatchery Side Channel	Tail	Pool
11	SH	2	10-Jan-19	Upper Hatchery Side Channel	Tail	Pool
12	SH	3	10-Jan-19	Upper Hatchery Side Channel	Tail	Pool
13	SH	4	10-Jan-19	Upper Hatchery Side Channel	Tail	Pool
14	SH	5	10-Jan-19	Upper Hatchery Side Channel	Middle	Glide
25	SH	1	17-Jan-19	Upper Hatchery Side Channel	Middle	Glide

42	SH	13	24-Jan-19	Upper Hatchery Side Channel	Middle	Glide
43	SH	14	24-Jan-19	Upper Hatchery Side Channel	Middle	Glide
66	SH		28-Jan-19	Upper Hatchery Side Channel	Middle	Glide
62	SH	4	21-Feb-19	Upper Hatchery Side Channel	Tail	Glide
63	SH	5	21-Feb-19	Upper Hatchery Side Channel	Tail	Glide
64	SH	6	21-Feb-19	Upper Hatchery Side Channel	Middle	Glide
65	SH	1	28-Feb-19	Upper Hatchery Side Channel	Tail	Glide

__of_Steel	Distance_t	Pot_Length	Pot_Width	Depth	Redd_Lengt	Redd_Width
2	1.5	0.4	0.3	0.24	1	0.5
1	3	0.6	0.6	0.24	1.5	1
0	1.5	0.6	0.6	0.32	1.3	0.8
0	1	0.4	0.3	0.2	1	0.6
0	0.5	0.4	0.4	0.18	2.2	1
0	0.2	0.4	0.3	0.38	1.5	1
0	4.5	0.4	0.5	0.14	1.3	0.8
0	5	0.6	0.6	0.12	1.3	0.8
0	3	0.4	0.4	0.34	1	0.8
0	1	0.4	0.4	0.2	2	0.9
0	2.5	0.5	0.5	0.26	1.7	1

0	1.5	0.4	0.3	0.32	1.4	0.9
0	2	0.7	0.5	0.26	1.8	1
0	2.5	0.5	0.4	0.22	1.1	0.7
0	1	0.4	0.4	0.24	1.1	0.8
0	1	0.3	0.3	0.25	0.9	0.6
0	1.1	0.4	0.4	0.16	1.1	0.7
0	1.8	0.4	0.3	0.28	1.2	0.5
2	3	0.6	0.5	0.34	1.2	0.8
0	0.5	0.4	0.3	0.24	1.5	0.7
1	1.2	0.5	0.4	0.26	1.5	0.8
3	2.5	0.4	0.4	0.36	1.8	0.7
2	3.5	0.5	0.4	0.44	1.1	0.6
1	2	0.4	0.3	0.38	1.2	0.6

1	1.2	0.6	0.4	0.32	1.5	0.8
0	3.5	0.5	0.4	0.34	1	0.7
0	2	0.4	0.3	0.28	0.9	0.5
0	0.8	0.5	0.4	0.22	1	0.7
2	0.5	0.6	0.5	0.3	1.5	0.7
0	3.5	0.5	0.4	0.28	1.3	0.6
1	3	0.5	0.5	0.3	1.4	0.8
0	1.5	0.6	0.5	0.26	1.5	1
2	1.3	0.6	0.6	0.4	1.4	1.5
0	0.5	0.6	0.6	0.26	1.6	0.9
1	0.5	0.4	0.4	0.42	1	0.7
0	2.5	0.4	0.3	0.42	1.1	0.6
2	2	0.3	0.3	0.3	1.1	0.6
0	2	0.4	0.3	0.28	0.9	0.5
2	2	0.6	0.5	0.54	1.4	0.8

1	2	0.5	0.4	0.42	1.3	0.7
0	0.5	0.4	0.4	0.22	1.2	0.7
3	2.5	0.5	0.5	0.26	1.3	0.9
0	0.5	0.6	0.4	0.34	1.4	0.8
2	1.5	0.4	0.4	0.3	1	0.6
1	2	0.5	0.4	0.3	1	0.8
0	6	0.3	0.3	0.24	1	0.5
2	2	0.3	0.3	0.4	1.5	0.7
2	2	0.5	0.4	0.38	1.7	0.7
3	2.5	0.5	0.4	0.4	1.3	0.8
0	20	0.4	0.3	0.5	1.3	0.8
0	1.2	0.5	0.4	0.38	1.3	0.6
0	1.1	0.3	0.3	0.24	1.5	0.5

0	0.5	0.4	0.4	0.32	1.7	0.7
0	2	0.4	0.4	0.38	1.2	0.6
2	2.5	0.4	0.4	0.2	0.8	0.6
0	2	0.4	0.3	0.18	0.9	0.4
0	2.3	0.3	0.3	0.32	0.8	0.5
0	3	0.6	0.5	0.28	1.5	0.6
0	2	0.5	0.4	0.48	1.5	1
0	2.3	0.5	0.5	0.4	1.8	1.1
0	1.5	0.3	0.3	0.46	1	0.4
0	1	0.5	0.6	0.24	2	1.8
1	1.8	0.5	0.5	0	1.2	0.8
0	2.5	0.5	0.4	0.32	1.9	1

0	2.5	0.5	0.3	0.2	1	0.5
0	2	0.4	0.3	0.22	1.1	0.8
0	6	0.4	0.3	0.22	0.9	0.5
2	1.1	0.4	0.3	0.3	1.2	0.7
0	3	0.3	0.3	0.32	1	0.4
4	3.5	0.4	0.3	0.38	1.1	0.6
0	1.2	0.4	0.3	0.26	1.1	0.8

Velocity__	__silt__m	__sand	__gravel	__pebble	__cobble	__boulder
0	0	5	60	35	0	0
0	0	10	75	15	0	0
0	0	10	20	30	40	0
0	0	5	25	35	35	0
0	0	5	25	50	20	0
0	0	10	20	40	30	0
0	0	10	25	50	15	0
0	0	10	15	60	15	0
0	0	15	30	40	15	0
0	0	5	20	50	25	0
0	0	10	20	60	10	0

0	0	25	30	40	5	0
0	0	15	30	40	15	0
0	0	0	15	70	15	0
0	0	5	25	50	20	0
0	0	10	40	50	0	0
0	0	5	15	60	20	0
0	0	5	25	50	20	0
0	0	5	20	40	35	0
0	0	15	25	55	5	0
0	0	5	20	60	15	0
0	0	10	30	40	20	0
0	0	5	30	35	30	0
0	0	10	20	40	30	0

0	0	5	10	40	45	0
0	0	5	35	20	35	0
0	0	10	20	40	30	0
0	0	15	30	40	15	0
0	0	5	40	40	15	0
0	0	5	25	30	40	0
0	0	5	30	50	15	0
0	0	5	35	35	25	0
0	0	5	15	40	40	0
0	0	5	25	30	30	10
0	0	15	35	35	15	0
0	0	0	20	40	30	10
0	0	15	45	20	20	0
0	0	5	25	35	35	0
0	0	5	30	50	15	0

0	0	5	10	35	50	0
0	0	5	15	40	40	0
0	0	5	35	45	15	0
0	0	5	15	60	20	0
0	0	5	10	35	50	0
0	0	5	20	50	25	0
0	0	5	15	60	20	0
0	0	40	30	20	10	0
0	0	10	20	50	20	0
0	0	5	20	60	15	0
0	0	10	25	35	30	0
0	0	5	15	60	20	0
0	0	5	20	60	15	0

0	0	5	25	60	10	0
0	0	5	20	55	20	0
0	0	15	15	45	25	0
0	0	15	20	60	5	0
0	0	10	20	60	10	0
0	0	20	30	40	10	0
0	0	10	25	45	20	0
0	0	10	30	40	20	0
0	0	10	20	60	10	0
0	0	10	40	25	25	0
0	0	10	35	40	15	0
0	0	5	30	50	15	0

0	0	10	25	50	15	0
0	0	5	25	50	20	0
0	0	15	15	50	20	0
0	0	5	25	40	30	0
0	0	5	20	60	15	0
0	0	10	25	35	30	0
0	0	5	20	70	5	0

Overhead_C	Distance_a	Instream_C	Instream_2	Max_PDOP	Max_HDOP	Corr_Type
Yes	< 2 meters	Yes	LWD	4.4	2.1	Real-time Carrier
Yes	Canopy	Yes	SWD	1.5	0.8	Real-time Code
No		No		3.8	2.1	Real-time Carrier
Yes	2-6 meters	No		1.9	1.1	Real-time Code
Yes	Canopy	No		1.7	0.9	Real-time Code
Yes	Canopy	No		2.9	1.8	Real-time Carrier
No		No		2.4	1.2	Real-time Carrier
No		No		2.3	1.2	Real-time Carrier
No		Yes	SWD	2.2	1.1	Real-time Carrier
Yes	2-6 meters	No		16.3	9.4	Real-time Carrier
Yes	< 2 meters	No		12.3	5.4	Real-time Carrier

No		No		2.2	1.3	Real-time Carrier
Yes	2-6 meters	Yes	SWD	2	1.1	Real-time Code
Yes	Canopy	No		4.6	2.5	L1L2 Postprocessed Carrier Float
Yes	Canopy	No		1.7	0.9	Real-time Code
No		No		2	1	Real-time Carrier
Yes	2-6 meters	No		2.7	1.3	Real-time Carrier
No		No		2	1.1	Real-time Carrier
No		No		1.5	0.8	Real-time Code
Yes	2-6 meters	No		1.9	1.2	Real-time Carrier
No		No		2.7	1.3	Real-time Carrier
No		No		1.8	1	Real-time Carrier
No		No		2.1	1	Real-time Carrier
No		No		1.9	1	Real-time Carrier

No		No		1.7	1.1	Real-time Carrier
No		No		1.9	0.9	Real-time Carrier
No		No		1.4	0.7	Real-time Carrier
No		No		1.4	0.8	Real-time Carrier
Yes	< 2 meters	Yes	SWD	2	1.3	Real-time Carrier
No		No		1.5	0.8	Real-time Carrier
No		No		2.1	1.6	Real-time Carrier
No		No		1.8	1.2	Real-time Carrier
No		No		2.5	1.3	Real-time Carrier
No		Yes	SWD	1.6	0.9	Real-time Carrier
Yes	2-6 meters	Yes	SWD	2.2	1.5	Real-time Carrier
No		No		3.1	1.6	Real-time Carrier
No		No		2.2	1.2	Real-time Carrier
No		No		2.2	1.1	Real-time Carrier
No		No		2.4	1.2	Real-time Carrier

No		No		1.9	1	Real-time Carrier
Yes	2-6 meters	Yes	SWD	1.9	1.1	Real-time Carrier
No		No		1.6	0.9	Real-time Carrier
Yes	2-6 meters	No		2.1	1.3	Real-time Carrier
No		No		1.8	1	Real-time Carrier
No		No		2.2	1.1	Real-time Carrier
No		No		1.8	1.1	L1L2 Postprocessed Carrier Float
Yes	Canopy	No		4.4	1.7	L1L2 Postprocessed Carrier Float
Yes	< 2 meters	Yes	SWD	5.4	2	L1L2 Postprocessed Carrier Float
No		No		2.8	1.4	L1L2 Postprocessed Carrier Float
No		No		1.7	1	L1L2 Postprocessed Carrier Float
No		No		2.2	0.9	Real-time Carrier
No		No		3.2	1.3	L1L2 Postprocessed Carrier Float

Yes	2-6 meters	No		2.5	1.9	L1L2 Postprocesse d Carrier Float
No		No		2.6	1.2	Postprocesse d Code
No		Yes	SWD	2.1	1	Real-time Carrier
Yes	Canopy	No		2.5	1.3	Real-time Carrier
No		No		2.7	1	Real-time Carrier
No		No		2.6	1	Real-time Carrier
Yes	Canopy	No		3.5	1.5	Real-time Carrier
Yes	Canopy	Yes	SWD	3.1	1.7	Real-time Carrier
Yes	Canopy	Yes	LWD	7.4	2.1	Real-time Carrier
Yes	Canopy	No		4.4	2	Real-time Carrier
Yes	Canopy	No		4.7	3.2	Real-time Code
Yes	Canopy	No		4.9	2.9	Real-time Carrier

Yes	Canopy	Yes	SWD	3.9	1.7	Real-time Carrier
Yes	Canopy	Yes	SWD	1.4	0.9	Real-time Code
No		No		2.3	1.1	Real-time Carrier
Yes	Canopy	No		2.3	1.1	Real-time Carrier
Yes	Canopy	Yes	LWD	2.4	1.2	Real-time Carrier
Yes	< 2 meters	No		4.7	1.4	Real-time Carrier
Yes	Canopy	No		1.7	0.9	Real-time Carrier

Rcvr_Type	GPS_Date	GPS_Time	Feat_Name	Datafile	Unfilt_Pos	Filt_Pos
GeoXH 6000	03-Jan-19	11:26:25am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	03-Jan-19	11:35:04am	SH_Redd	2019 SH REDD SRVY WK	11	11
GeoXH 6000	10-Jan-19	11:25:00am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	10-Jan-19	11:35:17am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	10-Jan-19	11:41:18am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	10-Jan-19	12:01:16pm	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	24-Jan-19	09:54:44am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	24-Jan-19	09:58:26am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	24-Jan-19	10:03:37am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	24-Jan-19	02:01:15pm	SH_Redd	2019 SH REDD SRVY WK	12	12
GeoXH 6000	24-Jan-19	02:08:35pm	SH_Redd	2019 SH REDD SRVY WK	10	10

GeoXH 6000	28-Jan-19	10:01:55am	SH_Redd	SH REDD SRVY 2019 WK	10	10
GeoXH 6000	28-Jan-19	10:26:43am	SH_Redd	SH REDD SRVY 2019 WK	11	11
GeoXH 6000	07-Feb-19	09:35:58am	SH_Redd	2019 SH REDD SRVY WK	15	15
GeoXH 6000	21-Feb-19	09:58:11am	SH_Redd	2019 SH REDD SRVY WK	12	12
GeoXH 6000	21-Feb-19	10:08:55am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	21-Feb-19	10:22:05am	SH_Redd	2019 SH REDD SRVY WK	12	12
GeoXH 6000	10-Jan-19	12:09:01pm	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	17-Jan-19	12:16:29pm	SH_Redd	2019 SH REDD SRVY WK	11	11
GeoXH 6000	17-Jan-19	12:25:44pm	SH_Redd	2019 SH REDD SRVY WK	11	11
GeoXH 6000	24-Jan-19	10:23:03am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	24-Jan-19	10:31:26am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	24-Jan-19	10:38:36am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	24-Jan-19	10:44:58am	SH_Redd	2019 SH REDD SRVY WK	10	10

GeoXH 6000	28-Jan-19	09:52:13am	SH_Redd	SH REDD SRVY 2019 WK	10	10
GeoXH 6000	11-Jan-19	11:01:49am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	11-Jan-19	11:07:56am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	11-Jan-19	11:16:18am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	03-Jan-19	11:56:19am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	03-Jan-19	12:03:52pm	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	03-Jan-19	12:10:16pm	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	03-Jan-19	12:19:00pm	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	10-Jan-19	12:26:44pm	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	10-Jan-19	12:47:28pm	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	17-Jan-19	12:01:59pm	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	17-Jan-19	12:07:18pm	SH_Redd	2019 SH REDD SRVY WK	11	11
GeoXH 6000	24-Jan-19	10:51:12am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	24-Jan-19	11:00:36am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	24-Jan-19	11:04:11am	SH_Redd	2019 SH REDD SRVY WK	10	10

GeoXH 6000	24-Jan-19	11:09:28am	SH_Redd	2019 SH REDD SRVY WK	11	11
GeoXH 6000	24-Jan-19	11:15:29am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	24-Jan-19	01:41:57pm	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	24-Jan-19	01:46:41pm	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	24-Jan-19	01:54:07pm	SH_Redd	2019 SH REDD SRVY WK	11	11
GeoXH 6000	28-Jan-19	09:40:21am	SH_Redd	SH REDD SRVY 2019 WK	10	10
GeoXH 6000	07-Feb-19	10:04:43am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	07-Feb-19	10:11:54am	SH_Redd	2019 SH REDD SRVY WK	15	15
GeoXH 6000	07-Feb-19	10:17:46am	SH_Redd	2019 SH REDD SRVY WK	14	14
GeoXH 6000	07-Feb-19	10:24:49am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	31-Jan-19	12:37:07pm	SH_Redd	2019 SH REDD SRVY WK	15	15
GeoXH 6000	25-Jan-19	09:54:00am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	31-Jan-19	12:21:56pm	SH_Redd	2019 SH REDD SRVY WK	14	14

GeoXH 6000	31-Jan-19	12:50:24pm	SH_Redd	2019 SH REDD SRVY WK	13	13
GeoXH 6000	07-Feb-19	01:38:03pm	SH_Redd	2019 SH REDD SRVY WK	13	13
GeoXH 6000	28-Jan-19	09:25:01am	SH_Redd	SH REDD SRVY 2019 WK	10	10
GeoXH 6000	03-Jan-19	09:50:42am	SH_Redd	2019 SH REDD SRVY WK	17	17
GeoXH 6000	03-Jan-19	09:59:15am	SH_Redd	2019 SH REDD SRVY WK	11	11
GeoXH 6000	03-Jan-19	10:07:06am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	10-Jan-19	10:29:20am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	10-Jan-19	10:38:11am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	10-Jan-19	10:42:26am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	10-Jan-19	10:54:00am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	10-Jan-19	11:00:45am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	17-Jan-19	11:24:42am	SH_Redd	2019 SH REDD SRVY WK	9	9

GeoXH 6000	24-Jan-19	01:28:22pm	SH_Redd	2019 SH REDD SRVY WK	11	11
GeoXH 6000	24-Jan-19	01:32:34pm	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	28-Jan-19	09:19:39am	SH_Redd	SH REDD SRVY 2019 WK	10	10
GeoXH 6000	21-Feb-19	10:37:59am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	21-Feb-19	10:41:37am	SH_Redd	2019 SH REDD SRVY WK	12	12
GeoXH 6000	21-Feb-19	10:47:15am	SH_Redd	2019 SH REDD SRVY WK	12	12
GeoXH 6000	28-Feb-19	01:45:06pm	SH_Redd	2019 SH REDD SRVY WK	15	15

Data_Dicti	GPS_Week	GNSS_Heigh	Vert_Prec	Horz_Prec	Std_Dev	Northing
SH Redd 2017	2034	12.478	0.2	0.2	0.013195	4375076.761
SH Redd 2017	2034	14.189	2.3	1.5	0.296651	4375063.387
SH Redd 2017	2035	12.262	0.2	0.2	0.008999	4375075.727
SH Redd 2017	2035	12.923	2.5	1.7	0.379378	4375061.428
SH Redd 2017	2035	10.863	2.6	1.8	0.286524	4375065.487
SH Redd 2017	2035	11.109	1.2	1.1	0.373467	4375029.117
SH Redd 2017	2037	11.189	0.2	0.2	0.011159	4375023.192
SH Redd 2017	2037	11.344	0.2	0.2	0.027077	4375021.699
SH Redd 2017	2037	11.35	0.2	0.2	0.049413	4375027.211
SH Redd 2017	2037	15.386	1.6	1.7	0.352935	4375060.501
SH Redd 2017	2037	12.347	0.2	0.2	0.073403	4375076.792

SH Redd 2017	2038	10.834	0.2	0.2	0.010748	4375028.41
SH Redd 2017	2038	11.866	2.2	1.4	0.205981	4375063.254
SH Redd 2017	2039	11.765	0.4	0.2	0.081722	4375075.426
SH Redd 2017	2041	11.14	0.2	0.2	0.124114	4375029.337
SH Redd 2017	2041	11.018	0.2	0.2	0.014341	4375046.422
SH Redd 2017	2041	11.951	0.2	0.2	0.021611	4375063.016
SH Redd 2017	2035	11.295	0.2	0.2	0.022999	4375002.63
SH Redd 2017	2036	15.045	1.9	1.2	0.411048	4375024.186
SH Redd 2017	2036	11.29	0.2	0.2	0.029401	4375010.263
SH Redd 2017	2037	11.471	0.2	0.2	0.038881	4375005.012
SH Redd 2017	2037	11.432	0.2	0.2	0.016846	4375013.615
SH Redd 2017	2037	11.399	0.2	0.2	0.02394	4375026.333
SH Redd 2017	2037	11.635	0.2	0.2	0.01795	4375029.514

SH Redd 2017	2038	11.269	0.2	0.2	0.017601	4375025.725
SH Redd 2017	2035	9.152	0.2	0.2	0.023989	4372478.468
SH Redd 2017	2035	9.301	0.2	0.2	0.023635	4372472.992
SH Redd 2017	2035	9.223	0.2	0.2	0.013103	4372471.886
SH Redd 2017	2034	11.52	0.2	0.2	0.026303	4375013.777
SH Redd 2017	2034	11.771	0.2	0.2	0.012709	4375036.384
SH Redd 2017	2034	11.762	0.2	0.2	0.022474	4375039.362
SH Redd 2017	2034	12.025	0.2	0.2	0.016546	4375047.264
SH Redd 2017	2035	11.548	0.2	0.2	0.013889	4375039.967
SH Redd 2017	2035	11.867	0.2	0.2	0.035208	4375044.906
SH Redd 2017	2036	11.343	0.2	0.2	0.024834	4375036.893
SH Redd 2017	2036	11.265	0.2	0.2	0.008538	4375031.179
SH Redd 2017	2037	11.547	0.2	0.2	0.042093	4375035.055
SH Redd 2017	2037	11.777	0.2	0.2	0.022529	4375035.977
SH Redd 2017	2037	11.494	0.2	0.2	0.013515	4375041.034

