Bull Trout Population Status Assessment in the upper Oldman River Drainage, 2007
– Phase 1 – Data Summary Report

Brad Hurkett[1]

[1] Alberta Conservation Association,
Bag 3014, YPM Place 530-8 Street S,
Lethbridge, Alberta T1J 2J8

1.0 INTRODUCTION

Currently, bull trout (*Salvelinus confluentus*) distribution in Alberta is restricted to the upper Peace, Athabasca, North Saskatchewan, and the South Saskatchewan River basins. The species has declined in both distribution and abundance since the early 1900s. The decline is generally attributed to human activity including angling pressure, habitat degradation and fragmentation, migratory barriers, and the introduction of non-native species. As a result of the decline in abundance, the species is now ranked as "sensitive" in Alberta and "threatened" under the Endangered Species Act throughout its range in the US (lower 48 states).

Bull trout are known to exhibit 3 main life history strategies: resident, fluvial, and adfluvial. Resident bull trout populations reside within the tributary in which they were reared; fluvial populations spawn in tributaries, but reside in mainstem rivers; and adfluvial populations spawn in the key tributaries, but reside in lakes or reservoirs. As a result of these life history strategies, bull trout have complex habitat requirements and in some cases large home ranges (Post and Johnston 2002). In some drainages, both the resident and migratory life history forms occur. Historically, where resident and migratory forms coexisted within the same drainage, the migratory form was dominant (Fredenberg et al. 2005). In addition, the evolutionary history of bull trout indicates that as an apex predator species the migratory life form was a highly successful strategy (Whitesel et al. 2004). It is suspected that bull trout in the upper Oldman drainage exhibit at least 2 of the 3 life strategies above.

Currently, significant human activity is occurring within the upper Oldman drainage, as well as other East slope drainages. In addition, bull trout distribution within the Oldman Drainage has declined to 33% of historical range, largely since the 1950s (Fitch 1997). Unfortunately, fisheries managers are tasked with managing a species with insufficient data. As a result, a bull trout population assessment is required to determine the status of the species within the drainage.

The Alberta Conservation Association (ACA) is initiating a long-term bull trout (*Salvelinus confluentis*) population assessment within the upper Oldman (UOM) River drainage to more clearly define bull trout status in the drainage and to also aid in

directing bull trout conservation and management in the future. The main objective of the study is to assess the population status of adult migratory bull trout in the UOM river drainage. Phase 1 (2007) focused on collecting preliminary data on adult migratory bull trout from Hidden Creek by intercepting both pre and post-spawning bull trout in conduit fish traps.

In addition, Phase 1 of the UOM bull trout population assessment has coincided with the 2006 and 2007 UOM cutthroat trout population assessment. Coincidental catches of bull trout captured during the cutthroat trout population assessment assisted in the identification of spawning and rearing streams. The 2006 UOM cutthroat trout population assessment and previous redd survey results identified Hidden Creek as a major spawning tributary due to the high density of adult migratory bull trout that were captured at numerous sites throughout the stream. Sites sampled in 2007, suggest that Dutch Creek, Racehorse Creek and the Livingstone River are also key spawning tributaries for migratory bull trout. As a result efforts will focus on intercepting spawning bull trout in these tributaries in 2008. Future efforts (2009 and 2010) will focus on the spatial and temporal identification of spawning areas, migration timing, movement corridors, and overwintering habitat.

2.0 METHODS AND MATERIALS

A fish trap was placed in Hidden Creek to intercept spawning bull trout (Appendix 1). The fish trap consisted of a bi-directional capture system to intercept fish travelling upstream (pre-spawn) as well as fish travelling downstream (post-spawn). The fish trap used to capture adult bull trout was comprised of aluminium conduit tubing reinforced with aluminium framing and steel A-frame stands. Holding cages are positioned near the middle of the stream with wings attached to the both sides at an angle extending toward each stream bank. The wings produce a V-shape that act as a funnel and lead migrating fish into the small entrance hole of the holding cage that traps the fish.

The Hidden Creek fish trap was located approximately 100 m upstream from the confluence of the Oldman River (Appendix 1). The trap was positioned in a large pool

produced by a bedrock outcropping. This site was an optimal trap location that sustained fish by providing a continual aerated stream flow and suitable water depths.

To minimize mortality and reduce stress on captured fish, the fish trap was checked each morning. Captured fish were scanned with the Passive Integrated Transponders (PIT) tag scanner to identify if the fish was previously captured. Newly captured fish were immersed in a clove oil solution bath (10 drops clove oil/10 mL of pure 100% ethanol/10 L water) to anesthetize the individual for ease of handling and reduced stress to the fish.

Fork lengths, total lengths (mm) and weights (g) were measured and recorded for each initially captured fish. Sex was determined by gently stripping the abdomen of each fish and observing the extracted reproductive material. Secondary characteristics, such as the presence of a kype (hooked lower mandible) or orange colouration of the abdomen (both are male characteristics), were used to identify the sex of spent individuals or to those who failed to produce any reproductive material.

PIT tags were used to mark individual adult bull trout ($\geq$300 mm) with a unique 16 digit numeric code marker to monitor fish movement. Recaptured fish can be referenced in the database to track their movements and enables researchers to identify the different life history strategies within the UOM bull trout population.

Prior to injection, PIT tags were sterilized (ethanol) and scanned to keep record of the unique identification code. A sterilized 12-gauge needle was used to implant PIT tags into the musculature of each adult fish at the base of the dorsal fin near the posterior end. To ensure each tag was retained and the unique code was recorded correctly, each fish was scanned a second time. Following processing, bull trout were revived and released back in the direction the individual was heading.

Electrofishing was the primary capturing technique used in the UOM cutthroat trout population assessment to immobilize and capture all fish species that were encountered at each sample site. Adult migratory bull trout captured from the UOM cutthroat trout population assessment were processed and included for both UOM fisheries studies.

Angling was a third capturing technique that captured and tagged adult bull trout in the UOM drainage. Angling was focused in the plunge pools at Gap Falls and Waldron Falls where bull trout were believed to be staging prior to spawning.

3.0 RESULTS

3.1 Fish Trap

The fish trap was installed in Hidden Creek and became operational on July 30, 2007. The trap remained in Hidden Creek for a period of 64 days before dismantling on Oct 2, 2007. The trap was removed once bull trout were not captured over a multiple day period. A total of 125 bull trout were captured in the trap, 122 of which were tagged. A sub adult (< 300 mm) and 2 mortalities were not tagged. The catch per unit effort (CPUE), for newly captured fish was approximately 1.95 bull trout per day (n = 125).

The fork length frequency for all fish captured in the trap ranged from 266 mm to 760 mm, with an average of 549 $\pm$ 8.85 mm (n = 125) (Figure 1). The average weight for all sampled bull trout was 1752 $\pm$ 76.25 g and ranged between 202 to 4000 g (Appendix 2).

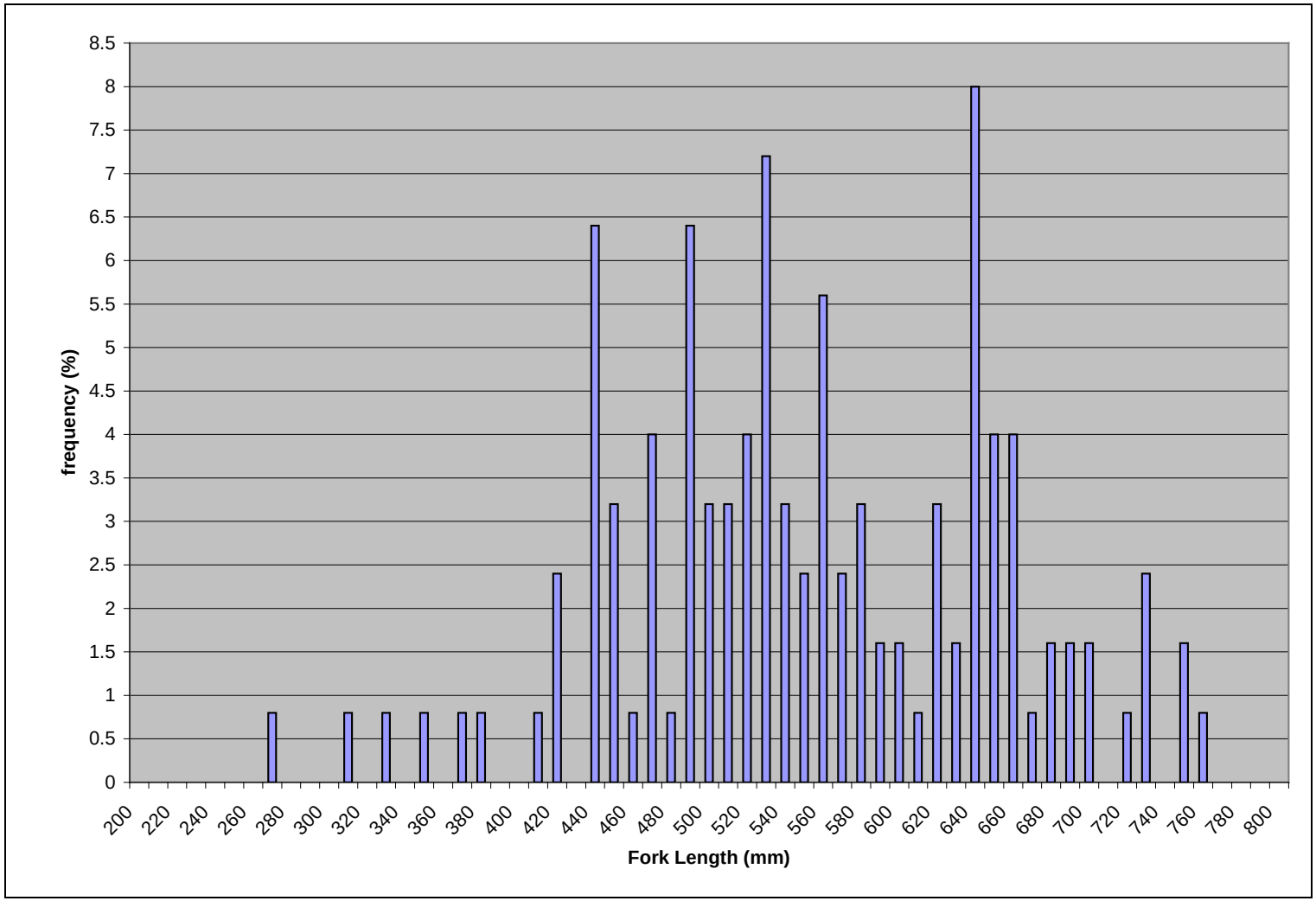

Figure 1. Fork length distribution of bull trout caught in the fish trap at Hidden Creek, 2007 (n = 125)

3.2 Pre and post-spawning bull trout

Distinguishing each fish as pre-spawning or post-spawning fish was obvious. Fish that were ripe and captured in early August heading upstream were classified as pre-spawning fish and spent fish captured near the end of September migrating downstream were classified as post-spawning fish (Appendix 2).

Figure 2 represents a capture frequency summary that illustrates bull trout spawning movements over time in relation to water temperature. Post-spawning fish represented the majority of the bull trout catch at 87.2% (n = 109), compared to 12.8% (n = 16) of the pre-spawning bull trout; the two mortalities were included in the upstream total. A total of 18 individuals comprising 6 upstream fish and 12 downstream fish were caught during the month of August. The month of September totalled 107 fish, of which 97 individuals were caught in the downstream direction while 10 were captured heading upstream.

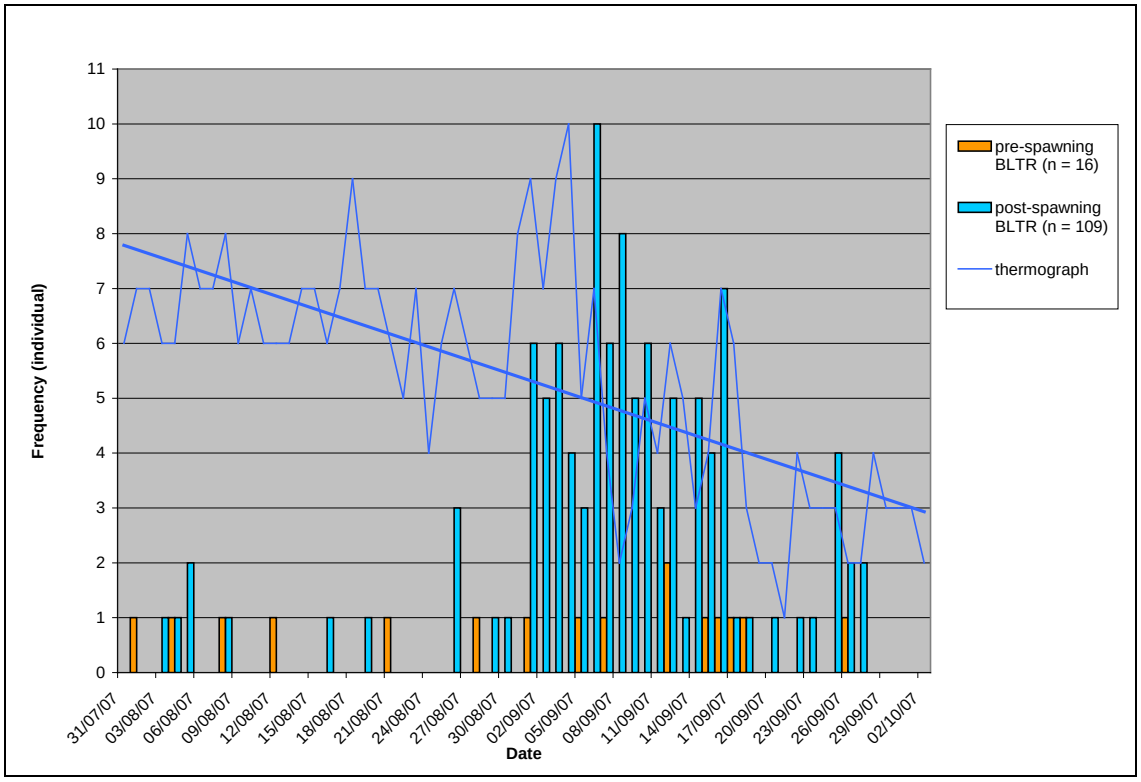

Figure 2. Proportion of pre vs. post-spawning bull trout over the 2007 capture period in relation to water temperature (recaptured fish are excluded, n = 125)

A major downstream movement occurred around September 1, 2007 when the overall water temperature dropped between 5 and 6 ^{o}C. Fewer individuals were captured as the water temperature cooled, suggesting the completion of the bull trout spawning in Hidden Creek. In addition, 55% (n = 69) of the captured bull trout had migrated upstream prior to the installment of the fish trap, which indicated that the spawning fish migrate upstream to these spawning streams earlier than anticipated (Appendix 3).

3.3 2007 UOM Cutthroat Study (Phase III) bull trout

During the 2007 CTTR population assessment, an additional 42 adult were captured and tagged from the period of July 11 to September 26, 2007 (Appendix 2). Fork lengths ranged from 279 and 740 mm and averaged 485 $\pm$ 19.95 mm. Mean weight was 1403 $\pm$ 156.11 g with a minimum weight of 218 g and a maximum weight of 4075 g (Appendix 5).

In addition, an individual adult bull trout was initially captured in the Hidden Creek fish trap (PIT tag # 985161000768487) upstream on Aug 3, 2007. The same fish was recaptured downstream on September 7, 2007 and recaptured a final time in the Livingstone River on Sep 25, 2007 (2007 UOM CTTR site LSMRMS07 mark run).