SH Redd 2017	2037	11.589	0.2	0.2	0.120082	4375041.622
SH Redd 2017	2037	11.755	0.2	0.2	0.029948	4375043.738
SH Redd 2017	2037	12.058	0.2	0.2	0.009862	4375045.676
SH Redd 2017	2037	11.909	0.2	0.2	0.023991	4375045.364
SH Redd 2017	2037	11.864	0.2	0.2	0.011464	4375038.743
SH Redd 2017	2038	11.383	0.2	0.2	0.015085	4375036.441
SH Redd 2017	2039	11.112	0.2	0.2	0.009607	4375034.669
SH Redd 2017	2039	11.248	0.3	0.2	0.044325	4375031.251
SH Redd 2017	2039	11.118	0.2	0.2	0.047221	4375041.105
SH Redd 2017	2039	11.215	0.2	0.2	0.02021	4375040.53
SH Redd 2017	2038	6.19	0.2	0.2	0.031561	4369125.157
SH Redd 2017	2037	5.677	0.2	0.2	0.015073	4369083.485
SH Redd 2017	2038	5.101	0.2	0.2	0.064683	4369051.453

SH Redd 2017	2038	5.025	0.2	0.2	0.04754	4369054.295
SH Redd 2017	2039	12.983	0.6	0.5	0.526989	4375252.786
SH Redd 2017	2038	12.596	0.2	0.2	0.039396	4375108.267
SH Redd 2017	2034	12.72	0.2	0.2	0.346903	4375102.153
SH Redd 2017	2034	12.939	0.2	0.2	0.026384	4375096.897
SH Redd 2017	2034	12.793	0.2	0.2	0.014237	4375106.121
SH Redd 2017	2035	12.663	0.2	0.2	0.021024	4375096.647
SH Redd 2017	2035	12.536	0.2	0.2	0.18459	4375097.307
SH Redd 2017	2035	12.756	0.7	0.2	0.034754	4375100.682
SH Redd 2017	2035	12.913	0.2	0.2	0.040122	4375108.249
SH Redd 2017	2035	12.939	0.2	0.2	0.017697	4375109.137
SH Redd 2017	2036	16.4	1.7	1	0.054367	4375096.378

SH Redd 2017	2037	13.483	1.9	1	0.2898	4375102.614
SH Redd 2017	2037	13.26	1.9	1.4	0.383047	4375107.472
SH Redd 2017	2038	12.616	0.3	0.3	0.034447	4375106.63
SH Redd 2017	2041	12.743	0.3	0.2	0.022642	4375096.439
SH Redd 2017	2041	12.839	0.2	0.2	0.017027	4375099.032
SH Redd 2017	2041	12.657	0.6	0.3	0.154456	4375102.15
SH Redd 2017	2042	17.815	1.7	1.4		4375086.582

Easting
623967.449
623901.72
623969.133
623901.136
623895.209
623762.454
623756.767
623753.727
623763.124
623906.371
623968.956

623764.958
623902.714
623947.58
623760.256
623865.871
623921.099
623818.264
623839.404
623824.765
623827.824
623834.066
623842.524
623861.436

623836.343
622186.97
622186.186
622187.331
623836.117
623889.09
623900.537
623997.805
623887.872
623972.344
623874.339
623861.227
623889.734
623899.034
623901.252

623909.623
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623988.87
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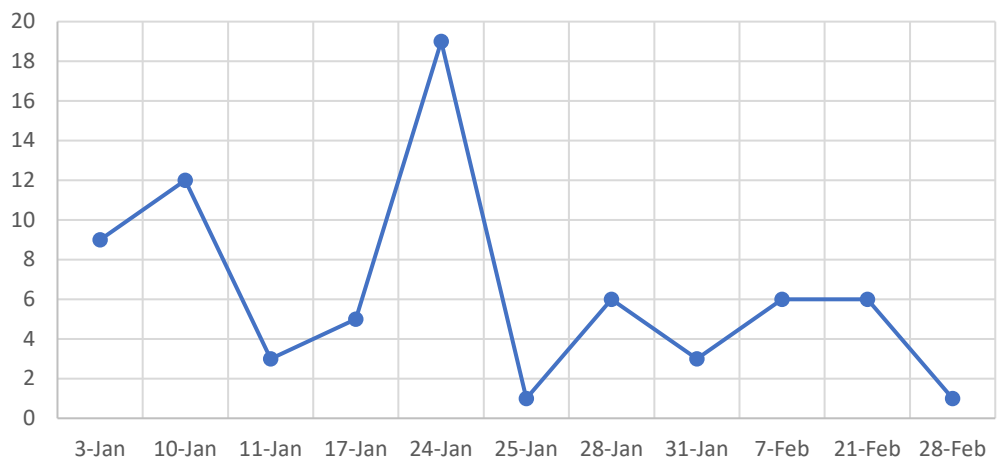
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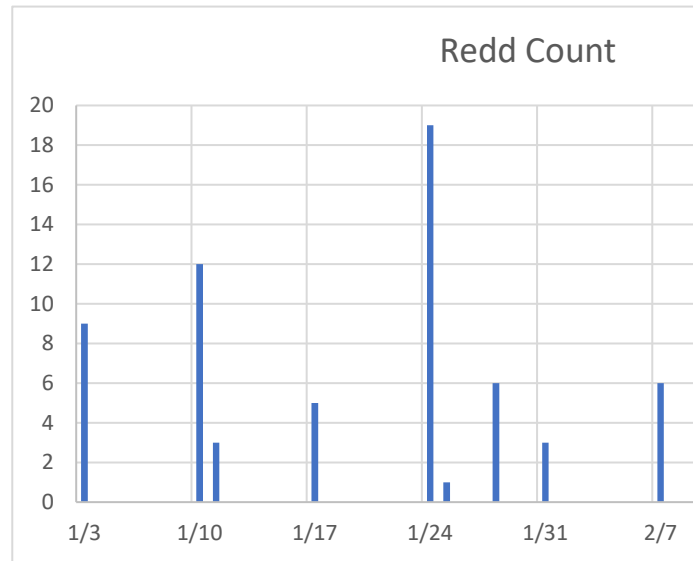
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10-Jan	12
11-Jan	3
17-Jan	5
24-Jan	19
25-Jan	1
28-Jan	6
31-Jan	3
7-Feb	6
21-Feb	6
28-Feb	1
Grand Total	71

Date	Reed Count
3-Jan	9
10-Jan	12
11-Jan	3
17-Jan	5
24-Jan	19
25-Jan	1
28-Jan	6
31-Jan	3
7-Feb	6
21-Feb	6
28-Feb	1

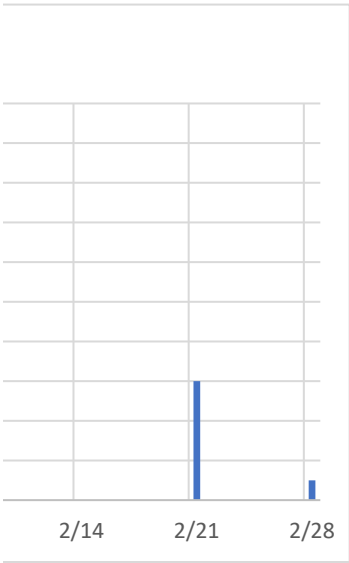
Redd Count



Date	Redd Count
1/3/2019	9
1/4/2019	
1/5/2019	
1/6/2019	
1/7/2019	
1/8/2019	
1/9/2019	
1/10/2019	12
1/11/2019	3
1/12/2019	
1/13/2019	
1/14/2019	
1/15/2019	
1/16/2019	
1/17/2019	5
1/18/2019	
1/19/2019	
1/20/2019	
1/21/2019	
1/22/2019	
1/23/2019	
1/24/2019	19
1/25/2019	1
1/26/2019	
1/27/2019	
1/28/2019	6
1/29/2019	
1/30/2019	
1/31/2019	3
2/1/2019	
2/2/2019	
2/3/2019	
2/4/2019	
2/5/2019	
2/6/2019	
2/7/2019	6
2/8/2019	
2/9/2019	
2/10/2019	
2/11/2019	
2/12/2019	
2/13/2019	
2/14/2019	
2/15/2019	
2/16/2019	



2/17/2019	
2/18/2019	
2/19/2019	
2/20/2019	
2/21/2019	6
2/22/2019	
2/23/2019	
2/24/2019	
2/25/2019	
2/26/2019	
2/27/2019	
2/28/2019	1



Count

	Species	Feature_ID	Date	Riffle_Nam	Riffle_Pos	Geomorphic
4	SH	004	03-Jan-19	Lower Hatchery Side Channel	Tail	Riffle
5	SH	005	03-Jan-19	Lower Hatchery Side Channel	Head	Riffle
15	SH	6	10-Jan-19	Lower Hatchery Side Channel	Tail	Glide
16	SH	7	10-Jan-19	Lower Hatchery Side Channel	Middle	Glide
17	SH	8	10-Jan-19	Lower Hatchery Side Channel	Middle	Riffle
18	SH	9	10-Jan-19	Lower Hatchery Side Channel	Tail	Pool
30	SH	1	24-Jan-19	Lower Hatchery Side Channel	Tail	Glide
31	SH	2	24-Jan-19	Lower Hatchery Side Channel	Tail	Glide
32	SH	3	24-Jan-19	Lower Hatchery Side Channel	Tail	Pool
47	SH	18	24-Jan-19	Lower Hatchery Side Channel	Middle	Glide
48	SH	19	24-Jan-19	Lower Hatchery Side Channel	Tail	Glide

70	SH		28-Jan-19	Lower Hatchery Side Channel	Tail	Glide
71	SH		28-Jan-19	Lower Hatchery Side Channel	Tail	Glide
53	SH	1	07-Feb-19	Lower Hatchery Side Channel	Tail	Glide
59	SH	1	21-Feb-19	Lower Hatchery Side Channel	Tail	Pool
60	SH	2	21-Feb-19	Lower Hatchery Side Channel	Middle	Glide
61	SH	3	21-Feb-19	Lower Hatchery Side Channel	Tail	Glide
1	SH	001	03-Jan-19	Upper Hatchery Side Channel	Middle	Glide
2	SH	002	03-Jan-19	Upper Hatchery Side Channel	Middle	Glide
3	SH	003	03-Jan-19	Upper Hatchery Side Channel	Middle	Glide
10	SH	1	10-Jan-19	Upper Hatchery Side Channel	Tail	Pool
11	SH	2	10-Jan-19	Upper Hatchery Side Channel	Tail	Pool

12	SH	3	10-Jan-19	Upper Hatchery Side Channel	Tail	Pool
13	SH	4	10-Jan-19	Upper Hatchery Side Channel	Tail	Pool
14	SH	5	10-Jan-19	Upper Hatchery Side Channel	Middle	Glide
25	SH	1	17-Jan-19	Upper Hatchery Side Channel	Middle	Glide
42	SH	13	24-Jan-19	Upper Hatchery Side Channel	Middle	Glide
43	SH	14	24-Jan-19	Upper Hatchery Side Channel	Middle	Glide
66	SH		28-Jan-19	Upper Hatchery Side Channel	Middle	Glide
62	SH	4	21-Feb-19	Upper Hatchery Side Channel	Tail	Glide
63	SH	5	21-Feb-19	Upper Hatchery Side Channel	Tail	Glide
64	SH	6	21-Feb-19	Upper Hatchery Side Channel	Middle	Glide
65	SH	1	28-Feb-19	Upper Hatchery Side Channel	Tail	Glide

__of_Steel	Distance_t	Pot_Length	Pot_Width	Depth	Redd_Lengt	Redd_Width
2	1.5	0.4	0.3	0.24	1	0.5
1	3	0.6	0.6	0.24	1.5	1
0	1.5	0.6	0.6	0.32	1.3	0.8
0	1	0.4	0.3	0.2	1	0.6
0	0.5	0.4	0.4	0.18	2.2	1
0	0.2	0.4	0.3	0.38	1.5	1
0	4.5	0.4	0.5	0.14	1.3	0.8
0	5	0.6	0.6	0.12	1.3	0.8
0	3	0.4	0.4	0.34	1	0.8
0	1	0.4	0.4	0.2	2	0.9
0	2.5	0.5	0.5	0.26	1.7	1

0	1.5	0.4	0.3	0.32	1.4	0.9
0	2	0.7	0.5	0.26	1.8	1
0	2.5	0.5	0.4	0.22	1.1	0.7
0	1	0.4	0.4	0.24	1.1	0.8
0	1	0.3	0.3	0.25	0.9	0.6
0	1.1	0.4	0.4	0.16	1.1	0.7
0	2	0.4	0.3	0.18	0.9	0.4
0	2.3	0.3	0.3	0.32	0.8	0.5
0	3	0.6	0.5	0.28	1.5	0.6
0	2	0.5	0.4	0.48	1.5	1
0	2.3	0.5	0.5	0.4	1.8	1.1

0	1.5	0.3	0.3	0.46	1	0.4
0	1	0.5	0.6	0.24	2	1.8
1	1.8	0.5	0.5	0	1.2	0.8
0	2.5	0.5	0.4	0.32	1.9	1
0	2.5	0.5	0.3	0.2	1	0.5
0	2	0.4	0.3	0.22	1.1	0.8
0	6	0.4	0.3	0.22	0.9	0.5
2	1.1	0.4	0.3	0.3	1.2	0.7
0	3	0.3	0.3	0.32	1	0.4
4	3.5	0.4	0.3	0.38	1.1	0.6
0	1.2	0.4	0.3	0.26	1.1	0.8

Velocity__	__silt__m	__sand	__gravel	__pebble	__cobble	__boulder
0	0	5	60	35	0	0
0	0	10	75	15	0	0
0	0	10	20	30	40	0
0	0	5	25	35	35	0
0	0	5	25	50	20	0
0	0	10	20	40	30	0
0	0	10	25	50	15	0
0	0	10	15	60	15	0
0	0	15	30	40	15	0
0	0	5	20	50	25	0
0	0	10	20	60	10	0

0	0	25	30	40	5	0
0	0	15	30	40	15	0
0	0	0	15	70	15	0
0	0	5	25	50	20	0
0	0	10	40	50	0	0
0	0	5	15	60	20	0
0	0	15	20	60	5	0
0	0	10	20	60	10	0
0	0	20	30	40	10	0
0	0	10	25	45	20	0
0	0	10	30	40	20	0

0	0	10	20	60	10	0
0	0	10	40	25	25	0
0	0	10	35	40	15	0
0	0	5	30	50	15	0
0	0	10	25	50	15	0
0	0	5	25	50	20	0
0	0	15	15	50	20	0
0	0	5	25	40	30	0
0	0	5	20	60	15	0
0	0	10	25	35	30	0
0	0	5	20	70	5	0

0 9.393939394 27.12121212 46.96969697 16.51515152 0

Overhead_C	Distance_a	Instream_C	Instream_2	Max_PDOP	Max_HDOP	Corr_Type
Yes	< 2 meters	Yes	LWD	4.4	2.1	Real-time Carrier
Yes	Canopy	Yes	SWD	1.5	0.8	Real-time Code
No		No		3.8	2.1	Real-time Carrier
Yes	2-6 meters	No		1.9	1.1	Real-time Code
Yes	Canopy	No		1.7	0.9	Real-time Code
Yes	Canopy	No		2.9	1.8	Real-time Carrier
No		No		2.4	1.2	Real-time Carrier
No		No		2.3	1.2	Real-time Carrier
No		Yes	SWD	2.2	1.1	Real-time Carrier
Yes	2-6 meters	No		16.3	9.4	Real-time Carrier
Yes	< 2 meters	No		12.3	5.4	Real-time Carrier

No		No		2.2	1.3	Real-time Carrier
Yes	2-6 meters	Yes	SWD	2	1.1	Real-time Code
Yes	Canopy	No		4.6	2.5	L1L2 Postprocessed Carrier Float
Yes	Canopy	No		1.7	0.9	Real-time Code
No		No		2	1	Real-time Carrier
Yes	2-6 meters	No		2.7	1.3	Real-time Carrier
Yes	Canopy	No		2.5	1.3	Real-time Carrier
No		No		2.7	1	Real-time Carrier
No		No		2.6	1	Real-time Carrier
Yes	Canopy	No		3.5	1.5	Real-time Carrier
Yes	Canopy	Yes	SWD	3.1	1.7	Real-time Carrier

Yes	Canopy	Yes	LWD	7.4	2.1	Real-time Carrier
Yes	Canopy	No		4.4	2	Real-time Carrier
Yes	Canopy	No		4.7	3.2	Real-time Code
Yes	Canopy	No		4.9	2.9	Real-time Carrier
Yes	Canopy	Yes		3.9	1.7	Real-time Carrier
Yes	Canopy	Yes	SWD	1.4	0.9	Real-time Code
No		No		2.3	1.1	Real-time Carrier
Yes	Canopy	No		2.3	1.1	Real-time Carrier
Yes	Canopy	Yes	LWD	2.4	1.2	Real-time Carrier
Yes	< 2 meters	No		4.7	1.4	Real-time Carrier
Yes	Canopy	No		1.7	0.9	Real-time Carrier

Rcvr_Type	GPS_Date	GPS_Time	Feat_Name	Datafile	Unfilt_Pos	Filt_Pos
GeoXH 6000	03-Jan-19	11:26:25am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	03-Jan-19	11:35:04am	SH_Redd	2019 SH REDD SRVY WK	11	11
GeoXH 6000	10-Jan-19	11:25:00am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	10-Jan-19	11:35:17am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	10-Jan-19	11:41:18am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	10-Jan-19	12:01:16pm	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	24-Jan-19	09:54:44am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	24-Jan-19	09:58:26am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	24-Jan-19	10:03:37am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	24-Jan-19	02:01:15pm	SH_Redd	2019 SH REDD SRVY WK	12	12
GeoXH 6000	24-Jan-19	02:08:35pm	SH_Redd	2019 SH REDD SRVY WK	10	10

GeoXH 6000	28-Jan-19	10:01:55am	SH_Redd	SH REDD SRVY 2019 WK	10	10
GeoXH 6000	28-Jan-19	10:26:43am	SH_Redd	SH REDD SRVY 2019 WK	11	11
GeoXH 6000	07-Feb-19	09:35:58am	SH_Redd	2019 SH REDD SRVY WK	15	15
GeoXH 6000	21-Feb-19	09:58:11am	SH_Redd	2019 SH REDD SRVY WK	12	12
GeoXH 6000	21-Feb-19	10:08:55am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	21-Feb-19	10:22:05am	SH_Redd	2019 SH REDD SRVY WK	12	12
GeoXH 6000	03-Jan-19	09:50:42am	SH_Redd	2019 SH REDD SRVY WK	17	17
GeoXH 6000	03-Jan-19	09:59:15am	SH_Redd	2019 SH REDD SRVY WK	11	11
GeoXH 6000	03-Jan-19	10:07:06am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	10-Jan-19	10:29:20am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	10-Jan-19	10:38:11am	SH_Redd	2019 SH REDD SRVY WK	10	10

GeoXH 6000	10-Jan-19	10:42:26am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	10-Jan-19	10:54:00am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	10-Jan-19	11:00:45am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	17-Jan-19	11:24:42am	SH_Redd	2019 SH REDD SRVY WK	9	9
GeoXH 6000	24-Jan-19	01:28:22pm	SH_Redd	2019 SH REDD SRVY WK	11	11
GeoXH 6000	24-Jan-19	01:32:34pm	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	28-Jan-19	09:19:39am	SH_Redd	SH REDD SRVY 2019 WK	10	10
GeoXH 6000	21-Feb-19	10:37:59am	SH_Redd	2019 SH REDD SRVY WK	10	10
GeoXH 6000	21-Feb-19	10:41:37am	SH_Redd	2019 SH REDD SRVY WK	12	12
GeoXH 6000	21-Feb-19	10:47:15am	SH_Redd	2019 SH REDD SRVY WK	12	12
GeoXH 6000	28-Feb-19	01:45:06pm	SH_Redd	2019 SH REDD SRVY WK	15	15

Data_Dicti	GPS_Week	GNSS_Heigh	Vert_Prec	Horz_Prec	Std_Dev	Northing
SH Redd 2017	2034	12.478	0.2	0.2	0.013195	4375076.761
SH Redd 2017	2034	14.189	2.3	1.5	0.296651	4375063.387
SH Redd 2017	2035	12.262	0.2	0.2	0.008999	4375075.727
SH Redd 2017	2035	12.923	2.5	1.7	0.379378	4375061.428
SH Redd 2017	2035	10.863	2.6	1.8	0.286524	4375065.487
SH Redd 2017	2035	11.109	1.2	1.1	0.373467	4375029.117
SH Redd 2017	2037	11.189	0.2	0.2	0.011159	4375023.192
SH Redd 2017	2037	11.344	0.2	0.2	0.027077	4375021.699
SH Redd 2017	2037	11.35	0.2	0.2	0.049413	4375027.211
SH Redd 2017	2037	15.386	1.6	1.7	0.352935	4375060.501
SH Redd 2017	2037	12.347	0.2	0.2	0.073403	4375076.792

SH Redd 2017	2038	10.834	0.2	0.2	0.010748	4375028.41
SH Redd 2017	2038	11.866	2.2	1.4	0.205981	4375063.254
SH Redd 2017	2039	11.765	0.4	0.2	0.081722	4375075.426
SH Redd 2017	2041	11.14	0.2	0.2	0.124114	4375029.337
SH Redd 2017	2041	11.018	0.2	0.2	0.014341	4375046.422
SH Redd 2017	2041	11.951	0.2	0.2	0.021611	4375063.016
SH Redd 2017	2034	12.72	0.2	0.2	0.346903	4375102.153
SH Redd 2017	2034	12.939	0.2	0.2	0.026384	4375096.897
SH Redd 2017	2034	12.793	0.2	0.2	0.014237	4375106.121
SH Redd 2017	2035	12.663	0.2	0.2	0.021024	4375096.647
SH Redd 2017	2035	12.536	0.2	0.2	0.18459	4375097.307

SH Redd 2017	2035	12.756	0.7	0.2	0.034754	4375100.682
SH Redd 2017	2035	12.913	0.2	0.2	0.040122	4375108.249
SH Redd 2017	2035	12.939	0.2	0.2	0.017697	4375109.137
SH Redd 2017	2036	16.4	1.7	1	0.054367	4375096.378
SH Redd 2017	2037	13.483	1.9	1	0.2898	4375102.614
SH Redd 2017	2037	13.26	1.9	1.4	0.383047	4375107.472
SH Redd 2017	2038	12.616	0.3	0.3	0.034447	4375106.63
SH Redd 2017	2041	12.743	0.3	0.2	0.022642	4375096.439
SH Redd 2017	2041	12.839	0.2	0.2	0.017027	4375099.032
SH Redd 2017	2041	12.657	0.6	0.3	0.154456	4375102.15
SH Redd 2017	2042	17.815	1.7	1.4		4375086.582