3.4 2007 bull trout test angling

The 2007 test angling captured and tagged a total of 25 adult bull trout during 4 different angling events between July 13 and Aug 3, 2007. Three of the four angling efforts were located at the Gap falls (11U 690303 5527932), while the remaining effort was focused at Waldron falls (11U 706783 5519736). The fork length average was 449 $\pm$ 12.34 mm (n = 25) with a minimum fork length of 363 mm and maximum fork length of 578 mm. The weight range was 350 to 1900 g and averaged 888 $\pm$ 87.13 g (Appendix 6).

3.5 Overall 2007 bull trout study results

Figure 3 is a fork length frequency exhibiting the size variation of captured and tagged bull trout from all three capturing methods in the UOM river watershed in 2007. Test angling captured a smaller size range of bull trout than the other two capturing techniques.

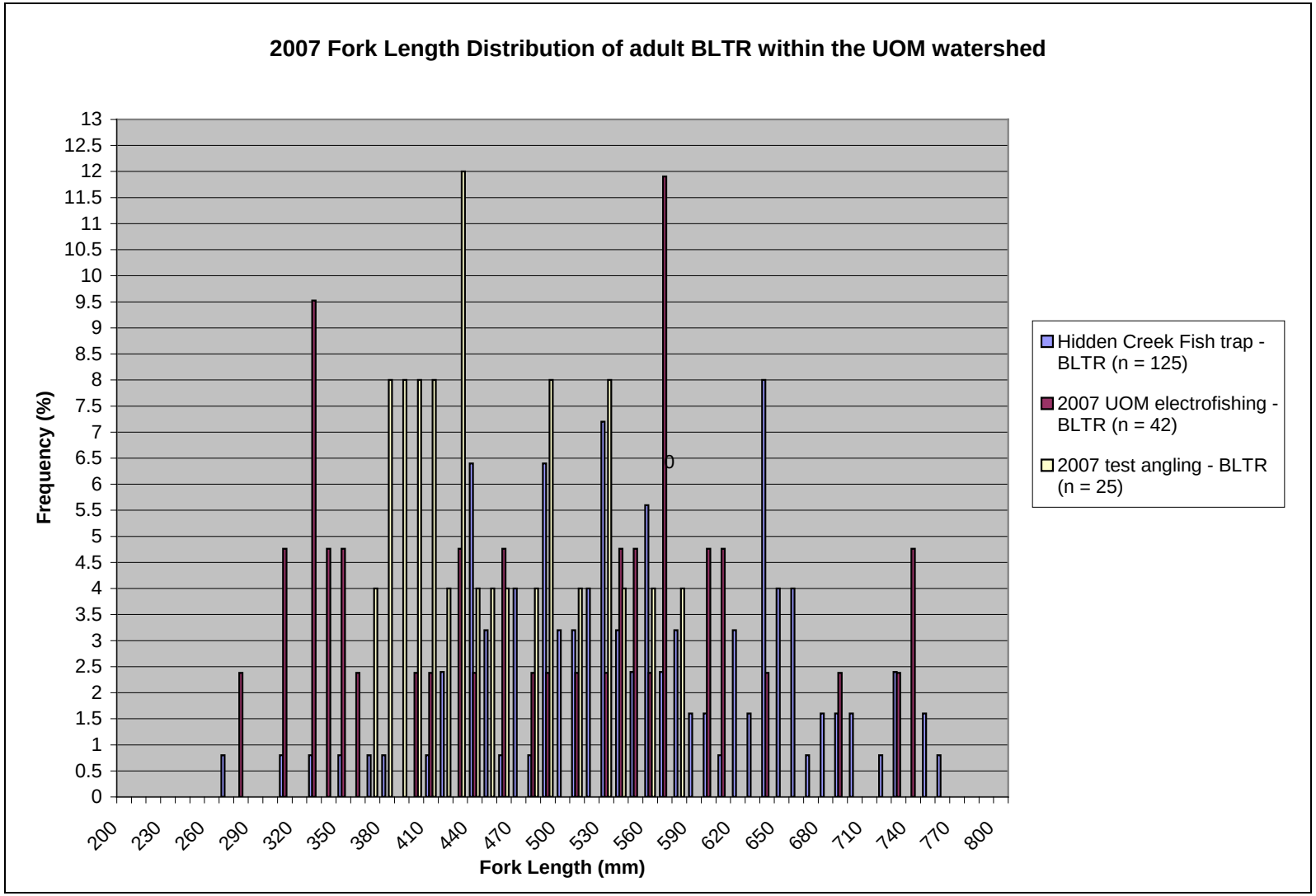

Figure 3. Fork length distribution for all UOM bull trout captured in 2007.

4.0 LITERATURE CITED

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Whitesel, T.A., and 7 coauthors. 2004. Bull trout recovery planning: A review of the science associated with population structure and size. Science Team Report #2004-01, U.S. Fish and Wildlife Services, Region 1, Portland, Oregon.

5.0 APPENDICES

Appendix 1: 2007 Hidden Creek BLTR Fish Trap (11U 684392 5530797)

Appendix 2. Summary Data for the 2007 BLTR Monitoring Study (Phase I)

Hidden Creek Fish Trap adult BLTR

	FL	TL	Weight	N (all)	N (tagged)	Capture period
max	760.00	780.00	4000.00	125	122	July 31 - Sep 25, 2007
min	266.00	284.00	202.00			
average	548.62	567.45	1752.26			

2 Mortalities and 1 sub adult

Initial BLTR Capture	% proportion US	% proportion DS
	39.2	60.8
Final BLTR Capture	% proportion US	% proportion DS
	12.8	87.2

UOM CTTR Study adult BLTR

	FL	TL	Weight	N (all)	N (tagged)	Capture period
max	740.00	767.00	4075.00	42	41	July 11 - Sep 26, 2007
min	279.00	294.00	218.00			
average	484.64	504.26	1403.00			

BLTR PIT Tag # 985161000775282 (OM03-Dutch Creek) incorrect PIT tag # for that individual

Test Angling (GAP Falls & Waldron Falls) adult BLTR

	FL	TL	Weight	N (all)	N (tagged)	Capture period
max	578.00	580.00	1900.00	25	25	July 13 - Aug 3, 2007
min	363.00	378.00	350.00			
average	448.36	467.16	888.00			

2007 Overall adult BLTR captured in the UOM watershed

	FL	TL	Weight	N (all)	N (tagged)	Capture period
max	760.00	780.00	4075.00	192	188	July 11 - Sep 26, 2007
min	266.00	284.00	202.00			
average	521.57	540.57	1562.34			

Appendix 3. 2007 Hidden Creek fish trap data final capture dates

Initially tagged DS BLTR
Initially tagged US BLTR
Recaptured US fish from US (INIT. TAG)
Recaptured DS fish from DS (INIT. TAG)

Upstream							Downstream						
Date	#	Spp.	FL (mm)	TL (mm)	Weight (g)	PIT Tag #	Date	#	Spp.	FL (mm)	TL (mm)	Weight (g)	PIT Tag #
31-Jul-07							31-Jul-07						
01-Aug-07	1	BLTR	635.00	657.00	3000	no tag	01-Aug-07						
02-Aug-07							02-Aug-07						
03-Aug-07							03-Aug-07	1	BLTR	467.00	506.00	1300	985161000784908
04-Aug-07	2	BLTR	461.00	480.00	1050	985161000769680	04-Aug-07	2	BLTR	372.00	393.00	590	985161000947201
05-Aug-07							05-Aug-07	3	BLTR	436.00	455.00	900	985161000767271
								4	BLTR	508.00	530.00	1600	985161000785676
06-Aug-07							06-Aug-07						
07-Aug-07							07-Aug-07						
08-Aug-07	3	BLTR	545.00	570.00	1625	985161000763886	08-Aug-07	5	BLTR	566.00	577.00	2050	985161000785545
09-Aug-07							09-Aug-07						
10-Aug-07							10-Aug-07						
11-Aug-07							11-Aug-07						
12-Aug-07	4	BLTR	330.00	349.00	384	985161000782186	12-Aug-07						
13-Aug-07							13-Aug-07						
14-Aug-07							14-Aug-07						
15-Aug-07							15-Aug-07						
16-Aug-07							16-Aug-07	6	BLTR	520.00	540.00	1325	985161000781717
17-Aug-07							17-Aug-07						
18-Aug-07							18-Aug-07						
19-Aug-07							19-Aug-07	7	BLTR	635.00	655.00	2600	985161000767607
20-Aug-07							20-Aug-07						
21-Aug-07	5	BLTR	495.00	515.00	1165	985161000780667	21-Aug-07						
22-Aug-07							22-Aug-07						
23-Aug-07							23-Aug-07						
24-Aug-07							24-Aug-07						
25-Aug-07							25-Aug-07						
26-Aug-07							26-Aug-07		BLTR	555.00	570.00	2000	985161000771528
								8	BLTR	435.00	459.00	850	985161000776022
								9	BLTR	434.00	453.00	800	985161000776022
27-Aug-07							27-Aug-07						
	6	BLTR	350.00	366.00		no tag	28-Aug-07						

Appendix 3. ctd.