Easting
623967.449
623901.72
623969.133
623901.136
623895.209
623762.454
623756.767
623753.727
623763.124
623906.371
623968.956

623764.958
623902.714
623947.58
623760.256
623865.871
623921.099
624041.762
624031.8
624055.622
624019.268
624027.754

624026.72
624080.534
624085.879
624013.55
624040.792
624077.876
624051.722
624025.449
624026.254
624042.772
623988.882

OVERHEAD COVER PIVOT TABLE

Row Labels	Count of Overhead_C
No	39
	39
Yes	32
< 2 meters	5
2-6 meters	9
Canopy	18
Grand Total	71

0.450704

INSTREAM COVER PIVOT TABLE

Row Labels	Count of Instream_C
No	56
	56
Yes	15
	1
LWD	3
SWD	11
Grand Total	71

0.211268

Count

	Species	Feature_ID	Date	Riffle_Nam	Riffle_Pos	Geomorphic
1	SH	001	03-Jan-19	Upper Hatchery Side Channel	Middle	Glide
2	SH	002	03-Jan-19	Upper Hatchery Side Channel	Middle	Glide
3	SH	003	03-Jan-19	Upper Hatchery Side Channel	Middle	Glide
4	SH	004	03-Jan-19	Lower Hatchery Side Channel	Tail	Riffle
5	SH	005	03-Jan-19	Lower Hatchery Side Channel	Head	Riffle
6	SH	006	03-Jan-19	Moe's Ditch	Head	Riffle
7	SH	007	03-Jan-19	Moe's Ditch	Middle	Glide
8	SH	008	03-Jan-19	Moe's Ditch	Middle	Glide
9	SH	009	03-Jan-19	Moe's Ditch	Middle	Glide
10	SH	1	10-Jan-19	Upper Hatchery Side Channel	Tail	Pool
11	SH	2	10-Jan-19	Upper Hatchery Side Channel	Tail	Pool
12	SH	3	10-Jan-19	Upper Hatchery Side Channel	Tail	Pool

13	SH	4	10-Jan-19	Upper Hatchery Side Channel	Tail	Pool
14	SH	5	10-Jan-19	Upper Hatchery Side Channel	Middle	Glide
15	SH	6	10-Jan-19	Lower Hatchery Side Channel	Tail	Glide
16	SH	7	10-Jan-19	Lower Hatchery Side Channel	Middle	Glide
17	SH	8	10-Jan-19	Lower Hatchery Side Channel	Middle	Riffle
18	SH	9	10-Jan-19	Lower Hatchery Side Channel	Tail	Pool
19	SH	10	10-Jan-19	Lower Moe's Side Channel	Tail	Glide
20	SH	11	10-Jan-19	Moe's Ditch	Middle	Glide
21	SH	12	10-Jan-19	Moe's Ditch	Middle	Glide
22	SH	1	11-Jan-19	Mathew's Riffle	Tail	Pool
23	SH	2	11-Jan-19	Mathew's Riffle	Tail	Pool
24	SH	3	11-Jan-19	Mathew's Riffle	Tail	Pool
25	SH	1	17-Jan-19	Upper Hatchery Side Channel	Middle	Glide

26	SH	2	17-Jan-19	Moe's Ditch	Tail	Pool
27	SH	3	17-Jan-19	Moe's Ditch	Tail	Pool
28	SH	4	17-Jan-19	Lower Moe's Side Channel	Middle	Glide
29	SH	5	17-Jan-19	Lower Moe's Side Channel	Middle	Glide
30	SH	1	24-Jan-19	Lower Hatchery Side Channel	Tail	Glide
31	SH	2	24-Jan-19	Lower Hatchery Side Channel	Tail	Glide
32	SH	3	24-Jan-19	Lower Hatchery Side Channel	Tail	Pool
33	SH	4	24-Jan-19	Lower Moe's Side Channel	Tail	Glide
34	SH	5	24-Jan-19	Lower Moe's Side Channel	Tail	Pool
35	SH		24-Jan-19	Lower Moe's Side Channel	Tail	Pool
36	SH	7	24-Jan-19	Lower Moe's Side Channel	Tail	Pool
37	SH	8	24-Jan-19	Moe's Ditch	Tail	Pool
38	SH	9	24-Jan-19	Moe's Ditch	Tail	Pool
39	SH	10	24-Jan-19	Moe's Ditch	Tail	Pool

40	SH	11	24-Jan-19	Moe's Ditch	Tail	Pool
41	SH	12	24-Jan-19	Moe's Ditch	Tail	Glide
42	SH	13	24-Jan-19	Upper Hatchery Side Channel	Middle	Glide
43	SH	14	24-Jan-19	Upper Hatchery Side Channel	Middle	Glide
44	SH	15	24-Jan-19	Moe's Ditch	Middle	Riffle
45	SH	16	24-Jan-19	Moe's Ditch	Head	Pool
46	SH	17	24-Jan-19	Moe's Ditch	Tail	Pool
47	SH	18	24-Jan-19	Lower Hatchery Side Channel	Middle	Glide
48	SH	19	24-Jan-19	Lower Hatchery Side Channel	Tail	Glide
49	SH	1	25-Jan-19	Steep Side Channel	Tail	Pool
50	SH	1	31-Jan-19	Steep Side Channel	Tail	Glide
51	SH	2	31-Jan-19	Steep Riffle	Tail	Pool
52	SH	3	31-Jan-19	Steep Side Channel	Tail	Glide

53	SH	1	07-Feb-19	Lower Hatchery Side Channel	Tail	Glide
54	SH	2	07-Feb-19	Moe's Ditch	Tail	Glide
55	SH	3	07-Feb-19	Moe's Ditch	Tail	Pool
56	SH	4	07-Feb-19	Moe's Ditch	Tail	Pool
57	SH	5	07-Feb-19	Moe's Ditch	Tail	Pool
58	SH	6	07-Feb-19	Table Mountain Riffle	Tail	Pool
59	SH	1	21-Feb-19	Lower Hatchery Side Channel	Tail	Pool
60	SH	2	21-Feb-19	Lower Hatchery Side Channel	Middle	Glide
61	SH	3	21-Feb-19	Lower Hatchery Side Channel	Tail	Glide
62	SH	4	21-Feb-19	Upper Hatchery Side Channel	Tail	Glide
63	SH	5	21-Feb-19	Upper Hatchery Side Channel	Tail	Glide
64	SH	6	21-Feb-19	Upper Hatchery Side Channel	Middle	Glide

65	SH	1	28-Feb-19	Upper Hatchery Side Channel	Tail	Glide
66	SH		28-Jan-19	Upper Hatchery Side Channel	Middle	Glide
67	SH		28-Jan-19	Upper Hatchery Riffle	Head	Glide
68	SH		28-Jan-19	Moe's Ditch	Middle	Glide
69	SH		28-Jan-19	Lower Moe's Side Channel	Middle	Glide
70	SH		28-Jan-19	Lower Hatchery Side Channel	Tail	Glide
71	SH		28-Jan-19	Lower Hatchery Side Channel	Tail	Glide

AVERAGE HSC

AVERAGE HSC

__of_Steel	Distance_t	Pot_Length	Pot_Width	Depth	Redd_Lengt
0	2	0.4	0.3	0.18	0.9
0	2.3	0.3	0.3	0.32	0.8
0	3	0.6	0.5	0.28	1.5
2	1.5	0.4	0.3	0.24	1
1	3	0.6	0.6	0.24	1.5
2	0.5	0.6	0.5	0.3	1.5
0	3.5	0.5	0.4	0.28	1.3
1	3	0.5	0.5	0.3	1.4
0	1.5	0.6	0.5	0.26	1.5
0	2	0.5	0.4	0.48	1.5
0	2.3	0.5	0.5	0.4	1.8
0	1.5	0.3	0.3	0.46	1

0	1	0.5	0.6	0.24	2
1	1.8	0.5	0.5	0	1.2
0	1.5	0.6	0.6	0.32	1.3
0	1	0.4	0.3	0.2	1
0	0.5	0.4	0.4	0.18	2.2
0	0.2	0.4	0.3	0.38	1.5
0	1.8	0.4	0.3	0.28	1.2
2	1.3	0.6	0.6	0.4	1.4
0	0.5	0.6	0.6	0.26	1.6
0	3.5	0.5	0.4	0.34	1
0	2	0.4	0.3	0.28	0.9
0	0.8	0.5	0.4	0.22	1
0	2.5	0.5	0.4	0.32	1.9

1	0.5	0.4	0.4	0.42	1
0	2.5	0.4	0.3	0.42	1.1
2	3	0.6	0.5	0.34	1.2
0	0.5	0.4	0.3	0.24	1.5
0	4.5	0.4	0.5	0.14	1.3
0	5	0.6	0.6	0.12	1.3
0	3	0.4	0.4	0.34	1
1	1.2	0.5	0.4	0.26	1.5
3	2.5	0.4	0.4	0.36	1.8
2	3.5	0.5	0.4	0.44	1.1
1	2	0.4	0.3	0.38	1.2
2	2	0.3	0.3	0.3	1.1
0	2	0.4	0.3	0.28	0.9
2	2	0.6	0.5	0.54	1.4

1	2	0.5	0.4	0.42	1.3
0	0.5	0.4	0.4	0.22	1.2
0	2.5	0.5	0.3	0.2	1
0	2	0.4	0.3	0.22	1.1
3	2.5	0.5	0.5	0.26	1.3
0	0.5	0.6	0.4	0.34	1.4
2	1.5	0.4	0.4	0.3	1
0	1	0.4	0.4	0.2	2
0	2.5	0.5	0.5	0.26	1.7
0	1.2	0.5	0.4	0.38	1.3
0	1.1	0.3	0.3	0.24	1.5
0	20	0.4	0.3	0.5	1.3
0	0.5	0.4	0.4	0.32	1.7

0	2.5	0.5	0.4	0.22	1.1
0	6	0.3	0.3	0.24	1
2	2	0.3	0.3	0.4	1.5
2	2	0.5	0.4	0.38	1.7
3	2.5	0.5	0.4	0.4	1.3
0	2	0.4	0.4	0.38	1.2
0	1	0.4	0.4	0.24	1.1
0	1	0.3	0.3	0.25	0.9
0	1.1	0.4	0.4	0.16	1.1
2	1.1	0.4	0.3	0.3	1.2
0	3	0.3	0.3	0.32	1
4	3.5	0.4	0.3	0.38	1.1

0	1.2	0.4	0.3	0.26	1.1
0	6	0.4	0.3	0.22	0.9
2	2.5	0.4	0.4	0.2	0.8
1	2	0.5	0.4	0.3	1
1	1.2	0.6	0.4	0.32	1.5
0	1.5	0.4	0.3	0.32	1.4
0	2	0.7	0.5	0.26	1.8

Distance_t	Pot_Length	Pot_Width	Depth	Redd_Lengt
2.3	0.5		0.4	0.3
2.261971831	0.454929577		0.397183099	0.297887324

Parameter	Mean	Range
Distance to Bank (m)	2.26	0.20-20
Pot Length (m)	0.45	0.30-0.70
Pot Width (m)	0.40	0.30-0.70
Depth (m)	0.30	0.30-0.70
Redd Length (m)	1.29	1.30-1.70
Redd Width (m)	0.75	0.30-0.70
Velocity		

Redd_Width	Velocity__	_silt_m	_sand	_gravel	_pebble	_cobble
0.4	0	0	15	20	60	5
0.5	0	0	10	20	60	10
0.6	0	0	20	30	40	10
0.5	0	0	5	60	35	0
1	0	0	10	75	15	0
0.7	0	0	5	40	40	15
0.6	0	0	5	25	30	40
0.8	0	0	5	30	50	15
1	0	0	5	35	35	25
1	0	0	10	25	45	20
1.1	0	0	10	30	40	20
0.4	0	0	10	20	60	10

1.8	0	0	10	40	25	25
0.8	0	0	10	35	40	15
0.8	0	0	10	20	30	40
0.6	0	0	5	25	35	35
1	0	0	5	25	50	20
1	0	0	10	20	40	30
0.5	0	0	5	25	50	20
1.5	0	0	5	15	40	40
0.9	0	0	5	25	30	30
0.7	0	0	5	35	20	35
0.5	0	0	10	20	40	30
0.7	0	0	15	30	40	15
1	0	0	5	30	50	15

0.7	0	0	15	35	35	15
0.6	0	0	0	20	40	30
0.8	0	0	5	20	40	35
0.7	0	0	15	25	55	5
0.8	0	0	10	25	50	15
0.8	0	0	10	15	60	15
0.8	0	0	15	30	40	15
0.8	0	0	5	20	60	15
0.7	0	0	10	30	40	20
0.6	0	0	5	30	35	30
0.6	0	0	10	20	40	30
0.6	0	0	15	45	20	20
0.5	0	0	5	25	35	35
0.8	0	0	5	30	50	15

0.7	0	0	5	10	35	50
0.7	0	0	5	15	40	40
0.5	0	0	10	25	50	15
0.8	0	0	5	25	50	20
0.9	0	0	5	35	45	15
0.8	0	0	5	15	60	20
0.6	0	0	5	10	35	50
0.9	0	0	5	20	50	25
1	0	0	10	20	60	10
0.6	0	0	5	15	60	20
0.5	0	0	5	20	60	15
0.8	0	0	10	25	35	30
0.7	0	0	5	25	60	10

0.7	0	0	0	15	70	15
0.5	0	0	5	15	60	20
0.7	0	0	40	30	20	10
0.7	0	0	10	20	50	20
0.8	0	0	5	20	60	15
0.6	0	0	5	20	55	20
0.8	0	0	5	25	50	20
0.6	0	0	10	40	50	0
0.7	0	0	5	15	60	20
0.7	0	0	5	25	40	30
0.4	0	0	5	20	60	15
0.6	0	0	10	25	35	30

0.8	0	0	5	20	70	5
0.5	0	0	15	15	50	20
0.6	0	0	15	15	45	25
0.8	0	0	5	20	50	25
0.8	0	0	5	10	40	45
0.9	0					
1	0					

Redd_Width

0.7

0.0

0.745070423

silt

sand

gravel

pebble

cobble

boulder

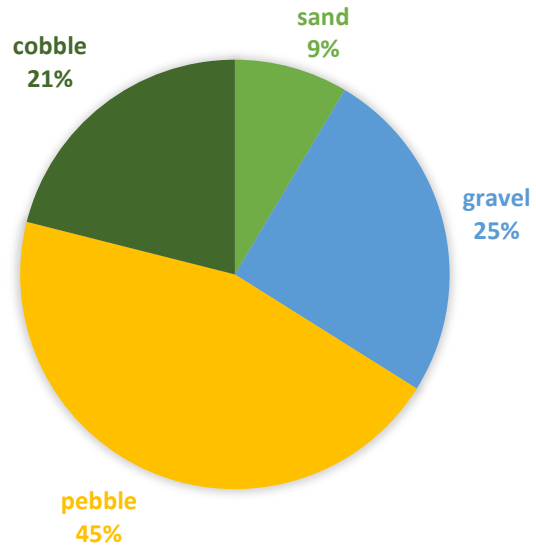
8

25.28169014

44.85915493

20.98591549

0.281690141



__boulder	Overhead_C	Distance_a	Instream_C	Instream_2	Max_PDOP	Max_HDOP
0	Yes	Canopy	No		2.5	1.3
0	No		No		2.7	1
0	No		No		2.6	1
0	Yes	< 2 meters	Yes	LWD	4.4	2.1
0	Yes	Canopy	Yes	SWD	1.5	0.8
0	Yes	< 2 meters	Yes	SWD	2	1.3
0	No		No		1.5	0.8
0	No		No		2.1	1.6
0	No		No		1.8	1.2
0	Yes	Canopy	No		3.5	1.5
0	Yes	Canopy	Yes	SWD	3.1	1.7
0	Yes	Canopy	Yes	LWD	7.4	2.1

	0 Yes	Canopy	No		4.4	2
	0 Yes	Canopy	No		4.7	3.2
	0 No		No		3.8	2.1
	0 Yes	2-6 meters	No		1.9	1.1
	0 Yes	Canopy	No		1.7	0.9
	0 Yes	Canopy	No		2.9	1.8
	0 No		No		2	1.1
	0 No		No		2.5	1.3
	10 No		Yes	SWD	1.6	0.9
	0 No		No		1.9	0.9
	0 No		No		1.4	0.7
	0 No		No		1.4	0.8
	0 Yes	Canopy	No		4.9	2.9

0	Yes	2-6 meters	Yes	SWD	2.2	1.5
10	No		No		3.1	1.6
0	No		No		1.5	0.8
0	Yes	2-6 meters	No		1.9	1.2
0	No		No		2.4	1.2
0	No		No		2.3	1.2
0	No		Yes	SWD	2.2	1.1
0	No		No		2.7	1.3
0	No		No		1.8	1
0	No		No		2.1	1
0	No		No		1.9	1
0	No		No		2.2	1.2
0	No		No		2.2	1.1
0	No		No		2.4	1.2

0	No		No		1.9	1
0	Yes	2-6 meters	Yes	SWD	1.9	1.1
0	Yes	Canopy	Yes	SWD	3.9	1.7
0	Yes	Canopy	Yes	SWD	1.4	0.9
0	No		No		1.6	0.9
0	Yes	2-6 meters	No		2.1	1.3
0	No		No		1.8	1
0	Yes	2-6 meters	No		16.3	9.4
0	Yes	< 2 meters	No		12.3	5.4
0	No		No		2.2	0.9
0	No		No		3.2	1.3
0	No		No		1.7	1
0	Yes	2-6 meters	No		2.5	1.9

	0 Yes	Canopy	No		4.6	2.5
	0 No		No		1.8	1.1
	0 Yes	Canopy	No		4.4	1.7
	0 Yes	< 2 meters	Yes	SWD	5.4	2
	0 No		No		2.8	1.4
	0 No		No		2.6	1.2
	0 Yes	Canopy	No		1.7	0.9
	0 No		No		2	1
	0 Yes	2-6 meters	No		2.7	1.3
	0 Yes	Canopy	No		2.3	1.1
	0 Yes	Canopy	Yes	LWD	2.4	1.2
	0 Yes	< 2 meters	No		4.7	1.4

	0 Yes	Canopy	No		1.7	0.9
	0 No		No		2.3	1.1
	0 No		Yes	SWD	2.1	1
	0 No		No		2.2	1.1
	0 No		No		1.7	1.1
	0 No		No		2.2	1.3
	0 Yes	2-6 meters	Yes	SWD	2	1.1

1

3

1

1

Corr_Type	Rcvr_Type	GPS_Date	GPS_Time	Feat_Name	Datafile	Unfilt_Pos
Real-time Carrier	GeoXH 6000	03-Jan-19	09:50:42am	SH_Redd	2019 SH REDD SRVY WK	17
Real-time Carrier	GeoXH 6000	03-Jan-19	09:59:15am	SH_Redd	2019 SH REDD SRVY WK	11
Real-time Carrier	GeoXH 6000	03-Jan-19	10:07:06am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	03-Jan-19	11:26:25am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Code	GeoXH 6000	03-Jan-19	11:35:04am	SH_Redd	2019 SH REDD SRVY WK	11
Real-time Carrier	GeoXH 6000	03-Jan-19	11:56:19am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	03-Jan-19	12:03:52pm	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	03-Jan-19	12:10:16pm	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	03-Jan-19	12:19:00pm	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	10-Jan-19	10:29:20am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	10-Jan-19	10:38:11am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	10-Jan-19	10:42:26am	SH_Redd	2019 SH REDD SRVY WK	10

Real-time Carrier	GeoXH 6000	10-Jan-19	10:54:00am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Code	GeoXH 6000	10-Jan-19	11:00:45am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	10-Jan-19	11:25:00am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Code	GeoXH 6000	10-Jan-19	11:35:17am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Code	GeoXH 6000	10-Jan-19	11:41:18am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	10-Jan-19	12:01:16pm	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	10-Jan-19	12:09:01pm	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	10-Jan-19	12:26:44pm	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	10-Jan-19	12:47:28pm	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	11-Jan-19	11:01:49am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	11-Jan-19	11:07:56am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	11-Jan-19	11:16:18am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	17-Jan-19	11:24:42am	SH_Redd	2019 SH REDD SRVY WK	9

Real-time Carrier	GeoXH 6000	17-Jan-19	12:01:59pm	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	17-Jan-19	12:07:18pm	SH_Redd	2019 SH REDD SRVY WK	11
Real-time Code	GeoXH 6000	17-Jan-19	12:16:29pm	SH_Redd	2019 SH REDD SRVY WK	11
Real-time Carrier	GeoXH 6000	17-Jan-19	12:25:44pm	SH_Redd	2019 SH REDD SRVY WK	11
Real-time Carrier	GeoXH 6000	24-Jan-19	09:54:44am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	24-Jan-19	09:58:26am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	24-Jan-19	10:03:37am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	24-Jan-19	10:23:03am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	24-Jan-19	10:31:26am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	24-Jan-19	10:38:36am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	24-Jan-19	10:44:58am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	24-Jan-19	10:51:12am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	24-Jan-19	11:00:36am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	24-Jan-19	11:04:11am	SH_Redd	2019 SH REDD SRVY WK	10