Date	#	Spp.	FL (mm)	TL (mm)	Weight (g)	PIT Tag #	Date	#	Spp.	FL (mm)	TL (mm)	Weight (g)	PIT Tag #
29-Aug-07							29-Aug-07	11	BLTR	672.00	703.00	2800	985161000838430
30-Aug-07							30-Aug-07	12	BLTR	650.00	671.00	2850	985161000786303
31-Aug-07							31-Aug-07						
01-Sep-07	7	BLTR	528.00	552.00	1550	985161000784844	01-Sep-07	13	BLTR	678.00	695.00	2800	985161000767716
								14	BLTR	531.00	549.00	1350	985161000785008
01-Sep-07							01-Sep-07	16	BLTR	528.00	547.00	1350	985161000784132
								17	BLTR	575.00	596.00	1800	985161000783424
								18	BLTR	485.00	506.00	1200	985161000784785
02-Sep-07							02-Sep-07	19	BLTR	692.00	710.00	2850	985161000785047
								20	BLTR	632.00	650.00	2400	985161000784312
								21	BLTR	595.00	617.00	2050	985161000784772
								22	BLTR	528.00	551.00	1250	985161000782792
								23	BLTR	493.00	510.00	1150	985161000836920
03-Sep-07							03-Sep-07	24	BLTR	725.00	747.00	3950	985161000775802
								25	BLTR	577.00	595.00	1650	985161000783347
								26	BLTR	468.00	490.00	1100	985161000783507
								27	BLTR	636.00	650.00	2300	985161000783160
								28	BLTR	560.00	579.00	1550	985161000785526
								29	BLTR	618.00	635.00	2400	985161000781889
04-Sep-07							04-Sep-07	30	BLTR	649.00	670.00	2650	985161000783151
								31	BLTR	600.00	624.00	2150	985161000778458
								32	BLTR	308.00	324.00	230	985161000766307
								33	BLTR	660.00	670.00	2400	985161000775282
05-Sep-07	8	BLTR	648.00	655.00	3200	985161000783560	05-Sep-07	34	BLTR	584.00	609.00	1700	985161000780797
								35	BLTR	513.00	528.00	1225	985161000781084
								36	BLTR	512.00	545.00	1325	985161000764560
06-Sep-07							06-Sep-07	37	BLTR	651.00	669.00	2325	985161000781080
								38	BLTR	487.00	495.00	1125	985161000766177
								39	BLTR	527.00	536.00	1275	985161000768609
								40	BLTR	650.00	674.00	2175	985161000781197
								41	BLTR	721.00	744.00	3375	985161000784309
								42	BLTR	568.00	578.00	1500	985161000765956
								43	BLTR	546.00	557.00	1475	985161000826518
								44	BLTR	521.00	541.00	1500	985161000784184
								45	BLTR	500.00	518.00	1200	985161000785659
								46	BLTR	631.00	651.00	2450	985161000765444
07-Sep-07	9	BLTR	420.00	440.00	900	985161000785116	07-Sep-07	47	BLTR	578.00	598.00	1800	985161000764561
								48	BLTR	510.00	529.00	1225	985161000784147
								49	BLTR	620.00	635.00	2400	985161000768487

Appendix 3. ctd.

Date	#	Spp.	FL (mm)	TL (mm)	Weight (g)	PIT Tag #	Date	#	Spp.	FL (mm)	TL (mm)	Weight (g)	PIT Tag #
08-Sep-07							08-Sep-07	53	BLTR	530.00	550.00	1500	985161000780599
								54	BLTR	540.00	555.00	1600	985161000767031
								55	BLTR	450.00	470.00	1000	985161000777247
								56	BLTR	540.00	552.00	1600	985161000824256
								57	BLTR	439.00	445.00	605	985161000778076
								58	BLTR	435.00	455.00	800	985161000768664
								59	BLTR	640.00	660.00	2550	985161000768660
08-Sep-07							08-Sep-07	62	BLTR	460.00	480.00	1100	985161000782818
								63	BLTR	481.00	500.00	1200	985161000782108
								64	BLTR	505.00	527.00	1400	985161000778582
								65	BLTR	499.00	515.00	1250	985161000779074
10-Sep-07							10-Sep-07	66	BLTR	716.00	722.00	3250	985161000766708
								67	BLTR	551.00	574.00	1600	985161000764574
								68	BLTR	562.00	573.00	1375	985161000767070
								69	BLTR	551.00	565.00	1275	985161000778068
								70	BLTR	482.00	498.00	925	985161000785382
								71	BLTR	558.00	577.00	1425	985161000765227
11-Sep-07							11-Sep-07	72	BLTR	510.00	528.00	1250	985161000763227
								73	BLTR	551.00	569.00	1475	985161000765836
								74	BLTR	440.00	461.00	800	985161000784291
12-Sep-07	10	BLTR	439.00	451.00	825	985161000785226	12-Sep-07	75	BLTR	584.00	595.00	1975	985161000767720
	11	BLTR	418.00	438.00	717	985161000778598		76	BLTR	438.00	462.00	775	985161000781328
								77	BLTR	481.00	487.00	1000	985161000783606
								78	BLTR	635.00	660.00	2400	985161000768305
								79	BLTR	520.00	540.00	1500	985161000783267
13-Sep-07							13-Sep-07	80	BLTR	535.00	560.00	1600	985161000780866
14-Sep-07							14-Sep-07	81	BLTR	627.00	653.00	2300	985161000779064
								82	BLTR	640.00	660.00	2900	985161000782425
								83	BLTR	515.00	535.00	1500	985161000785429
								84	BLTR	690.00	712.00	3400	985161000784739
								85	BLTR	441.00	464.00	825	985161000768802
15-Sep-07	12	BLTR	485.00	505.00	1250	985161000781083	15-Sep-07	86	BLTR	441.00	451.00	863	985161000762880
								87	BLTR	723.00	745.00	2750	985161000784253
								88	BLTR	530.00	553.00	1500	985161000784254
								89	BLTR	666.00	681.00	2525	985161000764581
16-Sep-07	13	BLTR	542.00	563.00	1550	985161000776992	16-Sep-07	90	BLTR	760.00	780.00	3975	985161000763575
								91	BLTR	489.00	512.00	1000	985161000777701
								92	BLTR	605.00	631.00	2000	985161000783914

Appendix 3. ctd.