Real-time Carrier	GeoXH 6000	24-Jan-19	11:09:28am	SH_Redd	2019 SH REDD SRVY WK	11
Real-time Carrier	GeoXH 6000	24-Jan-19	11:15:29am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	24-Jan-19	01:28:22pm	SH_Redd	2019 SH REDD SRVY WK	11
Real-time Code	GeoXH 6000	24-Jan-19	01:32:34pm	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	24-Jan-19	01:41:57pm	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	24-Jan-19	01:46:41pm	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	24-Jan-19	01:54:07pm	SH_Redd	2019 SH REDD SRVY WK	11
Real-time Carrier	GeoXH 6000	24-Jan-19	02:01:15pm	SH_Redd	2019 SH REDD SRVY WK	12
Real-time Carrier	GeoXH 6000	24-Jan-19	02:08:35pm	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	25-Jan-19	09:54:00am	SH_Redd	2019 SH REDD SRVY WK	10
L1L2 Postprocessed Carrier Float	GeoXH 6000	31-Jan-19	12:21:56pm	SH_Redd	2019 SH REDD SRVY WK	14
L1L2 Postprocessed Carrier Float	GeoXH 6000	31-Jan-19	12:37:07pm	SH_Redd	2019 SH REDD SRVY WK	15
L1L2 Postprocessed Carrier Float	GeoXH 6000	31-Jan-19	12:50:24pm	SH_Redd	2019 SH REDD SRVY WK	13

L1L2 Postprocesse d Carrier Float	GeoXH 6000	07-Feb-19	09:35:58am	SH_Redd	2019 SH REDD SRVY WK	15
L1L2 Postprocesse d Carrier Float	GeoXH 6000	07-Feb-19	10:04:43am	SH_Redd	2019 SH REDD SRVY WK	10
L1L2 Postprocesse d Carrier Float	GeoXH 6000	07-Feb-19	10:11:54am	SH_Redd	2019 SH REDD SRVY WK	15
L1L2 Postprocesse d Carrier Float	GeoXH 6000	07-Feb-19	10:17:46am	SH_Redd	2019 SH REDD SRVY WK	14
L1L2 Postprocesse d Carrier Float	GeoXH 6000	07-Feb-19	10:24:49am	SH_Redd	2019 SH REDD SRVY WK	10
Postprocesse d Code	GeoXH 6000	07-Feb-19	01:38:03pm	SH_Redd	2019 SH REDD SRVY WK	13
Real-time Code	GeoXH 6000	21-Feb-19	09:58:11am	SH_Redd	2019 SH REDD SRVY WK	12
Real-time Carrier	GeoXH 6000	21-Feb-19	10:08:55am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	21-Feb-19	10:22:05am	SH_Redd	2019 SH REDD SRVY WK	12
Real-time Carrier	GeoXH 6000	21-Feb-19	10:37:59am	SH_Redd	2019 SH REDD SRVY WK	10
Real-time Carrier	GeoXH 6000	21-Feb-19	10:41:37am	SH_Redd	2019 SH REDD SRVY WK	12
Real-time Carrier	GeoXH 6000	21-Feb-19	10:47:15am	SH_Redd	2019 SH REDD SRVY WK	12

Real-time Carrier	GeoXH 6000	28-Feb-19	01:45:06pm	SH_Redd	2019 SH REDD SRVY WK	15
Real-time Carrier	GeoXH 6000	28-Jan-19	09:19:39am	SH_Redd	SH REDD SRVY 2019 WK	10
Real-time Carrier	GeoXH 6000	28-Jan-19	09:25:01am	SH_Redd	SH REDD SRVY 2019 WK	10
Real-time Carrier	GeoXH 6000	28-Jan-19	09:40:21am	SH_Redd	SH REDD SRVY 2019 WK	10
Real-time Carrier	GeoXH 6000	28-Jan-19	09:52:13am	SH_Redd	SH REDD SRVY 2019 WK	10
Real-time Carrier	GeoXH 6000	28-Jan-19	10:01:55am	SH_Redd	SH REDD SRVY 2019 WK	10
Real-time Code	GeoXH 6000	28-Jan-19	10:26:43am	SH_Redd	SH REDD SRVY 2019 WK	11

Filt_Pos	Data_Dicti	GPS_Week	GNSS_Heigh	Vert_Prec	Horz_Prec	Std_Dev
17	SH Redd 2017	2034	12.72	0.2	0.2	0.346903
11	SH Redd 2017	2034	12.939	0.2	0.2	0.026384
10	SH Redd 2017	2034	12.793	0.2	0.2	0.014237
10	SH Redd 2017	2034	12.478	0.2	0.2	0.013195
11	SH Redd 2017	2034	14.189	2.3	1.5	0.296651
10	SH Redd 2017	2034	11.52	0.2	0.2	0.026303
10	SH Redd 2017	2034	11.771	0.2	0.2	0.012709
10	SH Redd 2017	2034	11.762	0.2	0.2	0.022474
10	SH Redd 2017	2034	12.025	0.2	0.2	0.016546
10	SH Redd 2017	2035	12.663	0.2	0.2	0.021024
10	SH Redd 2017	2035	12.536	0.2	0.2	0.18459
10	SH Redd 2017	2035	12.756	0.7	0.2	0.034754

10	SH Redd 2017	2035	12.913	0.2	0.2	0.040122
10	SH Redd 2017	2035	12.939	0.2	0.2	0.017697
10	SH Redd 2017	2035	12.262	0.2	0.2	0.008999
10	SH Redd 2017	2035	12.923	2.5	1.7	0.379378
10	SH Redd 2017	2035	10.863	2.6	1.8	0.286524
10	SH Redd 2017	2035	11.109	1.2	1.1	0.373467
10	SH Redd 2017	2035	11.295	0.2	0.2	0.022999
10	SH Redd 2017	2035	11.548	0.2	0.2	0.013889
10	SH Redd 2017	2035	11.867	0.2	0.2	0.035208
10	SH Redd 2017	2035	9.152	0.2	0.2	0.023989
10	SH Redd 2017	2035	9.301	0.2	0.2	0.023635
10	SH Redd 2017	2035	9.223	0.2	0.2	0.013103
9	SH Redd 2017	2036	16.4	1.7	1	0.054367

10	SH Redd 2017	2036	11.343	0.2	0.2	0.024834
11	SH Redd 2017	2036	11.265	0.2	0.2	0.008538
11	SH Redd 2017	2036	15.045	1.9	1.2	0.411048
11	SH Redd 2017	2036	11.29	0.2	0.2	0.029401
10	SH Redd 2017	2037	11.189	0.2	0.2	0.011159
10	SH Redd 2017	2037	11.344	0.2	0.2	0.027077
10	SH Redd 2017	2037	11.35	0.2	0.2	0.049413
10	SH Redd 2017	2037	11.471	0.2	0.2	0.038881
10	SH Redd 2017	2037	11.432	0.2	0.2	0.016846
10	SH Redd 2017	2037	11.399	0.2	0.2	0.02394
10	SH Redd 2017	2037	11.635	0.2	0.2	0.01795
10	SH Redd 2017	2037	11.547	0.2	0.2	0.042093
10	SH Redd 2017	2037	11.777	0.2	0.2	0.022529
10	SH Redd 2017	2037	11.494	0.2	0.2	0.013515

11	SH Redd 2017	2037	11.589	0.2	0.2	0.120082
10	SH Redd 2017	2037	11.755	0.2	0.2	0.029948
11	SH Redd 2017	2037	13.483	1.9	1	0.2898
10	SH Redd 2017	2037	13.26	1.9	1.4	0.383047
10	SH Redd 2017	2037	12.058	0.2	0.2	0.009862
10	SH Redd 2017	2037	11.909	0.2	0.2	0.023991
11	SH Redd 2017	2037	11.864	0.2	0.2	0.011464
12	SH Redd 2017	2037	15.386	1.6	1.7	0.352935
10	SH Redd 2017	2037	12.347	0.2	0.2	0.073403
10	SH Redd 2017	2037	5.677	0.2	0.2	0.015073
14	SH Redd 2017	2038	5.101	0.2	0.2	0.064683
15	SH Redd 2017	2038	6.19	0.2	0.2	0.031561
13	SH Redd 2017	2038	5.025	0.2	0.2	0.04754

15	SH Redd 2017	2039	11.765	0.4	0.2	0.081722
10	SH Redd 2017	2039	11.112	0.2	0.2	0.009607
15	SH Redd 2017	2039	11.248	0.3	0.2	0.044325
14	SH Redd 2017	2039	11.118	0.2	0.2	0.047221
10	SH Redd 2017	2039	11.215	0.2	0.2	0.02021
13	SH Redd 2017	2039	12.983	0.6	0.5	0.526989
12	SH Redd 2017	2041	11.14	0.2	0.2	0.124114
10	SH Redd 2017	2041	11.018	0.2	0.2	0.014341
12	SH Redd 2017	2041	11.951	0.2	0.2	0.021611
10	SH Redd 2017	2041	12.743	0.3	0.2	0.022642
12	SH Redd 2017	2041	12.839	0.2	0.2	0.017027
12	SH Redd 2017	2041	12.657	0.6	0.3	0.154456

15	SH Redd 2017	2042	17.815	1.7	1.4	
10	SH Redd 2017	2038	12.616	0.3	0.3	0.034447
10	SH Redd 2017	2038	12.596	0.2	0.2	0.039396
10	SH Redd 2017	2038	11.383	0.2	0.2	0.015085
10	SH Redd 2017	2038	11.269	0.2	0.2	0.017601
10	SH Redd 2017	2038	10.834	0.2	0.2	0.010748
11	SH Redd 2017	2038	11.866	2.2	1.4	0.205981

Northing	Easting
4375102.153	624041.762
4375096.897	624031.8
4375106.121	624055.622
4375076.761	623967.449
4375063.387	623901.72
4375013.777	623836.117
4375036.384	623889.09
4375039.362	623900.537
4375047.264	623997.805
4375096.647	624019.268
4375097.307	624027.754
4375100.682	624026.72

4375108.249	624080.534
4375109.137	624085.879
4375075.727	623969.133
4375061.428	623901.136
4375065.487	623895.209
4375029.117	623762.454
4375002.63	623818.264
4375039.967	623887.872
4375044.906	623972.344
4372478.468	622186.97
4372472.992	622186.186
4372471.886	622187.331
4375096.378	624013.55

4375036.893	623874.339
4375031.179	623861.227
4375024.186	623839.404
4375010.263	623824.765
4375023.192	623756.767
4375021.699	623753.727
4375027.211	623763.124
4375005.012	623827.824
4375013.615	623834.066
4375026.333	623842.524
4375029.514	623861.436
4375035.055	623889.734
4375035.977	623899.034
4375041.034	623901.252

4375041.622	623909.623
4375043.738	623926.268
4375102.614	624040.792
4375107.472	624077.876
4375045.676	623988.87
4375045.364	623967.783
4375038.743	623929.853
4375060.501	623906.371
4375076.792	623968.956
4369083.485	620160.247
4369051.453	620144.652
4369125.157	620074.2
4369054.295	620145.76

4375075.426	623947.58
4375034.669	623870.638
4375031.251	623876.678
4375041.105	623885.415
4375040.53	623899.285
4375252.786	624557.916
4375029.337	623760.256
4375046.422	623865.871
4375063.016	623921.099
4375096.439	624025.449
4375099.032	624026.254
4375102.15	624042.772

4375086.582	623988.882
4375106.63	624051.722
4375108.267	624078.956
4375036.441	623906.16
4375025.725	623836.343
4375028.41	623764.958
4375063.254	623902.714

Row Labels	Count of Riffle_Nam
Lower Hatchery Side Channel	17
Lower Moe's Side Channel	8
Mathew's Riffle	3
Moe's Ditch	21
Steep Riffle	1
Steep Side Channel	3
Table Mountain Riffle	1
Upper Hatchery Riffle	1
Upper Hatchery Side Channel	16
Grand Total	71

Riffle Name	Count
Moe's Ditch	21
Lower Hatchery Side Channel	17
Upper Hatchery Side Channel	16
Lower Moe's Side Channel	8
Mathew's Riffle	3
Steep Side Channel	3
Steep Riffle	1
Table Mountain Riffle	1
Upper Hatchery Riffle	1
Grand Total	71

Date	Riffle Name	Riffle Position	Geomorphic Unit	# of Steelhead	Distance to Bank (m)	Pot Length (m)
3-Jan	Lower Hatchery SC	Tail	Riffle	2	1.5	0.4
3-Jan	Lower Hatchery SC	Head	Riffle	1	3	0.6
3-Jan	Moe's SC	Head	Riffle	2	0.5	0.6
3-Jan	Moe's SC	Middle	Glide	0	3.5	0.5
3-Jan	Moe's SC	Middle	Glide	1	3	0.5
3-Jan	Moe's SC	Middle	Glide	0	1.5	0.6
3-Jan	Upper Hatchery SC	Middle	Glide	0	2	0.4
3-Jan	Upper Hatchery SC	Middle	Glide	0	2.3	0.3
3-Jan	Upper Hatchery SC	Middle	Glide	0	3	0.6
10-Jan	Lower Hatchery SC	Tail	Glide	0	1.5	0.6
10-Jan	Lower Hatchery SC	Middle	Glide	0	1	0.4
10-Jan	Lower Hatchery SC	Middle	Riffle	0	0.5	0.4
10-Jan	Lower Hatchery SC	Tail	Pool	0	0.2	0.4
10-Jan	Lower Moe's SC	Tail	Glide	0	1.8	0.4
10-Jan	Moe's SC	Middle	Glide	2	1.3	0.6
10-Jan	Moe's SC	Middle	Glide	0	0.5	0.6
10-Jan	Upper Hatchery SC	Tail	Pool	0	2	0.5
10-Jan	Upper Hatchery SC	Tail	Pool	0	2.3	0.5
10-Jan	Upper Hatchery SC	Tail	Pool	0	1.5	0.3
10-Jan	Upper Hatchery SC	Tail	Pool	0	1	0.5
10-Jan	Upper Hatchery SC	Middle	Glide	1	1.8	0.5
11-Jan	Mathew's Riffle	Tail	Pool	0	3.5	0.5
11-Jan	Mathew's Riffle	Tail	Pool	0	2	0.4
11-Jan	Mathew's Riffle	Tail	Pool	0	0.8	0.5
17-Jan	Lower Moe's SC	Middle	Glide	2	3	0.6

17-Jan	Lower Moe's SC	Middle	Glide	0	0.5	0.4
17-Jan	Moe's SC	Tail	Pool	1	0.5	0.4
17-Jan	Moe's SC	Tail	Pool	0	2.5	0.4
17-Jan	Upper Hatchery SC	Middle	Glide	0	2.5	0.5
24-Jan	Lower Hatchery SC	Tail	Glide	0	4.5	0.4
24-Jan	Lower Hatchery SC	Tail	Glide	0	5	0.6
24-Jan	Lower Hatchery SC	Tail	Pool	0	3	0.4
24-Jan	Lower Hatchery SC	Middle	Glide	0	1	0.4
24-Jan	Lower Hatchery SC	Tail	Glide	0	2.5	0.5
24-Jan	Lower Moe's SC	Tail	Glide	1	1.2	0.5
24-Jan	Lower Moe's SC	Tail	Pool	3	2.5	0.4
24-Jan	Lower Moe's SC	Tail	Pool	2	3.5	0.5
24-Jan	Lower Moe's SC	Tail	Pool	1	2	0.4
24-Jan	Moe's SC	Tail	Pool	2	2	0.3
24-Jan	Moe's SC	Tail	Pool	0	2	0.4
24-Jan	Moe's SC	Tail	Pool	2	2	0.6
24-Jan	Moe's SC	Tail	Pool	1	2	0.5
24-Jan	Moe's SC	Tail	Glide	0	0.5	0.4
24-Jan	Moe's SC	Middle	Riffle	3	2.5	0.5
24-Jan	Moe's SC	Head	Pool	0	0.5	0.6
24-Jan	Moe's SC	Tail	Pool	2	1.5	0.4
24-Jan	Upper Hatchery SC	Middle	Glide	0	2.5	0.5
24-Jan	Upper Hatchery SC	Middle	Glide	0	2	0.4
25-Jan	Steep SC	Tail	Pool	0	1.2	0.5
28-Jan	Lower Hatchery SC	Tail	Glide	0	1.5	0.4
28-Jan	Lower Hatchery SC	Tail	Glide	0	2	0.7
28-Jan	Lower Moe's SC	Middle	Glide	1	1.2	0.6
28-Jan	Moe's SC	Middle	Glide	1	2	0.5
28-Jan	Upper Hatchery Riffle	Head	Glide	2	2.5	0.4

28-Jan	Upper Hatchery SC	Middle	Glide	0	6	0.4
31-Jan	Steep Riffle	Tail	Pool	0	20	0.4
31-Jan	Steep SC	Tail	Glide	0	1.1	0.3
31-Jan	Steep SC	Tail	Glide	0	0.5	0.4
7-Feb	Lower Hatchery SC	Tail	Glide	0	2.5	0.5
7-Feb	Moe's SC	Tail	Glide	0	6	0.3
7-Feb	Moe's SC	Tail	Pool	2	2	0.3
7-Feb	Moe's SC	Tail	Pool	2	2	0.5
7-Feb	Moe's SC	Tail	Pool	3	2.5	0.5
7-Feb	Table Mountain Riffle	Tail	Pool	0	2	0.4
21-Feb	Lower Hatchery SC	Tail	Pool	0	1	0.4
21-Feb	Lower Hatchery SC	Middle	Glide	0	1	0.3
21-Feb	Lower Hatchery SC	Tail	Glide	0	1.1	0.4
21-Feb	Upper Hatchery SC	Tail	Glide	2	1.1	0.4
21-Feb	Upper Hatchery SC	Tail	Glide	0	3	0.3
21-Feb	Upper Hatchery SC	Middle	Glide	4	3.5	0.4
28-Feb	Upper Hatchery SC	Tail	Glide	0	1.2	0.4

Pot Width (m)	Depth (m)	Redd Length (m)	Redd Width (m)	Overhead Cover	Instream Cover
0.3	0.24	1	0.5	Yes	Yes
0.6	0.24	1.5	1	Yes	Yes
0.5	0.3	1.5	0.7	Yes	Yes
0.4	0.28	1.3	0.6	No	No
0.5	0.3	1.4	0.8	No	No
0.5	0.26	1.5	1	No	No
0.3	0.18	0.9	0.4	Yes	No
0.3	0.32	0.8	0.5	No	No
0.5	0.28	1.5	0.6	No	No
0.6	0.32	1.3	0.8	No	No
0.3	0.2	1	0.6	Yes	No
0.4	0.18	2.2	1	Yes	No
0.3	0.38	1.5	1	Yes	No
0.3	0.28	1.2	0.5	No	No
0.6	0.4	1.4	1.5	No	No
0.6	0.26	1.6	0.9	No	Yes
0.4	0.48	1.5	1	Yes	No
0.5	0.4	1.8	1.1	Yes	Yes
0.3	0.46	1	0.4	Yes	Yes
0.6	0.24	2	1.8	Yes	No
0.5	0	1.2	0.8	Yes	No
0.4	0.34	1	0.7	No	No
0.3	0.28	0.9	0.5	No	No
0.4	0.22	1	0.7	No	No
0.5	0.34	1.2	0.8	No	No

0.3	0.24	1.5	0.7	Yes	No
0.4	0.42	1	0.7	Yes	Yes
0.3	0.42	1.1	0.6	No	No
0.4	0.32	1.9	1	Yes	No
0.5	0.14	1.3	0.8	No	No
0.6	0.12	1.3	0.8	No	No
0.4	0.34	1	0.8	No	Yes
0.4	0.2	2	0.9	Yes	No
0.5	0.26	1.7	1	Yes	No
0.4	0.26	1.5	0.8	No	No
0.4	0.36	1.8	0.7	No	No
0.4	0.44	1.1	0.6	No	No
0.3	0.38	1.2	0.6	No	No
0.3	0.3	1.1	0.6	No	No
0.3	0.28	0.9	0.5	No	No
0.5	0.54	1.4	0.8	No	No
0.4	0.42	1.3	0.7	No	No
0.4	0.22	1.2	0.7	Yes	Yes
0.5	0.26	1.3	0.9	No	No
0.4	0.34	1.4	0.8	Yes	No
0.4	0.3	1	0.6	No	No
0.3	0.2	1	0.5	Yes	Yes
0.3	0.22	1.1	0.8	Yes	Yes
0.4	0.38	1.3	0.6	No	No
0.3	0.32	1.4	0.9	No	No
0.5	0.26	1.8	1	Yes	Yes
0.4	0.32	1.5	0.8	No	No
0.4	0.3	1	0.8	No	No
0.4	0.2	0.8	0.6	No	Yes

0.3	0.22	0.9	0.5	No	No
0.3	0.5	1.3	0.8	No	No
0.3	0.24	1.5	0.5	No	No
0.4	0.32	1.7	0.7	Yes	No
0.4	0.22	1.1	0.7	Yes	No
0.3	0.24	1	0.5	No	No
0.3	0.4	1.5	0.7	Yes	No
0.4	0.38	1.7	0.7	Yes	Yes
0.4	0.4	1.3	0.8	No	No
0.4	0.38	1.2	0.6	No	No
0.4	0.24	1.1	0.8	Yes	No
0.3	0.25	0.9	0.6	No	No
0.4	0.16	1.1	0.7	Yes	No
0.3	0.3	1.2	0.7	Yes	No
0.3	0.32	1	0.4	Yes	Yes
0.3	0.38	1.1	0.6	Yes	No
0.3	0.26	1.1	0.8	Yes	No