Date	#	Spp.	FL (mm)	TL (mm)	Weight (g)	PIT Tag #	Date	#	Spp.	FL	TL	Weight	PIT Tag #
16-Sep-							16-Sep-07	93	BLTR	485.00	502.00	1028	985161000785281
								94	BLTR	525.00	548.00	1400	985161000778831
								95	BLTR	695.00	721.00	3250	985161000776503
								96	BLTR	650.00	678.00	2400	985161000822473
17-Sep-	14	BLTR	576.00	605.00	1950	985161000777710	17-Sep-07	97	BLTR	445.00	462.00	700	985161000765684
18-Sep-	15	BLTR	465.00	480.00	950	985161000762884	18-Sep-07	98	BLTR	370.00	390.00	485	985161000780788
19-Sep-							19-Sep-07						
20-Sep-							20-Sep-07	99	BLTR	405.00	423.00	636	985161000779744
21-Sep-							21-Sep-07						
22-Sep-							22-Sep-07	100	BLTR	266.00	284.00	202	no tag
23-Sep-							23-Sep-07	101	BLTR	418.00	440.00	875	985161000764719
								102	BLTR	439.00	451.00	825	985161000785226
24-Sep-							24-Sep-07						
								103	BLTR	748.00	754.00	3375	985161000838554
26-Sep-	16	BLTR	652.00	668.00	2575	985161000784819	26-Sep-07	106	BLTR	685.00	705.00	4000	985161000765565
								107	BLTR	660.00	685.00	3025	985161000764702
27-Sep-							27-Sep-07	108	BLTR	618.00	630.00	2500	985161000764974
								109	BLTR	640.00	655.00	2375	985161000783851
28-Sep-							28-Sep-07						
29-Sep-							29-Sep-07						
30-Sep-							30-Sep-07						
30-Sep-							30-Sep-07						
30-Sep-							30-Sep-07						
01-Oct-07							01-Oct-07						
02-Oct-07							02-Oct-07						

Appendix 4. 2007 Hidden Creek Fish Trap Raw Data

Date checked	Time Lifted	Water Temp. (°C)	Trap Direction	Species	Fork Length (mm)	Total Length (mm)	Weight (g)	Sex	Maturity	PIT Tag Number	Comments
31-Jul-07	10:15	6	Upstream	BLTR	535.00	560.00	1600	U	Mature	985161000780866	
01-Aug-07	9:00	7	Upstream	BLTR	685.00	705.00	4000	U	Mature	985161000765565	
	9:10		Upstream	BLTR	635.00	657.00	3000	U	Mature		Mortality - No tag
	9:20		Upstream	CTTR	320.00	335.00	421	U			
02-Aug-07	10:15	7	Upstream	BLTR	640.00	660.00	2900	M	Ripe	985161000782425	
	10:20		Upstream	BLTR	508.00	530.00	1600	U	Mature	985161000785676	
	10:30		Upstream	CTTR	335.00	346.00	450	U			
03-Aug-07	9:24	7	Upstream	BLTR	620.00	635.00	2400	U	Mature	985161000768487	
	9:45		Upstream	BLTR	441.00	451.00	863	U	Mature	985161000762880	
	10:06		Upstream	BLTR	372.00	393.00	590	U	Mature	985161000947201	
	10:21		Downstream	BLTR						985161000785676	Recapture
	10:48		Downstream	BLTR	467.00	506.00	1300	U	Mature	985161000784908	
04-Aug-07	9:50	6	Upstream	BLTR	530.00	548.00	1750	U	Mature	985161000856052	
	10:12		Upstream	BLTR	505.00	527.00	1400	U	Mature	985161000778582	
	10:15		Upstream	BLTR	540.00	552.00	1600	U	Mature	985161000824256	
	10:25		Upstream	BLTR	461.00	480.00	1050	U	Mature	985161000769680	
	10:37		Downstream	BLTR	420.00	440.00	900	U	Mature	985161000785116	
	10:47		Downstream	BLTR						985161000785676	Recapture
	10:47		Downstream	BLTR						985161000762880	Recapture
	10:50		Downstream	BLTR						985161000947201	Recapture
	10:54		Downstream	CTTR	320.00	335.00	500	U			
05-Aug-07	11:06	6	Downstream	BLTR						985161000762880	Recapture
	11:08		Downstream	BLTR						985161000778582	Recapture
			Downstream	BLTR						985161000785676	Recapture
	11:09		Downstream	BLTR	436.00	455.00	900	U	Mature	985161000767271	
06-Aug-07	10:07	7									

Appendix 4. ctd.

Date checked	Time Lifted	Water Temp. (°C)	Trap Direction	Species	Fork Length (mm)	Total Length (mm)	Weight (g)	Sex	Maturity	PIT Tag Number	Comments
07-Aug-07	9:40	7	Downstream	BLTR	418.00	438.00	717	U	Mature	985161000778598	
	9:40		Upstream	BLTR	566.00	577.00	2050	M	Mature	985161000785545	
	9:45		Downstream	CTTR	331.00	345.00	424	U			
08-Aug-07	9:43	8	Downstream	BLTR						985161000785545	Recapture
	9:45		Downstream	BLTR						985161000778598	Recapture
			Upstream	BLTR	545.00	570.00	1625	M	Mature	985161000763886	
	9:51		Upstream	BLTR	542.00	563.00	1550	M	Mature	985161000776992	
09-Aug-07	9:43	6									
10-Aug-07	9:10	7	Upstream	BLTR	418.00	440.00	875	U	Mature	985161000764719	
11-Aug-07	9:00	6									
12-Aug-07	9:15	6	Upstream	BLTR	330.00	349.00	384	U	Unknown	985161000782186	
13-Aug-07	9:30	6	Upstream	BLTR	635.00	660.00	2400	U	Mature	985161000768305	
14-Aug-07	9:15	7	Upstream	CTTR	298.00	310.00	292				
			Downstream	CTTR							escaped
15-Aug-07	10:32	7	Upstream	BLTR	435.00	455.00	800	U	Mature	985161000768664	
	10:37		Upstream	BLTR	440.00	461.00	800	U	Mature	985161000784291	
	10:40		Upstream	BLTR	439.00	445.00	605	U	Mature	985161000778076	
	10:42		Upstream	BLTR	520.00	540.00	1325	U	Mature	985161000781717	
16-Aug-07	9:10	6	Downstream	BLTR						985161000781717	Recapture
	9:12		Upstream	BLTR	525.00	548.00	1400	U	Mature	985161000778831	
17-Aug-07	9:30	6	Upstream	BLTR	513.00	528.00	1225	M	Ripe	985161000781084	
18-Aug-07	12:00	9	Upstream	BLTR	575.00	596.00	1800	F	Ripe	985161000783424	
	12:05		Upstream	BLTR	650.00	671.00	2850	M	Ripe	985161000786303	
19-Aug-07	9:45	7	Downstream	BLTR	635.00	655.00	2600	M	Ripe	985161000767607	
	9:50		Downstream	BLTR						985161000783424	Recapture
	9:50		Downstream	BLTR						985161000786303	Recapture

Appendix 4. ctd.

Date checked	Time Lifted	Water Temp. (°C)	Trap Direction	Species	Fork Length (mm)	Total Length (mm)	Weight (g)	Sex	Maturity	PIT Tag Number	Comments
19-Aug-07	9:55	7	Downstream	BLTR	640.00	660.00	2550	M	Ripe	985161000768660	
	10:00		Upstream	BLTR	695.00	721.00	3250	M	Ripe	985161000776503	
20-Aug-07	10:15	7	Downstream	BLTR						985161000776503	Recapture
	10:17		Upstream	BLTR						985161000768660	Recapture
	10:20		Upstream	BLTR	620.00	634.00	2300	F	Ripe	985161000765599	
	10:25		Upstream	BLTR	499.00	515.00	1250	F	Ripe	985161000779074	
	10:30		Upstream	MNWH							escaped
21-Aug-07	9:10	6	Downstream	BLTR						985161000765599	Recapture
	9:15		Downstream	BLTR	618.00	635.00	2400	F	Ripe	985161000781889	
	9:21		Upstream	BLTR	495.00	515.00	1165	M	Ripe	985161000780667	
	9:30		Upstream	MNWH	390.00	413.00	531	U			
	9:35		Upstream	MNWH							escaped
22-Aug-07	9:15	5	Downstream	BLTR						985161000778831	Recapture
			Downstream	CTTR	355.00	369.00	528	U			
			Upstream	MNWH	245.00	266.00	205	U			
23-Aug-07	9:00	7	Upstream	BLTR	660.00	685.00	3025	M	Ripe	985161000764702	
24-Aug-07	8:45	4	Upstream	BLTR	435.00	459.00	850	M	Ripe	985161000776022	
25-Aug-07	9:30	6	Upstream	BLTR	308.00	324.00	230	M	Ripe	985161000766307	
	9:40		Downstream	CTTR	323.00	335.00	401	U			
26-Aug-07	9:20	7	Downstream	BLTR	660.00	670.00	2400	M	Ripe	985161000775282	
	9:25		Downstream	BLTR	434.00	453.00	800	M	Ripe	985161000776022	
	9:30		Downstream	BLTR						985161000766307	Recapture
	9:35		Downstream	BLTR	555.00	570.00	2000	M	Ripe	985161000771528	
	9:45		Upstream	BLTR						985161000776503	Recapture
	9:50		Upstream	BLTR	515.00	535.00	1500	F	Ripe	985161000785429	
27-Aug-07	10:30	6	Upstream	BLTR	618.00	630.00	2500	M	Ripe	985161000764974	

Appendix 4. ctd.

Date checked	Time Lifted	Water Temp. (°C)	Trap Direction	Species	Fork Length (mm)	Total Length (mm)	Weight (g)	Sex	Maturity	PIT Tag Number	Comments
27-Aug-07	10:40	6	Upstream	BLTR	520.00	540.00	1500	M	Ripe	985161000783267	
28-Aug-07	9:30	5	Upstream	BLTR	672.00	703.00	2800	M	Ripe	985161000838430	
	9:35		Upstream	BLTR	690.00	712.00	3400	M	Ripe	985161000784739	
	9:40		Upstream	BLTR	350.00	366.00		M	Mature		Mortality - (depredated) - no weight
29-Aug-07	9:30	5	Downstream	BLTR						985161000838430	Recapture
	9:40		Upstream	BLTR	560.00	580.00	2000	M	Ripe	985161000765100	
30-Aug-07	8:15	5	Downstream	BLTR						985161000786303	Recapture
	8:20		Downstream	BLTR						985161000765100	Recapture
	8:25		Downstream	MNWH	290.00	314.00	303	U			
31-Aug-07	9:15	8	Upstream	BLTR	485.00	506.00	1200	M	Ripe	985161000784785	
	9:20		Upstream	BLTR						985161000783424	Recapture
01-Sep-07	12:30	9	Upstream	BLTR	528.00	552.00	1550	M	Ripe	985161000784844	
	12:35		Upstream	BLTR						985161000775282	Recapture
	12:42		Upstream	BLTR	485.00	505.00	1250	U	Mature	985161000781083	Lower caudal fin was clipped
	13:02		Downstream	BLTR	678.00	695.00	2800	F	Spent	985161000767716	
	13:10		Downstream	BLTR						985161000768660	Recapture
	13:15		Downstream	BLTR						985161000783424	Recapture
	13:20		Downstream	BLTR	531.00	549.00	1350	F	Spent	985161000785008	Marked adipose and dorsal fin
	13:25		Downstream	BLTR	475.00	497.00	1000	F	Spent	985161000765448	
	13:30		Downstream	BLTR	528.00	547.00	1350	F	Spent	985161000784132	
	13:35		Downstream	BLTR						985161000784785	Recapture
02-Sep-07	11:45	7	Upstream	BLTR	648.00	655.00	3200	F	Spent	985161000783560	
	12:00		Upstream	BLTR						985161000768660	Recapture
	12:05		Upstream	BLTR						985161000781889	Recapture
	12:15		Downstream	BLTR	692.00	710.00	2850	F	Spent	985161000785047	
	12:25		Downstream	BLTR	632.00	650.00	2400	F	Spent	985161000784312	

Appendix 4. ctd.

Date checked	Time Lifted	Water Temp. (°C)	Trap Direction	Species	Fork Length (mm)	Total Length (mm)	Weight (g)	Sex	Maturity	PIT Tag Number	Comments
02-Sep-07	12:30	7	Downstream	BLTR						985161000781083	Recapture
	12:45		Downstream	BLTR	595.00	617.00	2050	M	Spent	985161000784772	
	12:55		Downstream	BLTR	528.00	551.00	1250	U	Mature	985161000782792	
	13:05		Downstream	BLTR						985161000775282	Recapture
	13:15		Downstream	BLTR	493.00	510.00	1150	F	Spent	985161000836920	
	13:20		Upstream	BLTR						985161000778582	
	13:35		Upstream	BLTR	500.00	518.00	1200	M	Ripe	985161000785659	
	13:40		Downstream	CTTR							Recapture
	13:45		Downstream	CTTR	314.00	328.00	353				
03-Sep-07	12:45	9	Upstream	BLTR						985161000775282	Recapture
	12:50		Downstream	BLTR	725.00	747.00	3950	M	Ripe	985161000775802	
	12:55		Downstream	BLTR						985161000783560	Recapture
	13:10		Downstream	BLTR	577.00	595.00	1650	F	Spent	985161000783347	
	13:30		Downstream	BLTR	468.00	490.00	1100	M	Mature	985161000783507	
	13:35		Downstream	BLTR	636.00	650.00	2300	F	Spent	985161000783160	
	13:40		Downstream	BLTR						985161000781889	Recapture
	13:45		Downstream	BLTR						985161000785659	Recapture
	13:50		Downstream	BLTR	560.00	579.00	1550	F	Spent	985161000785526	
04-Sep-07	13:30	10	Upstream	BLTR						985161000765100	Recapture
	13:40		Upstream	BLTR						985161000765599	PIT tagged twice (aka 985161000856311)
				BLTR						985161000856311	PIT tagged twice (aka 985161000765599)
	13:45		Upstream	BLTR	512.00	545.00	1325	M	Ripe	985161000764560	
	13:46		Downstream	BLTR						985161000766307	Recapture
	13:55		Downstream	BLTR						985161000775282	Recapture
	14:00		Downstream	BLTR	649.00	670.00	2650	M	Mature	985161000783151	
	14:05		Upstream	BLTR	600.00	624.00	2150	M	Ripe	985161000778458	

Appendix 4. ctd.

Date checked	Time Lifted	Water Temp. (°C)	Trap Direction	Species	Fork Length (mm)	Total Length (mm)	Weight (g)	Sex	Maturity	PIT Tag Number	Comments
04-Sep-07	14:20	10	Downstream	BLTR	631.00	651.00	2450	M	Mature	985161000765444	
	14:30		Downstream	BLTR	441.00	464.00	825	U	Mature	985161000768802	
05-Sep-07	8:45	5	Upstream	BLTR						985161000765444	Recapture
	8:50		Upstream	BLTR						985161000783560	Recapture
	8:55		Upstream	BLTR						985161000785659	Recapture
	8:55		Downstream	BLTR						985161000764560	Recapture
	9:00		Downstream	BLTR						985161000765100	Recapture
	9:05		Downstream	BLTR						985161000781084	Recapture
	9:00		Downstream	BLTR						985161000768802	Recapture
	9:00		Downstream	BLTR	584.00	609.00	1700	U	Unknown	985161000780797	
	9:05		Downstream	CTTR	340.00	355.00	459	U			
06-Sep-07	8:50	7	Upstream	BLTR						985161000765100	Recapture
	8:55		Upstream	BLTR	462.00	485.00	1400	M	Ripe	985161000783862	hook in mouth
	9:10		Downstream	BLTR	651.00	669.00	2325	F	Spent	985161000781080	
	9:20		Downstream	BLTR						985161000785659	Recapture
	9:30		Downstream	BLTR	487.00	495.00	1125	F	Spent	985161000766177	
	9:40		Downstream	BLTR	527.00	536.00	1275	U	Mature	985161000768609	
	9:50		Downstream	BLTR	650.00	674.00	2175	F	Spent	985161000781197	
	9:55		Downstream	BLTR						985161000765444	Recapture
	10:00		Downstream	BLTR	721.00	744.00	3375	M	Ripe	985161000784309	
	10:05		Downstream	BLTR	748.00	758.00	3450	F	Spent	985161000781279	
	10:10		Downstream	BLTR	568.00	578.00	1500	F	Spent	985161000765956	
	10:10		Downstream	BLTR	546.00	557.00	1475	F	Spent	985161000826518	
	10:10		Downstream	BLTR	521.00	541.00	1500	U	Mature	985161000784184	
07-Sep-07	9:40	4	Upstream	BLTR						985161000781279	Recapture
	9:47		Downstream	BLTR						985161000856052	Recapture

Appendix 4. ctd.