Date	Survey Wk	Crew	Weather	ID #	Redd Type	Riffle Name
1/8/2020	1-1	JC, LL, FV	CLD	1	S	Hatchery side channel
1/8/2020	1-1	JC, LL, FV	CLD	2	S	Hatchery side channel
1/8/2020	1-1	JC, LL, FV	CLD	3	S	Top of Auditorium
1/8/2020	1-1	JC, LL, FV	CLD	4	S	Hatchery side channel
1/8/2020	1-1	JC, LL, FV	CLD	5	S	Moe's Sidechannel
1/8/2020	1-1	JC, LL, FV	CLD	7	S	Table Mountain
1/8/2020	1-1	JC, LL, FV	CLD	8	S	Top of Auditorium
1/9/2020	1-2	JC, LL, FV	CLD	1	S	Lower Auditorium
1/9/2020	1-2	JC, LL, FV	CLD	2	S	Lower Auditorium
1/9/2020	1-2	JC, LL, FV	CLD	3	S	Lower Auditorium
1/9/2020	1-2	JC, LL, FV	CLD	4	S	Middle Auditorium
1/9/2020	1-2	JC, LL, FV	CLD	5	S	Middle Auditorium
1/9/2020	1-2	JC, LL, FV	CLD	6	S	Middle Auditorium
1/9/2020	1-2	JC, LL, FV	CLD	7	S	Hatchery side channel
1/9/2020	1-2	JC, LL, FV	CLD	8	S	Moe's Sidechannel
1/9/2020	1-2	JC, LL, FV	CLD	9	S	Moe's Sidechannel
1/9/2020	1-2	JC, LL, FV	CLD	10	S	Moe's Sidechannel
1/9/2020	1-2	JC, LL, FV	CLD	11	S	Lower Auditorium
1/15/2020	2-1	MB, LL	CLR	1	S	Hatchery side channel
1/15/2020	2-1	MB, LL	CLR	2	S	Hatchery side channel
1/15/2020	2-1	MB, LL	CLR	3	S	Hatchery side channel
1/15/2020	2-1	MB, LL	CLR	4	S	Hatchery side channel
1/15/2020	2-1	MB, LL	CLR	5	S	Hatchery side channel
1/15/2020	2-1	MB, LL	CLR	6	S	Moe's Sidechannel
1/15/2020	2-1	MB, LL	CLR	7	S	Moe's Sidechannel
1/15/2020	2-1	MB, LL	CLR	8	S	Moe's Sidechannel
1/15/2020	2-1	MB, LL	CLR	9	S	Moe's Sidechannel
1/15/2020	2-1	MB, LL	CLR	10	S	Moe's Sidechannel
1/15/2020	2-1	MB, LL	CLR	11	S	Moe's Sidechannel
1/15/2020	2-1	MB, LL	CLR	12	S	Moe's Sidechannel
1/15/2020	2-1	MB, LL	CLD	13	S	Top of Auditorium
1/15/2020	2-1	MB, LL	CLD	14	S	Hatchery Riffle
1/15/2020	2-1	MB, LL	CLD	15	S	Table Mountain
1/15/2020	2-1	MB, LL	CLD	16	S	Table Mountain
1/15/2020	2-1	MB, LL	CLD	17	S	Table Mountain
1/15/2020	2-1	MB, LL	CLD	18	S	Table Mountain
1/16/2020	2/2	MB, LL, JC	RAIN	1	S	Hatchery side channel
1/16/2020	2/2	MB, LL, JC	RAIN	2	S	Hatchery side channel
1/16/2020	2/2	MB, LL, JC	RAIN	3	S	Hatchery side channel
1/16/2020	2/2	MB, LL, JC	RAIN	4	S	Hatchery side channel
1/16/2020	2/2	MB, LL, JC	RAIN	5	S	Hatchery side channel
1/16/2020	2/2	MB, LL, JC	RAIN	6	S	Hatchery side channel
1/16/2020	2/2	MB, LL, JC	RAIN	7	S	Lower Auditorium
1/16/2020	2/2	MB, LL, JC	RAIN	8	S	Lower Auditorium

1/16/2020	2/2	MB, LL, JC	RAIN	9	S	Lower Auditorium
1/16/2020	2/2	MB, LL, JC	RAIN	10	S	Lower Auditorium
1/16/2020	2/2	MB, LL, JC	RAIN	11	S	Lower Auditorium
1/16/2020	2/2	MB, LL, JC	RAIN	12	S	Lower Auditorium
1/16/2020	2/2	MB, LL, JC	RAIN	13	S	Lower Auditorium
1/16/2020	2/2	MB, LL, JC	RAIN	14	S	Lower Auditorium
1/16/2020	2/2	MB, LL, JC	RAIN	15	S	Middle Auditorium
1/16/2020	2/2	MB, LL, JC	RAIN	16	S	Middle Auditorium
1/16/2020	2/2	MB, LL, JC	RAIN	17	S	Middle Auditorium
1/16/2020	2/2	MB, LL, JC	RAIN	18	S	Middle Auditorium
1/16/2020	2/2	MB, LL, JC	RAIN	19	S	Middle Auditorium
1/16/2020	2/2	MB, LL, JC	RAIN	20	S	Middle Auditorium
1/16/2020	2/2	MB, LL, JC	RAIN	21	S	Middle Auditorium
1/16/2020	2/2	MB, LL, JC	RAIN	22	S	Middle Auditorium
1/16/2020	2/2	MB, LL, JC	RAIN	23	S	Middle Auditorium
1/16/2020	2/2	MB, LL, JC	RAIN	24	S	Upper Auditorium
1/17/2020	2-3	JC, LL	CLD	1	S	Steep Side Channel
1/17/2020	2-3	JC, LL	CLD	2	S	Steep Side Channel
1/17/2020	2-3	JC, LL	CLD	3	S	Steep Riffle
1/17/2020	2-3	JC, LL	CLD	4	S	Steep Riffle
1/17/2020	2-3	JC, LL	CLD	5	S	Steep Riffle
1/17/2020	2-3	JC, LL	CLD	6	S	Steep Side Channel
1/17/2020	2-3	JC, LL	CLD	7	S	Steep Side Channel
1/17/2020	2-3	JC, LL	CLD	8	S	Eye Side Channel
1/17/2020	2-3	JC, LL	CLD	9	S	Trailer Park
1/17/2020	2-3	JC, LL	CLD	10	S	Trailer Park
1/17/2020	2-3	JC, LL	CLD	11	S	Trailer Park
1/17/2020	2-3	JC, LL	CLD	12	S	Matthews
1/17/2020	2-3	JC, LL	CLD	13	S	Matthews
1/17/2020	2-3	JC, LL	CLD	14	S	Matthews
1/17/2020	2-3	JC, LL	CLD	15	S	Upper Matthews
1/17/2020	2-3	JC, LL	CLD	16	S	Upper Robinson
1/17/2020	2-3	JC, LL	CLD	17	S	Upper Robinson
1/17/2020	2-3	JC, LL	CLD	18	S	Upper Robinson
1/22/2020	3-1	MB, LL	RAIN	1	S	Moe's Sidechannel
1/22/2020	3-1	MB, LL	RAIN	2	S	Moe's Sidechannel
1/22/2020	3-1	MB, LL	RAIN	3	S	Moe's Sidechannel
1/22/2020	3-1	MB, LL	RAIN	4	S	Moe's Sidechannel
1/22/2020	3-1	MB, LL	CLD	5	S	Moe's Sidechannel
1/22/2020	3-1	MB, LL	CLD	6	S	Moe's Sidechannel
1/22/2020	3-1	MB, LL	CLD	7	S	Moe's Sidechannel
1/22/2020	3-1	MB, LL	CLD	8	S	Moe's Sidechannel
1/22/2020	3-1	MB, LL	CLD	9	S	Moe's Sidechannel
1/22/2020	3-1	MB, LL	CLD	10	S	Moe's Sidechannel
1/22/2020	3-1	MB, LL	CLD	11	S	Moe's Sidechannel
1/22/2020	3-1	MB, LL	CLD	12	S	Moe's Sidechannel
1/22/2020	3-1	MB, LL	CLD	13	T	Moe's Sidechannel

1/22/2020	3-1	MB, LL	CLD	14	S	Hatchery side channel
1/22/2020	3-1	MB, LL	CLD	15	S	Hatchery side channel
1/22/2020	3-1	MB, LL	CLD	16	S	Hatchery side channel
1/22/2020	3-1	MB, LL	CLD	17	S	Hatchery side channel
1/22/2020	3-1	MB, LL	CLD	18	S	Hatchery side channel
1/22/2020	3-1	MB, LL	CLD	19	S	Hatchery side channel
1/22/2020	3-1	MB, LL	CLD	20	S	Hatchery side channel
1/22/2020	3-1	MB, LL	CLD	21	S	Table Mountain
1/22/2020	3-1	MB, LL	CLD	22	S	Table Mountain
1/22/2020	3-1	MB, LL	CLD	23	S	Table Mountain
1/23/2020	3-2	MB, LL	CLD	1	S	Lower Auditorium
1/23/2020	3-2	MB, LL	CLD	2	S	Below Lower Auditorium
1/23/2020	3-2	MB, LL	CLD	3	S	Lower Auditorium
1/23/2020	3-2	MB, LL	CLD	4	S	Lower Auditorium
1/23/2020	3-2	MB, LL	CLD	5	S	Lower Auditorium
1/23/2020	3-2	MB, LL	CLD	6	S	Lower Auditorium
1/23/2020	3-2	MB, LL	CLD	7	S	Lower Auditorium
1/23/2020	3-2	MB, LL	CLD	8	S	Lower Auditorium
1/23/2020	3-2	MB, LL	CLD	9	S	Lower Auditorium
1/23/2020	3-2	MB, LL	CLD	10	S	Lower Auditorium
1/23/2020	3-2	MB, LL	CLD	11	S	Lower Auditorium
1/23/2020	3-2	MB, LL	CLD	12	S	Lower Auditorium
1/23/2020	3-2	MB, LL	CLD	13	S	Middle Auditorium
1/23/2020	3-2	MB, LL	CLD	14	S	Upper Auditorium
1/23/2020	3-2	MB, LL	CLD	15	S	Upper Auditorium
1/24/2020	3-3	JC, LL	FOG	1	S	Eye Side Channel
1/24/2020	3-3	JC, LL	FOG	2	S	Eye Side Channel
1/24/2020	3-3	JC, LL	FOG	3	S	Eye Side Channel
1/24/2020	3-3	JC, LL	FOG	4	S	Eye Side Channel
1/24/2020	3-3	JC, LL	FOG	5	S	Steep Side Channel
1/24/2020	3-3	JC, LL	FOG	6	S	Gateway
1/24/2020	3-3	JC, LL	FOG	7	S	Gateway
1/24/2020	3-3	JC, LL	FOG	8	S	Lower Robinson
1/24/2020	3-3	JC, LL	CLD	9	S	Lower Robinson
1/24/2020	3-3	JC, LL	CLD	10	S	Lower Robinson
1/24/2020	3-3	JC, LL	CLD	11	S	Lower Robinson
1/24/2020	3-3	JC, LL	CLD	12	S	Lower Robinson
1/24/2020	3-3	JC, LL	CLD	13	S	Lower Robinson
1/24/2020	3-3	JC, LL	CLD	14	S	Upper Robinson
1/29/2020	4-1	KL, LL	CLR	1	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLR	2	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLR	3	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLR	4	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLD	5	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLD	6	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLD	7	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLD	8	S	Moe's Sidechannel

1/29/2020	4-1	KL, LL	CLR	9	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLR	10	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLR	12	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLR	13	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLR	14	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLR	15	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLR	16	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLR	17	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLR	18	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLR	19	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLR	20	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLR	21	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLR, WND	22	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLR, WND	23	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLR, WND	24	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLR, WND	25	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLR, WND	26	S	Moe's Sidechannel
1/29/2020	4-1	KL, LL	CLR, WND	27	S	Hatchery side channel
1/29/2020	4-1	KL, LL	CLR, WND	28	S	Hatchery side channel
1/29/2020	4-1	KL, LL	CLR, WND	29	S	Hatchery side channel
1/29/2020	4-1	KL, LL	CLR	30	S	Hatchery side channel
1/29/2020	4-1	KL, LL	CLR	31	S	Hatchery side channel
1/29/2020	4-1	KL, LL	CLR	32	S	Hatchery side channel
1/29/2020	4-1	KL, LL	CLR	33	S	Hatchery side channel
1/29/2020	4-1	KL, LL	CLD, WND	34	S	Hatchery side channel
1/29/2020	4-1	KL, LL	CLD, WND	35	S	Hatchery side channel
1/29/2020	4-1	KL, LL	CLD, WND	36	S	Hatchery side channel
1/29/2020	4-1	KL, LL	CLD, WND	37	S	Hatchery
1/29/2020	4-1	KL, LL	CLD	38	S	Top of Auditorium
1/29/2020	4-1	KL, LL	CLD	39	S	Top of Auditorium
1/29/2020	4-1	KL, LL	CLD	40	S	Top of Auditorium
1/29/2020	4-1	KL, LL	CLD	41	S	Table Mountain
1/29/2020	4-1	KL, LL	CLD	42	S	Table Mountain
1/29/2020	4-1	KL, LL	CLD	43	S	Table Mountain
1/29/2020	4-1	KL, LL	CLD	44	S	Table Mountain
1/29/2020	4-1	KL, LL	CLD	45	S	Table Mountain
1/29/2020	4-1	KL, LL	CLD	46	S	Lower Table Mountain
1/30/2020	4-2	KL, LL	CLR	1	S	Steep Riffle (lower)
1/30/2020	4-2	KL, LL	CLR	2	S	Steep Riffle
1/30/2020	4-2	KL, LL	CLR	3	S	Steep Riffle
1/30/2020	4-2	KL, LL	CLR	4	S	Steep Riffle
1/30/2020	4-2	KL, LL	CLR	5	S	Steep Riffle
1/30/2020	4-2	KL, LL	CLR	6	S	Steep Riffle
1/30/2020	4-2	KL, LL	CLR	7	S	Steep Side Channel
1/30/2020	4-2	KL, LL	CLR	8	S	Steep Side Channel
1/30/2020	4-2	KL, LL	CLR	9	S	Eye
1/30/2020	4-2	KL, LL	CLR	10	S	Eye

1/30/2020	4-2	KL, LL	CLR	11	S	Eye
1/30/2020	4-2	KL, LL	CLR	12	S	Lower Auditorium
1/30/2020	4-2	KL, LL	CLR	13	S	Lower Auditorium
1/30/2020	4-2	KL, LL	CLR	14	S	Lower Auditorium
1/30/2020	4-2	KL, LL	CLR	15	S	Lower Auditorium
1/30/2020	4-2	KL, LL	CLR	16	S	Lower Auditorium
1/30/2020	4-2	KL, LL	CLR	17	S	Lower Auditorium
1/30/2020	4-2	KL, LL	CLR	18	S	Lower Auditorium
1/30/2020	4-2	KL, LL	CLR	19	S	Lower Auditorium
1/30/2020	4-2	KL, LL	CLR	20	S	Lower Auditorium
1/30/2020	4-2	KL, LL	CLR	21	S	Lower Auditorium
1/30/2020	4-2	KL, LL	CLR	22	S	Lower Auditorium
1/30/2020	4-2	KL, LL	CLR	23	S	Lower Auditorium
1/30/2020	4-2	KL, LL	CLR	24	S	Lower Auditorium
1/30/2020	4-2	KL, LL	CLR	25	S	Lower Auditorium
1/31/2020	4-3	MB, LL	CLR	1	S	Lower Robinson
1/31/2020	4-3	MB, LL	CLR	2	S	Lower Robinson
1/31/2020	4-3	MB, LL	CLR	3	S	Lower Robinson
1/31/2020	4-3	MB, LL	CLR	4	S	Lower Robinson
1/31/2020	4-3	MB, LL	CLR	5	S	Lower Robinson
1/31/2020	4-3	MB, LL	CLR	6	S	Lower Robinson
1/31/2020	4-3	MB, LL	CLR	7	S	Lower Robinson
1/31/2020	4-3	MB, LL	CLR	8	S	Lower Robinson
1/31/2020	4-3	MB, LL	CLR	9	S	Lower Robinson
1/31/2020	4-3	MB, LL	CLR	10	S	Lower Robinson
1/31/2020	4-3	MB, LL	CLR	11	S	Upper Robinson
1/31/2020	4-3	MB, LL	CLR	12	S	Upper Robinson
1/31/2020	4-3	MB, LL	CLR	13	S	Upper Robinson
1/31/2020	4-3	MB, LL	CLR	14	S	Upper Robinson
1/31/2020	4-3	MB, LL	CLR	15	S	Upper Robinson
1/31/2020	4-3	MB, LL	CLR	16	S	Upper Robinson
1/31/2020	4-3	MB, LL	CLR	17	S	Upper Robinson
1/31/2020	4-3	MB, LL	CLR	18	S	Trailer Park
1/31/2020	4-3	MB, LL	CLR	19	S	Trailer Park
1/31/2020	4-3	MB, LL	CLR	20	S	Trailer Park
1/31/2020	4-3	MB, LL	CLR, WND	21	S	Lower Auditorium
1/31/2020	4-3	MB, LL	CLR, WND	22	S	Lower Auditorium
1/31/2020	4-3	MB, LL	CLR, WND	23	S	Lower Auditorium
1/31/2020	4-3	MB, LL	CLR, WND	24	S	Lower Auditorium
1/31/2020	4-3	MB, LL	CLR	25	S	Lower Auditorium
1/31/2020	4-3	MB, LL	CLR	26	S	Lower Auditorium
1/31/2020	4-3	MB, LL	CLR	27	S	Lower Auditorium
1/31/2020	4-3	MB, LL	CLR	28	S	Lower Auditorium
1/31/2020	4-3	MB, LL	CLR, WND	29	S	Lower Auditorium
1/31/2020	4-3	MB, LL	CLR, WND	30	S	Lower Auditorium
1/31/2020	4-3	MB, LL	CLR, WND	31	S	Lower Auditorium
1/31/2020	4-3	MB, LL	CLR, WND	32	S	Lower Auditorium

1/31/2020	4-3	MB, LL		33	S	Lower Auditorium
1/31/2020	4-3	MB, LL		34	S	Lower Auditorium
1/31/2020	4-3	MB, LL		35	S	Lower Auditorium
1/31/2020	4-3	MB, LL		36	S	Lower Auditorium
1/31/2020	4-3	MB, LL	CLR	37	S	Lower Auditorium
1/31/2020	4-3	MB, LL	CLR	38	S	Lower Auditorium
1/31/2020	4-3	MB, LL	CLR	39	S	Lower Auditorium
1/31/2020	4-3	MB, LL	CLR	40	S	Lower Auditorium
1/31/2020	4-3	MB, LL	CLR	41	S	Lower Auditorium
1/31/2020	4-3	MB, LL	CLR	42	S	Lower Auditorium
1/31/2020	4-3	MB, LL	CLR	43	S	Middle Auditorium
1/31/2020	4-3	MB, LL	CLR	44	S	Upper Auditorium
1/31/2020	4-3	MB, LL	CLR	45	S	Hatchery Riffle
1/31/2020	4-3	MB, LL	CLR	46	S	Hatchery Riffle
1/31/2020	4-3	MB, LL	CLR	47	S	Hatchery Riffle
1/31/2020	4-3	MB, LL	CLR	48	S	Hatchery Riffle
2/3/2020	5-1	MB, LL	CLR	1	S	Moe's Sidechannel
2/3/2020	5-1	MB, LL	CLR	2	S	Moe's Sidechannel
2/3/2020	5-1	MB, LL	CLR	3	S	Moe's Sidechannel
2/3/2020	5-1	MB, LL	CLR	4	S	Moe's Sidechannel
2/3/2020	5-1	MB, LL	CLR	5	S	Moe's Sidechannel
2/3/2020	5-1	MB, LL	CLR	6	S	Moe's Sidechannel
2/3/2020	5-1	MB, LL	CLR	7	S	Moe's Sidechannel
2/3/2020	5-1	MB, LL	CLR	8	S	Moe's Sidechannel
2/3/2020	5-1	MB, LL	CLR	9	S	Moe's Sidechannel
2/3/2020	5-1	MB, LL	CLR	10	S	Moe's Sidechannel
2/3/2020	5-1	MB, LL	CLR	11	S	Moe's Sidechannel
2/3/2020	5-1	MB, LL	CLR	12	S	Moe's Sidechannel
2/3/2020	5-1	MB, LL	CLR, WND	13	S	Moe's Sidechannel
2/3/2020	5-1	MB, LL	CLR, WND	14	S	Moe's Sidechannel
2/3/2020	5-1	MB, LL	CLR, WND	15	S	Moe's Sidechannel
2/3/2020	5-1	MB, LL	CLR, WND	16	S	Moe's Sidechannel
2/3/2020	5-1	MB, LL	CLR, WND	17	S	Moe's Sidechannel
2/3/2020	5-1	MB, LL	CLR, WND	18	S	Moe's Sidechannel
2/3/2020	5-1	MB, LL	CLR, WND	19	S	Moe's Sidechannel
2/3/2020	5-1	MB, LL	CLR, WND	20	S	Moe's Sidechannel
2/3/2020	5-1	MB, LL	CLR, WND	21	S	Hatchery side channel
2/3/2020	5-1	MB, LL	CLR, WND	22	S	Hatchery side channel
2/3/2020	5-1	MB, LL	CLR, WND	23	S	Hatchery side channel
2/3/2020	5-1	MB, LL	CLR, WND	24	S	Hatchery side channel
2/3/2020	5-1	MB, LL	CLR, WND	25	S	Hatchery side channel
2/3/2020	5-1	MB, LL	CLR, WND	26	S	Hatchery side channel
2/3/2020	5-1	MB, LL	CLR, WND	27	S	Hatchery side channel
2/3/2020	5-1	MB, LL	CLR, WND	28	S	Hatchery side channel
2/3/2020	5-1	MB, LL	CLR, WND	29	S	Hatchery side channel
2/3/2020	5-1	MB, LL	CLR, WND	30	S	Hatchery side channel
2/3/2020	5-1	MB, LL	CLR, WND	31	S	Hatchery side channel

2/3/2020	5-1	MB, LL	CLR, WND	32	S	Hatchery side channel
2/3/2020	5-1	MB, LL	CLR, WND	33	S	Hatchery side channel
2/3/2020	5-1	MB, LL	CLR, WND	34	S	Table Mountain
2/3/2020	5-1	MB, LL	CLR, WND	35	S	Table Mountain
2/3/2020	5-1	MB, LL	CLR, WND	36	S	Table Mountain
2/3/2020	5-1	MB, LL	CLR, WND	37	S	Table Mountain
2/3/2020	5-1	MB, LL	CLR, WND	38	S	Table Mountain
2/3/2020	5-1	MB, LL	CLR, WND	39	S	Table Mountain
2/3/2020	5-1	MB, LL	CLR, WND	40	S	Table Mountain
2/3/2020	5-1	MB, LL	CLR, WND	41	S	Table Mountain
2/3/2020	5-1	MB, LL	CLR, WND	42	S	Table Mountain
2/4/2020	5-2	MB, LL	CLR, WND	1	S	Steep Riffle
2/4/2020	5-2	MB, LL	CLR, WND	2	S	Eye Side Channel
2/5/2020	5-3	MP, LL, TV	CLD	1	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	2	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	3	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	4	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	5	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	6	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	7	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	8	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	9	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	10	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	11	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	12	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	13	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	14	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	15	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	16	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	17	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	18	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	19	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	20	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	21	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	22	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	23	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	24	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	25	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	26	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	27	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	28	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	29	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	30	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	31	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	32	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	33	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	34	S	Lower Auditorium