Date checked	Time Lifted	Water Temp. (°C)	Trap Direction	Species	Fork Length (mm)	Total Length (mm)	Weight (g)	Sex	Maturity	PIT Tag Number	Comments
07-Sep-07	9:52	4	Downstream	BLTR						985161000766037	Recapture
	9:55		Downstream	BLTR						985161000768487	Recapture
	10:00		Downstream	BLTR						985161000765100	Recapture
	10:00		Downstream	BLTR	578.00	598.00	1800	F	Spent	985161000764561	
	10:05		Downstream	BLTR	510.00	529.00	1225	U	Mature	985161000784147	
	10:10		Downstream	BLTR						985161000783862	Recapture
08-Sep-07	9:20	2	Downstream	BLTR	530.00	550.00	1500	F	Mature	985161000780599	
	9:35		Downstream	BLTR						985161000768664	Recapture
	9:40		Downstream	BLTR	540.00	555.00	1600	F	Mature	985161000767031	
	9:42		Downstream	BLTR						985161000768660	Recapture
	9:45		Downstream	BLTR						985161000781279	Recapture
	9:47		Downstream	BLTR						985161000824256	Recapture
	9:48		Downstream	BLTR						985161000778076	Recapture
	9:50		Downstream	BLTR	450.00	470.00	1000	F	Mature	985161000777247	
09-Sep-07	9:10	3	Downstream	BLTR						985161000779074	Recapture
	9:15		Downstream	BLTR	625.00	647.00	2500	M	Mature	985161000783665	
	9:20		Downstream	BLTR	460.00	480.00	1100	U	Mature	985161000782818	
	9:30		Downstream	BLTR						985161000778582	Recapture
	9:30		Downstream	BLTR	481.00	500.00	1200	F	Spent	985161000782108	
10-Sep-07	12:00	5	Downstream	BLTR	716.00	722.00	3250	M	Mature	985161000766708	
	12:10		Downstream	BLTR	551.00	574.00	1600	F	Mature	985161000764574	
	12:15		Downstream	BLTR	562.00	573.00	1375	F	Spent	985161000767070	
	12:25		Downstream	BLTR	551.00	565.00	1275	F	Spent	985161000778068	
	12:30		Downstream	BLTR	482.00	498.00	925	U	Mature	985161000785382	
	12:30		Downstream	BLTR	558.00	577.00	1425	M	Ripe	985161000765227	
	12:40		Upstream	BLTR	723.00	745.00	2750	F	Spent	985161000784253	

Appendix 4. ctd.

Date checked	Time Lifted	Water Temp. (°C)	Trap Direction	Species	Fork Length (mm)	Total Length (mm)	Weight (g)	Sex	Maturity	PIT Tag Number	Comments
10-Sep-07	12:45	5	Upstream	BLTR	530.00	553.00	1500	F	Spent	985161000784254	
11-Sep-07	9:20	4	Downstream	BLTR						985161000784254	Recapture
	9:22		Downstream	BLTR						985161000784291	Recapture
	9:25		Downstream	BLTR	510.00	528.00	1250	M	Ripe	985161000763227	
	9:35		Downstream	BLTR	551.00	569.00	1475	F	Spent	985161000765836	
	9:45		Upstream	BLTR						985161000785116	Recapture
	9:50		Upstream	CTTR	292.00	305.00	300	U			
12-Sep-07	9:45	6	Upstream	BLTR						985161000778598	Recapture
	9:50		Upstream	BLTR	465.00	480.00	950	U	Mature	985161000762884	
	10:00		Upstream	BLTR	439.00	451.00	825	U	Mature	985161000785226	
	10:05		Downstream	BLTR						985161000783267	Recapture
	10:07		Downstream	BLTR						985161000768305	Recapture
	10:10		Downstream	BLTR	584.00	595.00	1975	M	Ripe	985161000767720	
	10:15		Downstream	BLTR	438.00	462.00	775	U	Mature	985161000781328	
	10:20		Downstream	BLTR	481.00	487.00	1000	U	Mature	985161000783606	
13-Sep-07	9:50	5	Upstream	BLTR						985161000784254	Recapture
	9:55		Upstream	BLTR						985161000768802	Recapture
	10:00		Downstream	BLTR	666.00	681.00	2525	M	Ripe	985161000764581	adipose fin clipped
	10:03		Downstream	BLTR						985161000780866	Recapture
14-Sep-07	9:30	3	Upstream	BLTR						985161000764581	Recapture
	9:35		Upstream	BLTR	576.00	605.00	1950	F	Spent	985161000777710	
	9:40		Downstream	BLTR						985161000784739	Recapture
	9:50		Downstream	BLTR	627.00	653.00	2300	U	Mature	985161000779064	adipose fin clipped
	10:00		Downstream	BLTR	650.00	678.00	2400	M	Ripe	985161000822473	
	10:03		Downstream	BLTR						985161000782425	Recapture
	10:05		Downstream	BLTR						985161000785429	Recapture

Appendix 4. ctd.

Date checked	Time Lifted	Water Temp. (°C)	Trap Direction	Species	Fork Length (mm)	Total Length (mm)	Weight (g)	Sex	Maturity	PIT Tag Number	Comments
14-Sep-07	10:10	3	Downstream	BLTR						985161000762884	Recapture
	10:12		Downstream	BLTR						985161000768802	Recapture
15-Sep-07	10:30	4	Upstream	BLTR						985161000822473	Recapture
	10:40		Upstream	BLTR	640.00	655.00	2375	F	Ripe	985161000783851	
	10:45		Upstream	BLTR						985161000762880	Recapture
	10:50		Upstream	BLTR						985161000781083	Recapture
	11:00		Downstream	BLTR						985161000784253	Recapture
	11:05		Downstream	BLTR						985161000764581	Recapture
	11:10		Downstream	BLTR						985161000784254	Recapture
	11:15		Downstream	BLTR						985161000777710	Recapture
	11:20		Downstream	BLTR						985161000776992	Recapture
16-Sep-07	13:30	7	Downstream	BLTR						985161000778831	Recapture
	13:33		Downstream	BLTR	760.00	780.00	3975	M	Mature	985161000763575	
	13:35		Downstream	BLTR						985161000822473	Recapture
	13:37		Downstream	BLTR						985161000776503	Recapture
	13:40		Downstream	BLTR	489.00	512.00	1000	M	Mature	985161000777701	
	13:45		Downstream	BLTR						985161000783851	Recapture
	13:50		Downstream	BLTR	605.00	631.00	2000	M	Mature	985161000783914	
	14:00		Downstream	BLTR	485.00	502.00	1028	U	Mature	985161000785281	
	14:10		Upstream	BLTR						985161000776992	Recapture
17-Sep-07	9:15	6	Downstream	BLTR	445.00	462.00	700	U	Unknown	985161000765684	
	9:30		Upstream	BLTR						985161000777710	Recapture
18-Sep-07	10:32	3	Downstream	BLTR	370.00	390.00	485	U	Unknown	985161000780788	
	10:40		Upstream	BLTR						985161000783851	Recapture
	10:43		Upstream	BLTR						985161000762884	Recapture
19-Sep-07	10:15	2	Downstream	MNWH							escaped

Appendix 4. ctd.