2/5/2020	5-3	MP, LL, TV	CLD	35	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	36	S	Lower Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	37	S	Middle Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	38	S	Middle Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	39	S	Middle Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	40	S	Middle Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	41	S	Middle Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	42	S	Middle Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	43	S	Middle Auditorium
2/5/2020	5-3	MP, LL, TV	CLD	44	S	Middle Auditorium
2/6/2020	5-4	MP, LL, TV	CLR	1	S	Hatchery Riffle
2/6/2020	5-4	MP, LL, TV	CLR	2	S	Hatchery Riffle
2/6/2020	5-4	MP, LL, TV	CLR	3	S	Hatchery Riffle
2/6/2020	5-4	MP, LL, TV	CLR	4	S	Hatchery Riffle
2/6/2020	5-4	MP, LL, TV	CLR	5	S	Hatchery Riffle
2/6/2020	5-4	MP, LL, TV	CLR	6	S	Hatchery Riffle
2/6/2020	5-4	MP, LL, TV	CLR	7	S	Hatchery Riffle
2/6/2020	5-4	MP, LL, TV	CLR	8	S	Hatchery Riffle
2/6/2020	5-4	MP, LL, TV	CLR	9	S	Hatchery Riffle
2/6/2020	5-4	MP, LL, TV	CLR	10	S	Top of Auditorium
2/6/2020	5-4	MP, LL, TV	CLR	11	S	Top of Auditorium
2/6/2020	5-4	MP, LL, TV	CLR	12	S	Top of Auditorium
2/6/2020	5-4	MP, LL, TV	CLR	13	S	Top of Auditorium
2/6/2020	5-4	MP, LL, TV	CLR	14	S	Top of Auditorium
2/6/2020	5-4	MP, LL, TV	CLR	15	S	Top of Auditorium
2/6/2020	5-4	MP, LL, TV	CLR	16	S	Top of Auditorium
2/6/2020	5-4	MP, LL, TV	CLR	17	S	Top of Auditorium
2/6/2020	5-4	MP, LL, TV	CLR	18	S	Top of Auditorium
2/6/2020	5-4	MP, LL, TV	CLR	19	S	Top of Auditorium
2/6/2020	5-4	MP, LL, TV	CLR	20	S	Top of Auditorium
2/6/2020	5-4	MP, LL, TV	CLR	21	S	Top of Auditorium
2/6/2020	5-4	MP, LL, TV	CLR	22	S	Lower Robinson
2/6/2020	5-4	MP, LL, TV	CLR	23	S	Lower Robinson
2/6/2020	5-4	MP, LL, TV	CLR	24	S	Lower Robinson
2/6/2020	5-4	MP, LL, TV	CLR	25	S	Lower Robinson
2/6/2020	5-4	MP, LL, TV	CLR	26	S	Lower Robinson
2/6/2020	5-4	MP, LL, TV	CLR	27	S	Lower Robinson
2/12/2020	6-1	JC, LL	CLR	1	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	2	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	3	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	4	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	5	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	6	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	7	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	8	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	9	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	10	S	Lower Auditorium

2/12/2020	6-1	JC, LL	CLR	11	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	12	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	13	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	14	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	15	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	16	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	17	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	18	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	19	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	20	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	21	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	22	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	23	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	24	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	25	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	26	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	27	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	28	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	29	S	Lower Auditorium
2/12/2020	6-1	JC, LL	CLR	30	S	Middle Auditorium
2/12/2020	6-1	JC, LL	CLR	31	S	Upper Auditorium
2/12/2020	6-1	JC, LL	CLR	32	S	Upper Auditorium
2/12/2020	6-1	JC, LL	CLR	33	S	Upper Auditorium
2/12/2020	6-1	JC, LL	CLR	34	S	Upper Auditorium
2/12/2020	6-1	JC, LL	CLR	35	S	Upper Auditorium
2/12/2020	6-1	JC, LL	CLR	36	S	Hatchery side channel
2/12/2020	6-1	JC, LL	CLR	37	S	Hatchery side channel
2/12/2020	6-1	JC, LL	CLR	38	S	Hatchery side channel
2/12/2020	6-1	JC, LL	CLR	39	S	Hatchery side channel
2/12/2020	6-1	JC, LL	CLR	40	S	Moe's Sidechannel
2/12/2020	6-1	JC, LL	CLR	41	S	Moe's Sidechannel
2/12/2020	6-1	JC, LL	CLR	42	S	Moe's Sidechannel
2/13/2020	6-2	TK, LL	CLR	1	S	Moe's Sidechannel
2/13/2020	6-2	TK, LL	CLR	2	S	Top of Auditorium
2/13/2020	6-2	TK, LL	CLR	3	S	Top of Auditorium
2/13/2020	6-2	TK, LL	CLR	4	S	Top of Auditorium
2/13/2020	6-2	TK, LL	CLR	5	S	Top of Auditorium
2/13/2020	6-2	TK, LL	CLR	6	S	Top of Auditorium
2/13/2020	6-2	TK, LL	CLR	7	S	Top of Auditorium
2/13/2020	6-2	TK, LL	CLR	8	S	Top of Auditorium
2/13/2020	6-2	TK, LL	CLR	9	S	Top of Auditorium
2/13/2020	6-2	TK, LL	CLR	10	S	Hatchery Riffle
2/13/2020	6-2	TK, LL	CLR	11	S	Hatchery Riffle
2/13/2020	6-2	TK, LL	CLR	12	S	Hatchery Riffle
2/13/2020	6-2	TK, LL	CLR	13	S	Hatchery Riffle
2/13/2020	6-2	TK, LL	CLR	14	S	Hatchery Riffle
2/14/2020	6-3	JC, LL	CLR, CLD	1	S	Steep Side Channel

2/14/2020	6-3	JC, LL	CLR, CLD	2	S	Eye Side Channel
2/14/2020	6-3	JC, LL	CLR, CLD	3	S	Lower Robinson
2/14/2020	6-3	JC, LL	CLR, CLD	4	S	Upper Robinson
2/14/2020	6-3	JC, LL	CLR, CLD	5	S	Upper Robinson
2/14/2020	6-3	JC, LL	CLR, CLD	6	S	Upper Robinson
2/14/2020	6-3	JC, LL	CLR, CLD	7	S	Upper Robinson
2/18/2020	7-1	TK, LL	CLR	1	S	Moe's Sidechannel
2/18/2020	7-1	TK, LL	CLR	2	S	Moe's Sidechannel
2/18/2020	7-1	TK, LL	CLR	3	S	Moe's Sidechannel
2/18/2020	7-1	TK, LL	CLR	4	S	Moe's Sidechannel
2/18/2020	7-1	TK, LL	CLR	5	S	Moe's Sidechannel
2/18/2020	7-1	TK, LL	CLR	6	S	Hatchery side channel
2/18/2020	7-1	TK, LL	CLR	7	S	Hatchery side channel
2/18/2020	7-1	TK, LL	CLR	8	S	Hatchery side channel
2/18/2020	7-1	TK, LL	CLR	9	S	Hatchery side channel
2/18/2020	7-1	TK, LL	CLR	10	S	Hatchery side channel
2/18/2020	7-1	TK, LL	CLR	11	S	Hatchery side channel
2/18/2020	7-1	TK, LL	CLR	12	S	Top of Auditorium
2/18/2020	7-1	TK, LL	CLR	13	S	Top of Auditorium
2/18/2020	7-1	TK, LL	CLR	14	S	Top of Auditorium
2/18/2020	7-1	TK, LL	CLR	15	S	Top of Auditorium
2/18/2020	7-1	TK, LL	CLR	16	S	Table Mountain
2/18/2020	7-1	TK, LL	CLR	17	S	Table Mountain
2/19/2020	7-2	TK, LL	CLR	1	S	Lower Auditorium
2/19/2020	7-2	TK, LL	CLR	2	S	Lower Auditorium
2/19/2020	7-2	TK, LL	CLR	3	S	Upper Auditorium
2/19/2020	7-2	TK, LL	CLR	4	S	Upper Auditorium
2/19/2020	7-2	TK, LL	CLR	5	S	Upper Auditorium
2/19/2020	7-2	TK, LL	CLR	6	S	Upper Auditorium
2/19/2020	7-2	TK, LL	CLR	7	S	Upper Auditorium
2/19/2020	7-2	TK, LL	CLR	8	S	Upper Auditorium
2/19/2020	7-2	TK, LL	CLR	9	S	Hatchery Riffle
2/19/2020	7-2	TK, LL	CLR	10	S	Hatchery Riffle
2/19/2020	7-2	TK, LL	CLR	11	S	Hatchery Riffle
2/19/2020	7-2	TK, LL	CLR	12	S	Hatchery Riffle
2/19/2020	7-2	TK, LL	CLR	13	S	Hatchery Riffle
2/19/2020	7-2	TK, LL	CLR	14	S	Hatchery Riffle
2/19/2020	7-2	JK, KH	CLR	1	S	Hour Riffle
2/19/2020	7-2	JK, KH	CLR	2	S	Hour Riffle
2/19/2020	7-2	JK, KH	CLR	3	S	G95 Side Channel RL
2/20/2020	7-3	TK, LL	CLR	1	S	Trailer Park
2/20/2020	7-3	TK, LL	CLR	2	S	Trailer Park
2/20/2020	7-3	TK, LL	CLR	3	S	Trailer Park
2/20/2020	7-3	TK, LL	CLR	4	S	Trailer Park
2/20/2020	7-3	TK, LL	CLR	5	S	Matthews
2/20/2020	7-3	TK, LL	CLR	6	S	Matthews
2/20/2020	7-3	TK, LL	CLR	7	S	Matthews

2/20/2020	7-3	TK, LL	CLR	8	S	Lower Robinson
2/20/2020	7-3	TK, LL	CLR	9	S	Lower Robinson
2/20/2020	7-3	TK, LL	CLR	10	S	Lower Robinson
2/20/2020	7-3	TK, LL	CLR	11	S	Lower Robinson
2/21/2020	7-4	TK, LL	CLR	1	S	Eye Side Channel
2/21/2020	7-4	TK, LL	CLR	2	S	Eye Side Channel
2/21/2020	7-4	TK, LL	CLR	3	S	Gateway
2/21/2020	7-4	TK, LL	CLR	4	S	Gateway
2/21/2020	7-4	TK, LL	CLR	5	S	Gateway
2/21/2020	7-4	TK, LL	CLR	6	S	Vance East
2/21/2020	7-4	TK, LL	CLR	7	S	Vance East
2/21/2020	7-4	TK, LL	CLR	8	S	Lower Vance East
2/24/2020	8-1	LL, FV	CLR	1	S	Moe's Sidechannel
2/24/2020	8-1	LL, FV	CLR	2	S	Moe's Sidechannel
2/24/2020	8-1	LL, FV	CLR	3	S	Moe's Sidechannel
2/24/2020	8-1	LL, FV	CLR	4	S	Hatchery side channel
2/24/2020	8-1	LL, FV	CLR	5	S	Hatchery side channel
2/24/2020	8-1	LL, FV	CLR	6	S	Hatchery side channel
2/24/2020	8-1	LL, FV	CLR	7	S	Hatchery side channel
2/24/2020	8-1	LL, FV	CLR	8	S	Hatchery side channel
2/24/2020	8-1	LL, FV	CLR	9	S	Hatchery side channel
2/24/2020	8-1	LL, FV	CLR	10	S	Hatchery side channel
2/24/2020	8-1	LL, FV	CLR	11	S	Hatchery side channel
2/24/2020	8-1	LL, FV	CLR	12	S	Hatchery side channel
2/24/2020	8-1	LL, FV	CLR	13	S	Hatchery side channel
2/24/2020	8-1	LL, FV	CLR	14	S	Hatchery side channel
2/24/2020	8-1	LL, FV	CLR	15	S	Table Mountain
2/25/2020	8-2	BM, LL	CLR	1	S	Upper Auditorium
2/25/2020	8-2	BM, LL	CLR	2	S	Middle Auditorium
2/25/2020	8-2	BM, LL	CLR	3	S	Lower Auditorium
2/25/2020	8-2	BM, LL	CLR	4	S	Eye Side Channel
2/26/2020	8-3	TK, LL	CLR	1	S	Top of Junkyard
2/26/2020	8-3	TK, LL	CLR	2	S	Junkyard
2/26/2020	8-3	TK, LL	CLR	3	S	Big Bar
3/4/2020	9-1	KL, LL	CLR	1	S	Lower Auditorium
3/4/2020	9-1	KL, LL	CLR	2	S	Lower Auditorium
3/4/2020	9-1	KL, LL	CLR	3	S	Lower Auditorium
3/4/2020	9-1	KL, LL	CLR	4	S	Lower Auditorium
3/4/2020	9-1	KL, LL	CLR	5	S	Lower Auditorium
3/4/2020	9-1	KL, LL	CLR	6	S	Lower Auditorium
3/4/2020	9-1	KL, LL	CLR	7	S	Lower Auditorium
3/4/2020	9-1	KL, LL	CLR	8	S	Lower Auditorium
3/4/2020	9-1	KL, LL	CLR	9	S	Lower Auditorium
3/4/2020	9-1	KL, LL	CLR	10	S	Lower Auditorium
3/4/2020	9-1	KL, LL	CLR	11	S	Hatchery side channel
3/4/2020	9-1	KL, LL	CLR	12	S	Hatchery side channel
3/4/2020	9-1	KL, LL	CLR	13	S	Lower Robinson

3/5/2020	9-2	KL, LL	CLR	1	S	Table Mountain
3/5/2020	9-3	KL, LL	CLR	2	S	Eye Side Channel

Riffle position	Channel Geomorphic Unit	#steelhead	Bank Distance (m)	Pot length (m)	Pot width (m)	Pot Depth (m)	Redd length (m)	Redd width (m)
T	P	0	2.5	1.00	0.72	0.33	1.30	0.90
M	G	0	2.2	0.40	0.30	0.25	0.92	0.60
H	R	0	1.8	0.40	0.30	0.36	1.10	0.90
M	R	1	1.3	0.30	0.20	0.24	1.70	0.80
T	G	0	0.3	0.26	0.22	0.28	1.00	0.80
T	P	2	0.7	0.40	0.34	0.48	1.30	0.80
T	P	2	7.5	0.30	0.30	0.44	1.20	1.00
M	G	0	17.0	0.44	0.34	0.30	0.56	1.20
M	G	2	18.0	0.40	0.30	0.34	1.10	0.70
M	R	0	16.0	0.30	0.30	0.32	1.60	0.50
M	R	0	14.0	0.30	0.20	0.39	1.10	0.70
M	R	1	2.0	0.40	0.40	0.36	2.10	1.00
M	R	0	1.0	0.30	0.20	0.26	1.00	0.70
T	R	0	0.7	0.40	0.40	0.10	2.40	1.40
M	G	0	2.0	0.20	0.20	0.20	1.10	0.80
M	R	0	1.2	0.40	0.40	0.30	1.40	0.80
M	R	0	2.0	0.40	0.50	0.22	2.00	1.00
M	R	1	8.5	0.50	0.40	0.26	2.20	1.00
M	G	0	1.5	0.20	0.20	0.20	1.22	0.76
M	G	0	2.0	0.16	0.18	0.20	1.18	0.68
M	G	0	1.0	0.20	0.18	0.24	1.20	0.40
T	G	0	0.2	0.18	0.20	0.22	1.00	0.50
M	G	0	2.5	0.16	0.18	0.28	1.20	0.52
	G	0	1.0	0.30	0.30	0.26	1.12	1.00
M	G	0	1.2	0.18	0.20	0.24	1.08	0.62
M	G	0	0.9	0.20	0.22		1.24	0.72
T	G	0	3.0	0.26	0.20	0.34	1.24	0.50
T	R	0	1.5	0.22	0.20	0.30	1.42	0.54
T	R	0	3.5	0.22	0.20	0.32	1.26	0.52
T	R	0	4.0	0.30	0.30	0.42	2.00	1.00
T	P	1	10.0	0.30	0.30	0.84	1.42	0.80
M	G	0	1.0	0.20	0.22	0.32	1.20	0.48
T	G	0	4.0	0.18	0.20	0.56	1.30	0.50
T	G	0	2.5	0.32	0.32	0.54	1.20	0.68
T	G	0	1.2	0.28	0.24	0.36	1.08	0.70
T	G	0	0.3	0.26	0.22	0.28	1.24	0.78
H	R	0	0.8	0.18	0.18	0.38	1.72	0.72
H	R	0	3.5	0.22	0.22	0.34	0.82	0.52
H	R	0	1.2	0.20	0.20	0.36	1.70	0.62
H	R	0	0.2	0.22	0.20	0.34	1.34	0.48
T	G	0	4.0	0.22	0.18	0.38	1.22	0.70
T	G	0	3.0	0.22	0.20	0.44	1.48	1.00
M	G	0	10.0	0.24	0.22	0.42	1.20	0.74
M	G	0	6.5	0.26	0.24	0.30	1.24	0.72

M	G	0	5.5	0.30	0.24	0.34	1.72	0.80
M	G	0	3.5	0.18	0.18	0.30	1.04	0.60
M	G	0	1.5	0.34	0.24	0.34	1.22	0.70
T	R	0	4.0	0.36	0.32	0.30	1.20	0.66
M	R	0	6.5	0.24	0.28	0.32	1.24	0.72
H	R	0	4.0	0.32	0.30		2.00	0.34
T	G	0	3.5	0.36	0.28	0.36	1.22	0.68
T	G	0	2.2	0.27	0.22	0.34	1.58	0.60
T	G	0	2.2	0.32	0.30	0.32	1.78	0.84
T	G	0	5.0	0.30	0.24	0.40	1.34	0.72
M	G	0	1.8	0.26	0.22	0.38	2.18	0.68
M	G	0	1.5	0.34	0.30	0.56	2.04	0.68
M	G	0	2.2	0.20	0.20	0.42	1.18	0.54
M	G	0	0.5	0.24	0.18	0.28	1.80	0.40
M	R	0	3.4	0.24	0.20	0.50	1.32	0.32
T		0	1.5	0.20	0.16	0.30	1.20	0.48
M	R	0	3.5	0.22	0.18	0.25	1.12	0.54
M	R	0	9.5	0.24	0.22	0.26	1.18	0.78
H	R	0	25.0	0.30	0.28	0.45	1.44	0.58
T	P	0	7.0	0.16	0.14	0.40	0.62	0.40
T	G	0	2.5	0.24	0.24	0.36	1.15	0.70
H	R	0	1.8	0.20	0.18	0.29	1.82	0.56
T	G	0	7.0	0.28	0.24	0.36	1.20	0.54
T	G	0	6.5	0.30	0.30	0.50	1.08	0.62
M	R	0	5.5	0.32	0.22	0.38	1.74	0.64
M	R	0	7.0	0.26	0.24	0.40	1.52	0.50
M	R	0	11.0	0.26	0.26	0.40	1.18	0.50
T	R	0	2.0	0.34	0.28	0.44	1.22	0.76
M	R	0	1.0	0.22	0.20	0.28	1.74	0.54
M	R	0	1.2	0.28	0.20	0.28	1.02	0.62
H	R	0	3.0	0.32	0.22	0.28	1.72	0.56
M	R	0	25.0	0.24	0.20	0.26	1.54	0.58
M	R	0		0.20	0.16	0.32	1.24	0.46
H	R	0	3.0	0.30	0.28	0.30	1.14	0.66
M		0	3.0	0.28	0.26	0.32	1.30	0.56
M	G	0	2.8	0.40	0.26	0.32	1.96	0.70
M	G	0	3.0	0.32	0.30	0.32	1.72	0.74
M	G	0	1.2	0.30	0.28	0.34	1.42	0.56
M	G	0	2.2	0.24	0.18	0.24	0.82	0.52
M	G	0	0.4	0.34	0.30	0.28	1.42	0.58
M	G	0	4.5	0.32	0.22	0.32	1.22	0.52
M	G	0	0.8	0.22	0.20	0.22	0.84	0.40
H	R	0	1.0	0.38	0.24	0.34	2.02	0.54
M	R	1		0.26	0.24	0.34	1.34	0.62
T	R	0	1.8	0.28	0.26	0.30	1.30	0.54
T	R	0		0.24	0.20	0.22	1.18	0.44
T	R	0	4.8	0.26	0.20	0.24	1.22	0.56

M	R	0	0.6	0.30	0.22	0.30	1.22	0.60
T	G	0	2.0	0.26	0.22	0.38	0.84	0.48
T	R	0	1.5	0.28	0.22	0.24	1.20	0.62
T	G	0	1.4	0.24	0.20	0.28	0.98	0.54
M	G	0	1.1	0.32	0.20	0.36	0.84	0.42
M	G	0	1.6	0.26	0.26	0.26	1.02	0.60
M	G	0		0.22	0.20	0.22	0.88	0.62
H	R	0	6.2	0.30	0.26	0.48	1.32	0.58
T	G	0	2.0	0.30	0.26	0.34	1.24	0.56
M	G	0	0.2	0.28	0.24	0.38	1.26	0.40
M	G	0	7.5	0.26	0.24	0.30	0.70	0.42
M	G	0	30.0	0.32	0.24	0.30	1.56	0.54
M	G	0	21.0	0.38	0.26	0.40	1.12	0.62
M	G	0	18.5	0.30	0.20	0.26	0.94	0.50
M	R	0	15.0	0.30	0.20	0.38	0.94	0.62
T	G	0	13.5	0.32	0.22	0.38	1.18	0.48
H	R	0	11.5	0.20	0.18	0.22	1.08	0.42
T	R	1	8.0	0.22	0.20	0.22	1.26	0.62
M	R	0	4.5	0.22	0.20	0.26	1.30	0.48
M	R	0	6.5	0.22	0.22	0.22	0.82	0.48
T	R	0	9.0	0.38	0.32	0.36	1.22	0.70
T	R	1	7.5	0.30	0.22	0.32	1.30	0.62
T	G	0	6.0	0.22	0.20	0.32	0.94	0.46
M	G	0	5.4	0.20	0.20	0.32	1.12	0.42
M	G	0	0.3	0.18	0.16	0.30	0.54	0.28
H	R	0	8.0	0.22	0.22	0.48	1.20	0.42
H	R	2	5.0	0.26	0.24	0.44	1.20	0.54
H	R	0	4.0	0.26	0.24	0.40	1.40	0.70
H	R	0	3.0	0.34	0.30	0.41	1.60	0.60
M	R	0	5.0	0.26	0.22	0.42	1.20	0.44
T	P	0	7.0	0.46	0.30	0.56	3.20	0.80
T	P	0	9.0	0.44	0.40	0.70	2.20	0.70
T	R	0	6.0	0.32	0.28	0.31	1.60	0.58
M	G	0	5.0	0.32	0.24	0.33	1.42	0.48
H	R	0	2.0	0.50	0.44	0.33	1.84	0.56
M	G	0	5.2	0.25	0.20	0.35	1.60	0.74
T	G	0	12.0	0.38	0.34	0.42	1.16	0.56
H	R	0	15.0	0.36	0.28	0.43	1.46	0.70
M	R	0	32.0	0.41	0.32	0.40	1.30	0.66
M	R	0	0.8	0.58	0.54	0.26	1.70	1.02
M	G	0	0.5	0.52	0.60	0.24	1.50	0.80
T	G	0	0.4	0.52	0.66	0.36	1.70	0.90
M	R	0	0.2	0.46	0.48	0.24	1.70	0.90
M	R	0	2.5	0.46	0.36	0.29	1.30	0.80
T	R	0	3.2	0.46	0.50	0.28	1.70	0.80
M	G	0	2.0	0.50	0.40	0.32	1.80	0.80
M	G	0	0.2	0.52	0.46	0.32	1.50	1.20

M	G	0	0.1	0.46	0.41	0.34	1.80	0.90
T	G	0	3.0	0.48	0.44	0.40	2.66	1.46
M	G	0	1.5	0.60	0.50	0.50	1.80	0.70
M	G	0	0.4	0.50	0.38	0.24	2.02	0.86
M	G	0	0.4	0.20	0.26	0.24	1.40	0.90
M	G	1	0.1	0.40	0.45	0.30	1.47	0.80
M	G	2	0.2	0.50	0.40	0.32	1.00	0.70
M	G	2	0.3	0.40	0.26	0.26	1.60	0.88
M	G	0	2.2	0.32	0.32	0.30	1.24	0.70
M	G	0	0.1	0.32	0.24	0.26	2.02	0.92
H	R	0	0.2	0.42	0.36	0.34	2.20	1.10
H	R	0	0.2	0.48	0.36	0.28	1.30	0.72
M	R	0	0.4	0.48	0.36	0.32	2.22	1.04
M	R	0	0.6	0.40	0.36	0.29	1.48	0.76
M	R	0	0.1	0.48	0.42	0.24	1.70	1.20
M	G	0	0.8	0.40	0.30	0.22	2.28	1.26
T	R	0	3.2	0.48	0.22	0.26	2.80	0.94
T	R	0	0.6	0.38	0.30	0.16	1.60	1.00
H	R	1	3.6	0.52	0.36	0.32	2.60	1.40
M	R	0	0.0	0.48	0.50	0.44	2.40	1.50
H	R	1	3.2	0.38	0.32	0.34	1.36	0.70
H	R	1	0.8	0.40	0.38	0.32	1.60	0.64
M	R	0	3.2	0.40	0.32	0.28	1.56	0.70
M	G	0	1.5	0.40	0.30	0.40	1.40	0.64
M	R	0	0.6	0.44	0.32	0.40	1.86	0.90
M	R	0	1.6	0.40	0.36	0.34	1.80	1.00
T	G	2	1.0	0.52	0.46	0.56	1.90	1.00
M	G	0	1.2	0.26	0.24	0.28	1.10	0.90
M	R	0	6.1	0.30	0.32	0.34	1.20	0.76
M	R	0	8.0	0.40	0.36	0.40	2.02	0.90
H	R	2	5.2	0.50	0.46	0.54	2.02	1.04
		2	7.0	0.60	0.50	0.60	3.00	1.30
H	R	1	8.0	0.53	0.46	0.80	2.40	1.10
H	R	0	5.5	0.34	0.28	0.44	1.10	0.80
H	R	0	4.2	0.38	0.24	0.44	1.10	0.70
M	G	0		0.30	0.24	0.38	1.40	1.30
M	G	0		0.30	0.26	0.32	1.00	0.84
	R	0	2.5	0.28	0.26	0.18	0.82	0.74
M	R	0	2.0	0.34	0.24	0.24	2.20	0.68
H	R	0	5.0	0.34	0.30	0.32	2.30	1.00
H	G	0	2.2	0.36	0.34	0.36	1.50	0.98
H	G	0	2.5	0.28	0.24	0.30	0.70	0.62
H	R	0	6.0	0.22	0.20	0.20	1.60	0.60
H	R	0	2.4	0.26	0.26	0.36	0.82	0.64
H	R	0	3.0	0.50	0.40	0.50	1.60	0.92
H	R	0	8.5	0.34	0.22	0.60	1.80	0.60
H	R	0		0.30	0.22	0.52	1.40	0.72

H	R	0	7.0	0.30	0.24	0.56	1.70	0.92
T	G	0	30.0	0.30	0.22	0.50	1.30	0.50
T	G	0	35.0	0.50	0.32	0.90	1.70	0.98
M	G	0	30.0	0.18	0.16	0.24	1.02	0.54
M	G	0	30.0	0.34	0.30	0.40	2.60	0.50
M	G	0	30.0	0.30	0.28	0.36	1.20	0.58
				0.28	0.22	0.28	2.20	0.90
M	G	0	40.0	0.40	0.32	0.62	2.60	1.20
M	G	0	40.0	0.32	0.26	0.68	1.92	0.72
M	G	0		0.38	0.34	0.58	2.00	0.82
M	G		28.0	0.42	0.28	0.40	2.20	0.88
M	G	0	20.0	0.24	0.24	0.38	2.50	1.12
		0		0.30	0.22	0.12	1.60	0.80
M	G	0	22.0	0.26	0.24	0.38	2.22	0.72
M	G	0	20.0	0.32	0.26	0.32	1.50	1.22
M	G	0	6.0	0.30	0.24	0.42	2.28	0.62
M	R	0	7.4	0.32	0.24	0.28	1.80	0.48
M	R	0	8.0	0.22	0.20	0.38	1.72	0.40
M	R	0	3.0	0.30	0.24	0.28	1.88	0.42
M	R	0	3.0	0.42	0.30	0.34	2.42	0.64
H	R	0	3.8	0.20	0.16	0.32	0.94	0.38
H	R	0	4.2	0.30	0.22	0.44	1.34	0.60
M	G	0	7.0	0.50	0.20	0.48	1.52	0.76
M	G	0	5.6	0.46	0.26	0.42	1.22	0.62
		0	17.0	0.42	0.30	0.50	1.54	0.64
T	G	0	3.0	0.34	0.22	0.46	1.92	0.52
T	R	0	1.0	0.44	0.22	0.36	1.60	0.50
M	R	0	1.0	0.34	0.26	0.30	1.62	0.64
H	R	0	6.0	0.38	0.30	0.48	1.54	0.74
H	R	1	30.0	0.24	0.16	0.30	2.02	0.44
H	R	0	45.0	0.34	0.22	0.30	1.66	0.60
H	R	0	35.0	0.24	0.22	0.26	1.18	0.54
T	R	0	6.2	0.38	0.30	0.48	1.52	0.70
M	R	0	15.0	0.28	0.20	0.40	1.50	0.50
M	R	0	9.0	0.30	0.24	0.40	1.14	0.58
T	R	1	24.0	0.32	0.22	0.46	1.50	0.58
M	R	0	30.0	0.32	0.20	0.34	1.12	0.54
M	G	0	36.0	0.32	0.24	0.50	1.42	0.48
M	G	0	7.0	0.28	0.18	0.26	1.80	0.48
M	G		26.0	0.30	0.22	0.34	0.72	0.48
M	G	0	6.0	0.38	0.22	0.28	1.26	0.54
M	G	0	6.8	0.34	0.24	0.26	1.28	0.50
M	G	0	10.2	0.32	0.24	0.34	1.20	0.46
T	R	0	16.0	0.40	0.28	0.44	2.12	0.70
T	G	0	4.0	0.32	0.28	0.34	1.32	0.72
T	G	0	7.2	0.24	0.16	0.26	1.10	0.46
M	G	0	8.8	0.30	0.22	0.30	1.48	0.52

M	G	0	12.0	0.40	0.24	0.44	1.84	0.70
M	G	1	18.0	0.28	0.24	0.50	1.80	0.48
H	G	1	12.0	0.40	0.24	0.38	1.42	0.66
		1	11.0	0.32	0.22	0.32	1.18	0.50
M	G	2	6.2	0.34	0.26	0.38	1.98	0.60
T	G	1	5.4	0.34	0.20	0.34	1.72	0.64
T	G	2	4.5	0.34	0.24	0.32	1.70	0.62
T	G	1	3.8	0.36	0.24	0.28	1.24	0.64
T	G	1	2.0	0.28	0.22	0.26	1.18	0.50
T	R	1	5.0	0.40	0.26	0.34	1.26	0.78
M	G	0	14.0	0.30	0.26	0.54	1.08	0.44
M	G	0		0.40	0.32	0.44	1.72	0.64
M	G	0	6.0	0.50	0.26	0.42	1.20	0.58
M	R	0	8.4	0.34	0.24	0.42	1.72	0.52
T	G	0	8.0	0.30	0.24	0.40	2.06	0.60
T	R	0	10.0	0.32	0.24	0.36	1.20	0.62
H	R	0	1.8	0.32	0.22	0.22	1.72	0.52
M	G	0	1.2	0.40	0.28	0.32	1.24	0.58
T	G	0	2.0	0.22	0.18	0.38	0.76	0.40
M	R	0	1.0	0.24	0.20	0.22	1.22	0.44
M	G	0	4.6	0.32	0.24	0.32	1.00	0.60
M	G	0	1.0	0.30	0.18	0.30	1.44	0.52
M	G	0	2.4	0.28	0.22	0.26	1.12	0.70
M	G	0	3.2	0.26	0.20	0.28	1.00	0.80
M	G	0	1.2	0.30	0.26	0.32	1.04	0.50
M	G	0	6.2	0.34	0.26	0.32	1.32	0.66
M	G	0	5.4	0.30	0.22	0.40	1.24	0.50
M	G	0	3.2	0.32	0.22	0.42	1.12	0.70
H	R	0	1.8	0.30	0.20	0.30	1.12	0.48
T	G	0	1.0	0.32	0.24	0.28	1.10	0.80
H	R	0	2.6	0.30	0.22	0.32	1.08	0.42
H	R	0		0.22	0.18	0.22	0.96	0.42
M	R	0	0.6	0.32	0.20	0.26	1.12	0.60
M	R	0	2.6	0.20	0.16	0.22	0.90	0.40
M		0	1.4	0.20	0.16	0.20	0.78	0.38
M	R	0	4.6	0.20	0.16	0.22	1.10	0.40
T	G	1	6.2	0.26	0.18	0.20	1.36	0.48
T	G	0	6.8	0.20	0.16	0.18	1.00	0.40
T	G	0	7.4	0.30	0.24	0.22	1.36	0.78
M	R	0	2.6	0.26	0.18	0.22	1.20	0.46
H	R	2	0.2	0.34	0.22	0.32	1.26	0.70
H	R	0	3.2	0.38	0.26	0.38	1.54	0.76
T	P	1	3.8	0.28	0.20	0.48	1.20	0.74
M	R	0	1.0	0.24	0.20	0.28	1.12	0.50
M	G	0	4.0	0.22	0.18	0.18	0.88	0.42
M	G	0	2.6	0.34	0.26	0.26	1.22	0.54
M	G	0	1.2	0.24	0.20	0.36	1.22	0.56

M	G	0	3.4	0.32	0.24	0.32	1.26	0.88
M	G	0	2.0	0.28	0.26	0.22	0.82	0.54
T	G	0	8.4	0.28	0.22	0.64	1.08	0.40
T	G	1	8.2	0.24	0.20	0.56	1.78	0.72
H	R	0		0.30	0.24	0.42	1.18	0.60
T	G	3	2.4	0.40	0.26	0.38	1.32	0.68
T	G	2	0.3	0.36	0.20	0.42	1.42	0.82
M	G	2	0.8	0.34	0.22	0.30	1.62	0.50
M	G	0	3.0	0.20	0.16	0.30	0.86	0.48
M	G	2	1.6	0.26	0.18	0.30	0.82	0.46
M	G	1	6.4	0.28	0.20	0.54	1.12	0.48
H	R	0	8.2	0.34	0.24	0.30	1.34	0.46
T	G	0	2.0	0.30	0.24	0.40	1.42	0.60
M	G	0	20.0	0.26	0.24	0.48	1.30	0.36
M	G	0	39.0	0.20	0.22	0.22	0.90	0.72
M	G	0	42.0	0.24	0.20	0.52	2.20	0.56
M	G	0	44.0	0.30	0.22	0.50	1.20	0.62
M	G	0	48.0	0.32	0.28	0.54	1.60	0.96
M	G	0	50.0	0.38	0.36	0.84	2.00	1.20
M	G	0	50.1	0.30	0.24	0.80	0.72	0.64
M	G	0	49.0	0.34	0.32	0.60	1.30	0.64
M	G	0	50.0	0.28	0.22	0.62	2.00	0.80
M	G	0	24.0	0.22	0.18	0.24	1.40	0.48
M	G	0	30.0	0.18	0.16	0.32	1.12	0.42
M	G	0	35.0	0.26	0.20	0.42	1.60	1.02
M		0	25.0	0.26	0.22	0.40	0.82	1.30
M	G	0	15.0	0.24	0.20	0.24	2.40	0.72
M	G	0	15.0	0.30	0.22	0.36	2.00	0.70
M	G	0	10.0	0.24	0.14	0.22	1.00	0.44
M	G	0	5.0	0.28	0.26	0.14	1.20	0.60
M	G	0	2.0	0.24	0.22	0.20	1.50	0.90
	G	0	10.0	0.30	0.24	0.32	1.60	0.80
M	G	0	15.0	0.24	0.20	0.30	1.24	0.54
	G	0	18.0	0.26	0.22	0.32	1.32	0.64
	R	0	29.0	0.30	0.28	0.40	1.30	0.52
	R	0	18.0	0.36	0.32	0.40	1.70	0.92
	R	0	17.0	0.24	0.22	0.36	1.80	0.84
M	R	0	7.0	0.24	0.20	0.32	1.20	0.60
M	R	0	2.0	0.24	0.22	0.22	1.20	0.54
H	R	0	2.0	0.24	0.22	0.20	1.10	0.48
T	R	0	1.0	0.26	0.24	0.18	1.20	0.74
T	R	0	4.0	0.24	0.22	0.32	1.30	0.62
H	R	0	5.0	0.20	0.20	0.32	0.74	0.52
H	R	0	6.0	0.22	0.18	0.30	1.30	0.54
H	R	0	10.0	0.16	0.16	0.24	0.78	0.42
H	R	0	11.0	0.24	0.20	0.30	1.80	0.78
H	R	0	19.0	0.24	0.20	0.40	2.20	0.82

H	R	0	2.0	0.34	0.32	0.38	1.90	0.74
H	R	0	18.0	0.26	0.20	0.48	1.50	0.70
H	R	0	21.0	0.32	0.24	0.64	1.80	1.10
M	G	0	8.0	0.24	0.22	0.44	1.30	0.60
T	G	0	10.0	0.26	0.26	0.32	1.20	0.42
T	G	0	3.0	0.28	0.22	0.36	1.70	0.90
H	R	0	1.0	0.22	0.20	0.26	1.10	0.80
M	R	0	5.0	0.12	0.12	0.24	0.84	0.50
M	G	0	18.0	0.26	0.22	0.54	1.94	0.80
T	G	0	4.0	0.22	0.18	0.60	1.20	0.60
T	R	0	10.0	0.30	0.22	0.20	1.40	0.62
M	R	0	5.0	0.24	0.22	0.30	1.92	0.80
T	R	0	4.0	0.20	0.20	0.34	1.86	0.90
M	G	0	7.0	0.26	0.24	0.40	1.20	0.74
M	R	0	0.6	0.20	0.16	0.26	0.86	0.34
M	G	0	3.5	0.24	0.22	0.40	1.70	0.82
M	G	0	10.0	0.20	0.20	0.38	0.88	0.74
M	BW	0	1.0	0.12	0.12	0.52	0.70	0.38
M	G	0	1.0	0.26	0.24	0.34	2.10	0.92
M	R	0	20.0	0.20	0.18	0.36	2.20	0.62
H	R	0	7.0	0.24	0.22	0.38	0.80	0.70
H	R	0	7.5	0.22	0.18	0.32	1.60	0.50
H	R	0	30.0	0.36	0.30	0.52	1.80	0.92
H	R	0	1.5	0.24	0.22	0.40	2.00	1.20
H	R	0	0.2	0.20	0.20	0.24	1.50	0.70
M	R	0	1.5	0.24	0.22	0.38	1.72	1.12
M	R	0	2.0	0.28	0.20	0.38	1.74	0.82
M	R	0	1.0	0.24	0.22	0.24	1.50	0.96
M	R	0	1.0	0.22	0.20	0.22	1.12	1.10
M	R	0	1.8	0.20	0.20	0.32	2.06	1.12
M	R	0	8.0	0.26	0.22	0.52	1.70	0.98
M	G	0	5.2	0.22	0.20	0.32	1.02	0.62
M	G	0	2.4	0.14	0.12	0.20	1.00	0.54
M	R	0	10.0	0.22	0.20	0.36	2.20	1.40
M	R	0	14.0	0.20	0.22	0.32	1.60	1.02
M	R	0	18.0	0.48	0.42	0.38	1.50	1.12
M	R	0	22.0	0.16	0.18	0.42	1.90	1.20
M	G	0	4.6	0.22	0.18	0.34	1.10	0.56
T	G	0	20.0	0.38	0.30	0.48	1.70	0.66
T	G	0	24.0	0.34	0.30	0.54	1.54	0.64
T		0	28.0	0.40	0.38	0.58	1.52	0.62
T	G	0	22.0	0.24	0.24	0.56	1.32	0.58

M	G	0	26.0	0.28	0.22	0.56	1.44	0.56
M	G	0	6.6	0.42	0.34	0.18	1.32	0.58
M	G	0	14.0	0.16	0.14	0.38	0.98	0.46
M	G	0	8.2	0.24	0.18	0.28	1.16	0.46
M	G	0	4.6	0.26	0.24	0.20	1.22	0.48
M	G	0	3.0	0.32	0.36	0.20	1.20	0.62
M	G	1	3.6	0.32	0.30	0.26	1.20	0.62
H	G	0	10.0	0.36	0.26	0.34	1.66	0.58
T	R	0	8.2	0.28	0.24	0.39	1.16	0.60
T	R	0	1.6	0.30	0.30	0.30	1.30	0.72
M	R	4	12.0	0.30	0.24	0.46	1.72	0.60
M	R	1	18.0	0.28	0.26	0.66	1.40	0.60
M	G	0	20.0	0.30	0.30	0.72	1.38	0.72
M	G	5	0.4	0.40	0.36	0.30	1.34	0.86
T	R	0	1.0	0.38	0.40	0.39	1.86	1.06
H	R	0	1.0	0.38	0.34	0.24	1.62	0.82
T	R	0	6.0	0.30	0.18	0.22	1.00	0.60
M	G	0	8.0	0.40	0.35	0.46	1.30	0.60
H	R	0	4.0	0.30	0.30	0.34	1.60	0.60
H	R	0		0.30	0.30	0.32	0.70	0.50
H	R	0	10.0	0.70	0.40	0.42	2.00	0.70
H	R	1	10.0	0.46	0.30	0.54	1.30	0.60
H	R	1	8.0	0.40	0.40	0.54	1.76	1.14
T	G	1	7.0	0.50	0.40	0.62	2.50	1.13
		3	12.0	0.60	0.40	0.64	2.00	1.20
M	R	0	10.0	0.40	0.35	0.52	1.50	0.54
M	R	0	12.0	0.35	0.24	0.22	0.80	0.64
M	R	0	7.0	0.50	0.40	0.40	1.60	0.80
M	G	0	14.0	0.42	0.40	0.72	1.16	0.56
M	G	0	13.0	0.40	0.30	0.48	2.00	0.50
M	R	0	2.0	0.26	0.24	0.44	1.60	0.70