Date checked	Time Lifted	Water Temp. (°C)	Trap Direction	Species	Fork Length (mm)	Total Length (mm)	Weight (g)	Sex	Maturity	PIT Tag Number	Comments
19-Sep-07		2	Downstream	CTTR	360.00	370.00	600	U			
			Downstream	CTTR	284.00	298.00	282	U			
			Downstream	CTTR	300.00	315.00	320	U			
20-Sep-07	9:30	2	Downstream	BLTR	405.00	423.00	636	U	Unknown	985161000779744	
21-Sep-07	9:15	1									
22-Sep-07	10:00	4	Downstream	BLTR	266.00	284.00	202	U	Unknown		
				CTTR	309.00	322.00	361	U			
23-Sep-07	8:45	3	Downstream	BLTR						985161000764719	Recapture
24-Sep-07	10:45	3	Downstream	BLTR						985161000785226	Recapture
25-Sep-07	9:30	3	Downstream	BLTR	653.00	665.00	2200	F	Ripe	985161000781779	- Captured via dip net
	9:40		Downstream	BLTR						985161000765599	Recapture
	9:45		Downstream	BLTR	652.00	668.00	2575	U	Mature	985161000784819	Captured via dip net
	9:50		Downstream	BLTR	748.00	754.00	3375	U	Mature	985161000838554	Captured via dip net
	9:55		Downstream	BLTR	638.00	655.00	2650	M	Spent	985161000782138	Captured via dip net
26-Sep-07	8:45	2	Downstream	BLTR						985161000764702	Recapture
	8:50		Upstream	BLTR						985161000784819	Recapture
	8:55		Downstream	BLTR						985161000765565	Recapture
27-Sep-07	9:00	2	Downstream	BLTR						985161000783851	Recapture
	9:05		Downstream	BLTR						985161000764974	Recapture
28-Sep-07	8:45	4	Downstream	CTTR	297.00	310.00	318	U			
29-Sep-07	9:30	4									
30-Sep-07	9:35	4									
30-Sep-07	9:35	4									
30-Sep-07	9:35	4									
01-Oct-07	10:00	3									
02-Oct-07	10:05	2									

Appendix 5. 2007 UOM CTTR Study BLTR Data

Waterbody Name	Date	Site Name	Start UTM Easting	Start UTM Northing	End UTM Easting	End UTM Northing	Species	Fork Length (mm)	Total Length (mm)	Weight (g)	Sex	Maturity	PIT Tag Number	Comments
unnamed	09-Aug-07	OM33	685179	5513016	685166	5512705	BLTR	310	325	349			985161000785937	
Station Creek	31-Jul-07	OM31	687855	5528663	687848	5528611	BLTR	391	410	850			985161000765336	
Racehorse Creek	21-Aug-07	OMMR03	679137	5522478	678967	5522456	BLTR	421	440	650			985161000784328	
							BLTR	480	500	1300	M	Ripe	985161000782916	
							BLTR	409	429	600	F	Mature	985161000789086	
							BLTR	532	552	1850	M	Ripe	985161000784372	
							BLTR	305	325	303			985161000711807	
							BLTR	350	366	412			985161000763911	
							BLTR	545	563	1950	F	Mature	985161000781837	
Racehorse Creek	22-Aug-07	OMMR03	679137	5522478	678967	5522456	BLTR	485	501	1060			985161000784903	
S Racehorse Creek	12-Jul-07	OM02	672988	5516499	672750	5516270	BLTR	330	348	419			985161000783727	
Vicary Creek	10-Jul-07	OM01	683209	5519936	682797	5519779	BLTR	327	344	363			985161000765955	
Dutch Creek	12-Jul-07	OM03	683304	5530917	682951	5531006	BLTR	565	585	1400			985161000775282	Incorrect PIT tag #
Dutch Creek	12-Jul-07	OM18	682151	5531033	681855	5531048	BLTR	610	619	2800			985161000764703	
							BLTR	535	542	1250			985161000781773	
Racehorse Creek	19-Jul-07	OM22	681734	5522979	681373	5522756	BLTR	725	728	3150			985161000838318	
							BLTR	342	361	399			985161000785709	
N Racehorse Creek	25-Jul-07	OM27	671022	5525146	670691	5525110	BLTR	321	341	402			985161000783311	
							BLTR	326	345	451			985161000777481	
Vicary Creek	01-Aug-07	OM32	681675	5514310	681258	5514275	BLTR	331	348	371			985161000763794	
							BLTR	279	294	218			985161000783279	
Dutch Creek	14-Aug-07	OM34	674211	5529915	673951	5529658	BLTR	525	546	1325			985161000763874	
							BLTR	684	716	2800			985161000784797	
							BLTR	550	577	1700			985161000763589	
							BLTR	454	474	1000			985161000777112	

Appendix 5. ctd.

Waterbody Name	Date	Site Name	Start UTM Easting	Start UTM Northing	End UTM Easting	End UTM Northing	Species	Fork Length (mm)	Total Length (mm)	Weight (g)	Sex	Maturity	PIT Tag Number
Dutch Creek	14-Aug-07	OM34	674211	5529915	673951	5529658	BLTR	740	765	4050	M	Mature	985161000765328
Racehorse Creek	13-Aug-07	OM06	688120	5526652	687741	5526411	BLTR	426	444	900			985161000781739
							BLTR	610	632	2125			985161000782923
							BLTR	355	374	466			985161000766780
Racehorse Creek	23-Aug-07	OM35	683055	5523504	682646	5523369	BLTR	735	767	4075	M	Mature	985161000710648
Daisy Creek	30-Aug-07	OM36	673512	5525047	686267	5521892	BLTR	336	356	338			985161000768560
Oldman River	24-Sep-07	OMMRMS07	686779	5536229	687086	5535947	BLTR	633	660	2400	M		985161000783102
							BLTR	507	528	1150			985161000778821
							BLTR	596	615	1850			985161000781354
Oldman River	25-Sep-07	OMMRMS07	686779	5536229	687086	5535947	BLTR	455	476	875			985161000766685
Livingstone River	25-Sep-07	LSMRMS07	686208	5540167	686322	5539712	BLTR	562	586	1750			985161000827173
Livingstone River	26-Sep-07	LSMRMS07	686208	5540167	686322	5539712	BLTR	562	586	1750			985161000827173
							BLTR	562	580	1575	F	Ripe	985161000784250
Oldman River	11-Jul-07	Float1	687093	5535364	687034	5534090	BLTR	551	566	2100			985161000785311
							BLTR	592	620	2600			985161000776004
							BLTR	438	455	1100			985161000785622
							BLTR	563	590	2450			985161000790310

Appendix 6. 2007 Test Angling BLTR Data

Waterbody	Activity	Start UTM	Start UTM	Species	Fork	Total	Weight	Sex	Maturity	PIT Tag Number	Notes
Oldman River	13-Jul-07	706783	5519736	BLTR	403	425	650	U		985161000763789	Waldron Falls
				BLTR	482	505	1350	U		985161000765201	
				BLTR	433	452	900	U		985161000764707	
				BLTR	379	385	500	U		985161000782136	
				BLTR	450	474	725	U		985161000767654	
				BLTR	408	424	650	U		985161000780944	
Oldman River	18-Jul-07	690303	5527932	BLTR	396	411	525	U	Mature	985161000767381	GAP Falls
				BLTR	421	442	700	U		985161000765794	
				BLTR	390	405	400	U	Mature	985161000784721	
				BLTR	382	400	400	U		985161000784007	
				BLTR	420	435	600	U		985161000781879	
				BLTR	363	378	350	U		985161000764942	
				BLTR	490	509	1100	U		985161000781574	
Oldman River	19-Jul-07	690303	5527932	BLTR	578	580	1400	U	Mature	985161000775681	GAP Falls
				BLTR	380	400	500	U		985161000784107	
				BLTR	525	550	1400	U	Mature	985161000763466	
				BLTR	424	445	700	U		985161000763473	
				BLTR	535	560	1500	U		985161000786317	
				BLTR	558	580	1900	U		985161000824441	
Oldman River	30-Jul-07	690303	5527932	BLTR	396	417	450	U		985161000764348	GAP Falls
				BLTR	429	456	650	U		985161000776857	
				BLTR	522	544	1350	U	Mature	985161000783651	
Oldman River	1-Aug-07	690303	5527932	BLTR	480	495	900	U		985161000780933	GAP Falls
				BLTR	505	520	1100	U		985161000765235	
				BLTR	460	487	1500	U		985161000786060	