M	G	0	7.0	0.28	0.22	0.62	2.04	0.80
T	P	0	5.0	0.28	0.26	0.34	1.02	0.80
H	R	0	30.0	0.10	0.10	0.26	0.82	0.32
H	R	0	33.0	0.42	0.34	0.40	1.62	1.02
H	R	0	12.0	0.34	0.30	0.56	1.72	1.10
T	R	0	35.0	0.26	0.22	0.36	2.32	0.60
M	G	0	0.6	0.40	0.30	0.20	1.13	0.60
M	G	0	2.8	0.30	0.26	0.30	1.10	0.44
M	G	1	4.4	0.36	0.24	0.24	1.14	0.50
H	R	1	3.4	0.30	0.26	0.34	1.16	0.50
M	R	1	2.2	0.30	0.30	0.36	2.00	0.45
T	R	0	0.8	0.40	0.36	0.24	1.80	0.76
M	R	0	0.2	0.20	0.16	0.24	1.00	0.42
H	R	0		0.38	0.30	0.26	1.40	0.70
M	G	0	6.0	0.40	0.30	0.32	1.40	1.12
H	G	0	2.0	0.34	0.26	0.22	1.00	0.50
T	G	0		0.40	0.34	0.28	1.40	1.00
H	R	0	10.0	0.50	0.40	0.38	2.20	1.20
M	R	0	7.4	0.40	0.40	0.34	1.00	0.80
H	R	1	1.2	0.40	0.40	0.54	2.00	1.00
M	R	2	8.0	0.40	0.30	0.57	2.40	0.80
M	G	1	3.6	0.30	0.26	0.56	1.40	0.76
H	R	4	0.4	0.40	0.30	0.38	0.80	0.50
M	G	0	20.0	0.28	0.26	0.36	0.90	0.46
M	G	0	18.0	0.46	0.40	0.42	2.00	0.60
M	R	0	6.0	0.40	0.30	0.40	1.80	0.44
M	R	0	6.4	0.46	0.40	0.38	2.06	0.66
M	R	0	16.0	0.26	0.24	0.30	0.80	0.38
M	R	0	18.0	0.40	0.38	0.38	2.00	0.64
M	R	1	20.0	0.50	0.40	0.78	2.20	0.60
M	G	0	3.0	0.40	0.30	0.42	1.24	0.70
M	R	0	10.0	0.30	0.30	0.48	0.80	0.58
M	R	0	12.0	0.42	0.36	0.58	1.40	0.60
M	G	0	16.0	0.46	0.36	0.58	1.48	0.66
M	G	0	17.2	0.40	0.30	0.60	2.00	1.00
T	G	0	22.0	0.34	0.30	0.52	1.60	0.80
M	R	1	24.0	0.42	0.34	0.50	1.42	0.60
M	R	0	7.0				1.25	0.70
M	R	0	8.0				1.10	0.50
H	R	0	8.0				1.20	0.60
M	G	0	3.0	0.30	0.30	0.56	1.00	0.60
M	G	0	3.6	0.30	0.26	0.62	1.30	0.60
M	G	0	4.2	0.30	0.24	0.68	1.12	0.50
M	G	0	2.6	0.34	0.30	0.74	2.00	0.50
H	R	0	5.6	0.30	0.28	0.48	2.04	0.70
H	R	0	5.8	0.40	0.36	0.44	1.60	0.70
M	G	0	6.4	0.30	0.30	0.34	2.20	0.50

M	G	0	3.0	0.32	0.30	0.36	1.50	0.50
M	G	0	1.4	0.36	0.30	0.34	1.27	0.60
M	G	0	1.2	0.44	0.32	0.34	2.00	0.58
M	G	0	5.4	0.28	0.20	0.38	1.30	0.80
M	G	0	4.6	0.30	0.20	0.30	1.20	0.50
H	R	0	2.0	0.30	0.26	0.36	1.30	0.50
H	R	0	9.6	0.34	0.30	0.50	1.60	0.60
H	R	0	10.6	0.50	0.40	0.66	2.20	0.68
H	R	0	2.6	0.48	0.40	0.42	2.40	0.70
M	R	0	2.0	0.32	0.26	0.24	1.20	0.60
M	R	0	2.8	0.50	0.42	0.30	1.50	0.74
M	R	0	12.0					
M	G	0	1.5	0.20	0.20	0.28	1.50	0.80
H	R	0	1.4	0.28	0.24	0.32	1.10	0.50
T	G	1	0.9	0.36	0.32	0.20	1.50	0.50
M	G	0	2.4	0.16	0.12	0.26	1.00	0.50
M	G	0	3.4	0.24	0.20	0.34	1.06	0.50
M	G	0	2.6	0.20	0.20	0.36	1.10	0.50
M	G	0	2.5	0.24	0.20	0.26	0.90	0.50
M	G	0						
M	G	0	0.5	0.24	0.22	0.24	1.90	1.00
M	G	1	1.0	0.22	0.18	0.28	1.20	0.94
M	G	1	3.0	0.22	0.20	0.28	1.10	0.70
T	G	1	3.0	0.24	0.20	0.28	1.10	0.70
M	G	1	3.0	0.20	0.16	0.26	0.90	0.70
M	G	1	2.6	0.24	0.20	0.42	1.00	0.60
M	R	0	6.6	0.26	0.24	0.50	1.20	0.70
M	G	0	4.5	0.30	0.28	0.34	2.10	0.70
M	G	0	14.0	0.50	0.40	0.58	1.20	0.72
M	G	0	12.0	0.32	0.26	0.32	1.50	0.76
M	G	0	10.0	0.38	0.34	0.48	1.06	0.48
M	R							
H	R	0	3.0	0.40	0.30	0.34	2.20	0.70
H	R	0	10.0	0.36	0.30	0.44	1.70	0.72

M	G	0	20.0	0.30	0.24	0.36	1.40	0.62
M	G	0	21.0	0.36	0.30	0.32	1.48	0.62
M	G	0	9.6	0.26	0.24	0.32	1.30	0.74
M	G	1	2.6	0.22	0.22	0.22	1.10	0.68
T	G	0	1.5	0.50	0.44	0.36	1.52	1.24
M	G	0	2.0	0.30	0.40	0.38	1.08	0.90

M	G	1	3.6	0.22	0.20	0.52	1.20	0.62
M	G	0	2.4	0.34	0.32	0.30	1.80	1.10

water depth (m)	water velocity (m/s)	% silt, mud	%sand	%gravel	% pebble	%cobble	%boulder	Overhead cover
0.18		0	5	25	35	35	0	3
0.19		0	5	10	45	40	0	3
0.34		0	5	15	65	15	0	None
0.20		0	10	10	65	15	0	1,2
0.24		0	5	15	50	30	0	none
0.34		0	5	35	55	5	0	1
0.42		0	15	30	40	15	0	none
0.20		0	5	25	40	30	0	None
0.46		0	10	20	50	20	0	None
0.26		0	5	20	60	15	0	None
0.42		0	5	10	65	20	0	None
0.22		0	5	15	60	20	0	None
0.26		0	5	15	65	10	5	1
0.10		0	5	10	70	15	0	3
0.22		0	10	50	30	10	0	None
0.14		0	5	15	75	5	0	none
0.14		0	10	20	40	30	0	none
0.26		0	10	30	20	40	0	None
0.18	0.304	5	20	60	15	0	0	2
0.18	0.254	0	45	30	20	5	0	None
0.12	0.227	0	15	20	45	20	0	1
0.20	0.254	0	40	30	20	9	1	1
0.24	0.472	0	50	40	10	0	0	2
0.18	0.298	10	20	30	40	0	0	2
0.16	0.249	0	60	20	20	0	0	None
0.14	0.213	0	10	40	40	10	0	None
0.12	0.250	30	40	20	10	0	0	None
0.18	0.537	5	15	30	40	10	0	None
0.26	0.298	0	10	50	40	0	0	None
0.28	0.494	0	20	40	40	0	0	None
0.82	0.408	0	25	70	5	0	0	None
0.36	0.209	0	10	45	30	10	5	None
0.46	0.276	25	10	30	25	10	0	None
0.50	0.444	0	20	40	30	10	0	None
0.22	0.792	15	35	30	20	0	0	None
0.26	0.302	30	35	25	10	0	0	2
0.36	0.192	10	25	30	20	15	0	none
0.22	0.392	10	35	35	15	5	0	None
0.30	0.298	20	15	25	40	0	0	none
0.30	0.218	10	20	20	20	25	5	1
0.34	0.148	10	20	30	30	10	0	none
0.48	0.119	5	25	25	35	10	0	none
0.40	0.459	0	20	30	20	30	0	none
0.28	0.464	0	5	25	30	40	0	None

0.32	0.320	0	15	35	20	25	5	none
0.24	0.369	5	5	30	60	0	0	none
0.30	0.458	10	10	25	25	30	0	None
0.24	0.306	5	15	20	20	35	5	none
0.32	0.569	10	35	20	35	0	0	none
0.38	0.232	10	15	15	25	25	10	none
0.36	0.329	0	10	15	30	20	25	None
0.30	0.266	0	10	20	20	35	15	None
0.26	0.374	0	0	15	30	35	20	None
0.30	0.479	0	15	30	35	20	0	None
0.38	0.408	0	20	25	35	20	0	None
0.54	0.253	0	10	40	30	15	5	None
0.44	0.421	0	40	30	15	15	0	1
0.28	0.073	10	15	40	35	0	0	2
0.46	0.381	0	25	20	35	10	10	None
0.36	0.236	0	25	20	55	0	0	1
0.28	0.391	0	30	35	35	0	0	None
0.22	0.326	0	30	30	40	0	0	None
0.48	0.427	0	30	25	35	10	0	None
0.52	0.442	0	25	25	50	0	0	None
0.29	0.309	0	25	40	35	0	0	1
0.24	0.409	0	20	20	60	0	0	2
0.37	0.615	0	30	35	25	10	0	None
0.56	0.660	0	20	30	35	15	0	None
0.34	0.238	0	10	45	35	10	0	None
0.36	0.847	0	25	30	45	0	0	None
0.36	0.982	0	10	15	55	20	0	None
0.40	0.587	0	0	25	55	15	5	None
0.24	0.684	0	15	30	35	20	0	None
0.20	0.303	5	20	35	25	10	5	None
0.22	0.282	0	10	30	35	15	10	None
0.20	0.321	0	10	25	65	0	0	None
0.26	0.494	0	30	30	30	10	0	None
0.24	0.650	0	20	30	30	20	0	None
0.28	0.270	0	5	20	25	50	0	None
0.28	0.148	0	0	20	35	45	0	None
0.16	0.385	0	20	20	60	0	0	None
0.30	0.142	0	20	20	30	30	0	1
0.22	0.444	0	20	25	55	0	0	
0.20	0.365	0	20	20	35	25	0	1
0.22	0.308	0	10	30	60	0	0	None
0.20	0.188	0	30	30	40	0	0	None
0.30	0.300	0	25	35	40	0	0	None
0.30	0.346	0	20	35	45	0	0	None
0.10	0.626	0	10	30	40	20	0	None
0.26	0.309	0	35	35	30	0	0	None
0.14	0.470	5	5	10	70	10	0	None

0.16	0.787	0	40	30	30	0	0	None
0.34	0.289	0	25	35	35	5	0	1
0.22	0.208	0	20	40	30	10	0	None
0.20	0.376	0	30	20	40	10	0	1
0.34	0.239	5	25	30	40	0	0	1
0.18	0.423	0	20	30	45	5	0	2
0.18	0.406	0	5	25	70	0	0	None
0.42	0.782	0	15	20	30	15	20	None
0.24	0.557	0	5	30	35	30	0	None
0.30	0.369	0	15	20	25	25	15	1
0.28	0.230	0	40	30	30	0	0	None
0.26	0.453	0	20	30	30	20	0	None
0.34	0.420	0	35	35	25	5	0	None
0.24	0.287	0	10	40	50	0	0	None
0.28	0.570							None
0.34	0.472	0	20	20	60	0	0	None
0.20	0.448	0	10	20	70	0	0	None
0.18	0.460	0	20	40	40	0	0	None
0.16	0.301	0	20	25	35	20	0	None
0.22	0.460	0	10	35	35	20	0	None
0.34	0.570	0	20	10	20	30	20	None
0.32	0.336	0	30	30	30	10	0	None
0.30	0.356	0	20	20	25	25	10	None
0.28	0.559	0	10	30	60	0	0	None
0.26	0.468	0	30	30	40	0	0	1
0.44	0.462	0	0	25	40	20	15	None
0.49	0.463	0	10	15	35	40	0	None
0.16	0.708	0	5	25	55	15	0	None
0.16	0.740	0	5	25	50	20	0	1
0.40	0.914	0	0	25	65	10	0	None
0.48	0.732	0	0	30	50	20	0	None
0.66	0.714	0	10	20	50	20	0	None
0.38	0.372	0	5	15	30	40	10	None
0.35	0.431	0	10	20	60	10	0	None
0.30	0.290	0	5	5	20	70	0	None
0.36	0.414	0	25	25	30	20	0	None
0.30	0.238	0	10	15	15	60	0	None
0.36	0.575	0	10	30	30	30	0	None
0.36	0.375	0	20	25	35	20	0	None
0.22	0.740	0	0	60	30	10	0	None
0.16	0.350	0	25	20	35	20	0	1
0.34	0.140	0	30	30	20	20	0	None
0.14	0.150	0	0	25	30	45	0	None
0.26	0.131	0	15	35	35	15	0	None
0.22	0.400	0	10	35	30	25	0	None
0.29	0.143	0	25	35	25	15	0	None
0.28	0.351	0	20	30	20	30	0	1

0.31	0.211	0	15	30	25	20	10	1
0.29	0.174	0	10	30	30	30	0	None
0.46	0.290	0	20	30	25	25	0	3
0.20	0.214	0	10	15	25	20	30	None
0.18	0.233	0	20	30	45	5	0	None
0.26	0.300	0	20	35	20	20	5	1
0.18	0.387	0	10	40	30	20	0	1
0.20	0.238	0	10	30	20	40	0	None
0.19	0.198	0	30	30	40	0	0	None
0.17	0.111	0	30	40	30	0	0	None
0.78	0.267	0	20	40	25	15	0	None
0.16	0.688	0	30	30	30	10	0	None
0.28	0.352	0	30	30	20	20	0	None
0.22	0.453	0	5	45	45	5	0	None
0.20	0.105	0	20	35	25	15	5	
0.15	0.111	0	30	30	20	20	0	None
0.12	0.804	0	10	40	20	10	20	None
0.14	0.541	0	20	35	45	0	0	None
0.16	0.582	0	30	20	30	10	10	None
0.28	0.474	0	20	30	30	20	0	1
0.26	0.281	0	30	30	30	10	0	None
0.16	0.360	0	30	20	20	30	0	None
0.19	0.944	10	30	30	30	0	0	2
0.36	0.264	5	20	10	35	30	0	1
0.12	0.364	10	20	20	30	20	0	2
0.16	0.301	0	30	40	20	10	0	2
0.48	0.374	0	20	20	20	25	15	None
0.20	0.413	0	15	30	15	40	0	None
0.28	0.743	0	10	25	30	35	0	None
0.32	0.806	0	0	10	20	35	35	None
0.50	0.454	0	10	20	10	60	0	None
0.30	1.120	0	10	40	30	10	10	None
0.72	0.721	0	0	30	30	30	10	None
0.42	0.531	0	25	35	40	0	0	None
0.42	0.464	0	30	35	35	0	0	None
0.36	0.412	0	10	40	30	20	0	None
0.30	0.326	0	20	30	30	20	0	None
0.16	0.360	0	10	35	55	0	0	1
0.12	0.250	0	0	40	50	10	0	2
0.26	0.650	0	20	35	25	20	0	None
0.30	0.250	0	20	35	45	0	0	1
0.20	0.360	0	50	25	25	0	0	1
0.08	0.140	0	5	20	70	5	0	3
0.20	0.570	0	5	30	35	30	0	None
0.46	0.780	0	5	20	30	20	25	None
0.52	0.510	0	10	25	25	25	15	None
0.48	0.720	0	0	15	65	20	0	None

0.62	0.370	0	5	20	60	15	0	None
0.54	0.280	0	5	35	50	10	0	None
1.00	0.490	0	0	25	25	45	5	None
0.20	0.500	0	5	50	45	0	0	None
0.46	0.260	0	0	50	50	0	0	None
0.38	0.250	0	0	45	50	5	0	None
0.34	0.260	0	10	20	70	0	0	
0.64	0.460	0	0	10	60	30	0	None
0.68	0.520	0	0	60	40	0	0	None
0.52	0.680	0	5	35	40	20	0	None
0.34	0.260	0	15	35	40	10	0	None
0.38	0.320	0	0	40	40	20	0	None
0.10	0.350	0	35	30	25	0	0	None
0.40	0.430	0	5	30	30	35	0	None
0.28	0.450	0	15	50	30	5	0	None
0.40	0.380	0	15	25	25	35	0	None
0.26	0.525	0	30	35	35	0	0	None
0.36	0.468	0	30	30	40	0	0	None
0.20	0.451	0	35	45	20	0	0	None
0.22	0.960	0	20	30	35	15	0	None
0.34	0.360	0	30	60	10	0	0	None
0.46	0.472	0	20	40	30	10	0	None
0.48	0.429	0	5	45	30	20	0	None
0.26	0.617	0	10	30	40	20	0	None
0.44	0.473	0	20	40	30	10	0	None
0.44	0.462	0	20	30	35	10	5	1
0.20	0.314	0	20	20	30	30	0	None
0.16	0.441	0	5	25	40	30	0	None
0.36	0.879	0	20	20	30	20	10	None
0.28	0.371	0	5	30	60	5	0	None
0.26	0.325	0	5	15	40	20	20	None
0.16	0.687	0	5	30	15	30	20	None
0.42	0.582	0	5	45	30	15	5	None
0.32	0.553	0	0	10	35	30	25	None
0.32	0.506	0	5	25	30	40	0	None
0.46	0.320	0	30	40	30	0	0	None
0.30	0.527	0	10	30	40	20	0	None
0.48	0.500	0	10	40	40	10	0	None
0.22	0.240	0	20	40	30	10	0	None
0.24	0.582	0	30	30	35	5	0	None
0.26	0.377	0	15	30	55	0	0	None
0.24	0.342	0	15	35	35	15	0	None
0.30	0.321	0	10	20	40	30	0	None
0.38	0.618	0	10	20	20	20	30	None
0.24	0.302	0	10	30	30	20	10	None
0.24	0.574	0	5	25	40	30	0	None
0.28	0.540	0	0	10	30	40	20	None

0.38	0.552	0	10	10	30	30	20	None
0.50	0.453	0	10	45	35	10	0	None
0.28	0.669	0	5	45	35	15	0	None
0.30	0.537	0	10	35	55	0	0	None
0.30	0.534	0	0	20	35	30	15	None
0.30	0.240	0	15	45	25	15	0	None
0.26	0.242	0	10	45	45	0	0	None
0.22	0.287	0	0	50	50	0	0	None
0.20	0.374	0	0	20	35	25	20	None
0.30	0.291	0	0	60	40	0	0	None
0.50	0.474	0	5	25	35	25	10	None
0.36	0.825	0	20	30	40	10	0	None
0.32	0.049	0	0	35	25	30	10	None
0.32	0.731	0	0	25	35	40	0	None
0.36	0.299	0	0	45	45	10	0	None
0.28	0.196	0	10	35	55	0	0	None
0.16	0.544	0	10	40	40	10	0	None
0.28	0.270	0	0	40	40	20	0	None
0.32	0.184	0	20	60	20	0	0	None
0.14	0.457	0	20	30	25	25	0	None
0.30	0.199	0	0	30	60	10	0	None
0.24	0.197	0	15	25	45	15	0	1, 3
0.20	0.153	0	10	30	40	20	0	None
0.26	0.335	0	5	30	65	0	0	None
0.24	0.252	0	10	45	30	15	0	1
0.26	0.174	0	20	30	45	5	0	None
0.32	0.214	0	10	30	60	0	0	None
0.30	0.133	0	5	45	35	15	0	None
0.30	0.288	0	15	40	30	15	0	None
0.12	0.299	0	20	60	20	0	0	None
0.24	0.375	0	10	30	40	20	0	None
0.12	0.694	0	0	15	45	10	30	1, 3
0.22	0.114	0	15	35	25	25	0	3
0.16	0.205	0	10	30	60	0	0	None
0.18	0.273	0	15	45	40	0	0	None
0.20	0.472	0	20	40	35	5	0	None
0.16	0.301	5	25	35	35	0	0	None
0.14	0.428	10	20	25	45	0	0	None
0.20	0.209	10	25	35	10	20	0	None
0.16	0.447	0	25	20	35	20	0	None
0.22	0.456	0	10	20	35	20	15	1
0.20	0.566	0	10	20	30	40	0	None
0.40	0.158	15	40	25	20	0	0	None
0.22	0.959	0	20	45	25	10	0	3
0.12	0.482	0	20	35	45	0	0	None
0.22	0.315	0	10	30	60	0	0	None
0.30	0.234	20	20	25	20	15	0	None

0.26	0.377	5	15	30	35	15	0	None
0.16	0.253	10	20	30	40	0	0	None
0.64	0.456	0	15	20	45	20	0	None
0.56	0.633	0	0	25	60	15	0	None
0.32	0.675	0	10	30	60	0	0	None
0.26	0.677	0	20	30	30	20	0	None
0.40	0.487	0	15	45	20	20	0	1
0.20	0.440	0	10	35	35	20	0	1
0.28	0.455	0	15	25	40	20	0	None
0.24	0.447	0	5	30	65	0	0	3
0.46	0.350	0	15	45	25	10	5	None
0.24	0.793	0	10	50	30	10	0	None
0.24	0.591	0	30	30	40	0	0	1
0.48	0.349	10	20	25	30	15	0	None
0.20	0.098	0	30	30	40	0	0	None
0.48	0.232	0	0	50	40	10	0	None
0.54	0.561	0	0	45	55	0	0	
0.60	0.564	0	0	0	60	40	0	None
0.96	0.314	0	0	50	40	10	0	None
0.82	0.349	0	0	30	55	15	0	None
0.58	0.870	0	5	50	40	5	0	None
0.64	0.785	0	5	40	55	0	0	None
0.22	0.183	0	20	20	60	0	0	None
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0.28	0.246	0	10	50	40	0	0	None
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0.10	0.313	0	20	30	45	0	5	None
0.16	0.261	0	10	40	45	5	0	None
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0.26	0.383	0	0	40	40	5	15	None
0.34	0.458	0	20	35	45	0	0	None
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0.36	0.540	0	10	30	40	20	0	None
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0.10	0.671	0	10	40	45	0	5	None
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0.30	0.293	0	25	25	40	10	0	None
0.34	0.195	0	0	40	50	10	0	
0.16	0.632	0	10	40	50	0	0	None
0.24	0.465	0	5	25	60	5	5	None
0.38	0.501	0	10	30	40	15	5	None

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0.54	0.652	0	15	15	60	10	0	None
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0.18	0.711	0	0	70	30	0	0	None
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0.32	0.866	0	0	50	45	0	5	None
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0.44	0.615	0	5	35	50	10	0	None
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