

Appendix 13: 2008 Ray Brook Stream Habitat Survey Results

DETAIL - Ray Brook at Beaconsfield Road upstream to Ray Brook at access road crossing – Dec. 2008



Distance (m)	Habitat Unit	Length (m)	Gradient (%)	Depth		Width		Pools Only				Bed Material Type			LWD 10-30cm	LWD >30cm	Total LWD Tally	Instream Cover Type	Instream Cover Type	Disturbance Indicators	Riparian Vegetation			Comments		
				Bankfull (m)	Wetted (m)	Bankfull (m)	Wetted (m)	Max. Depth (m)	Crest (m)	Residual (m)	Pool Type	Dominant	Sub-Dom.	Embedd. %							%	%	Type		Structure	Canopy Closure
1	0P	1.1	0.35														0B	10		sand	bridge	MC	G	INT	0	BEACONSFIELD ROAD
2	1.1R	27.9	0.35	0.2	0.15			0.12	1.4	1.15							2B	10	UB	5sand			M	PS	100	2 embed pools
3	29G	6	0.35	0.2	0.15	0.05		0.13	2.6	1.5							0B	5	UB	5sand			M	PS	100	picture
4	35R	50															19B	10	UB	5sand	EB	sw	M	YF	100	1 glide
5	85G	5															1			sand	sw		M	YF	100	
6	90P	3	0.23						1.85	1.45	0.37	0.15	0.22	scour			1UB	5		sand	sw		M	YF	100	
7	93G	7	0.25	0.15	0.3	0.2	0.22	3.85	1.85								3UB	5		sand	sw		M	YF	100	5-12cm sand deposit
8	100R	55	6	0.35	0.12	0.13	0.06	0.10	2.32	1.77							6B	5		SW			M	PS	100	2 glide, picture, steeper grad
9	155G	16															1UB	5		sw			M	PS	80	5-20cm sand in bars
10	171P	3	0.1						1.75	1.35	0.45	0.15	0.3	DAM			1			sw			M	PS	100	heavy sand deposit, 5-19cm
11	174G	8															0			sw			M	PS	75	1 embed pool, rubble buried
12	182R	28															2UB	5		sw	mc		M	PS	100	
13	210G	7	0.25	0.21	0.24	0.25	0.23	1.57	1.37								1UB	5					M	YF	100	
14	217R	4	0.25	0.1	0.08	0.11	0.10	2.4	1.45								2B	5					M	YF	100	
15	221G	21															4UB	5	B	5			M	MF	100	1 embed pool, riffle
16	242RN	8	0.5	0.27	0.16	0.14	0.1	0.13	1.9	1.15							2UB	5		sw			M	YF	60	
17	250R	8															6			SW			MIX	PS	100	1 embed pool
18	258G	15															8UB	5		SW			MIX	YF	80	2 embed pool

SUMMARY - Ray Brook at Beconsfield Road upstream to Ray Brook at access road crossing – Dec. 2008

Total length surveyed:	273m
Average Dbf:	0.42m
Average Dw:	0.15m
Average Wbf:	2.0m
Average Ww:	1.4m
Avg. Residual Pool depth:	0.26m
riffle/pool ratio	2.0:1
Est. pool spacing @ 6Wbf:	20.8m
Acutal avg.pool spacing	91m
% total length riffle	63%
Total LWD/100m:	0.75pieces/Wbf
Total 10-30cm LWD/100m:	0.65pieces/Wbf
Total >30 cm LWD/100m:	0.10pieces/Wbf

Average Stream Gradient (GIS):					
Average Canopy Closure:		93.8%			
% Riparian Type / Surveyed Length					
Deciduous	Coniferous	Mixed	Shrub/Herb	Grassland	Unvegetated
0	0	91	0	0.4	0
Riparian Structure / % Surveyed Length					
Initial	Shrub	Pole/sapling	Young Forest	Mature Forest	
0.4	0	56	36	8	
Average Embeddedness:		68%			
Embedded pools		7			
Acutal avg. pool habitat spacing		27m			
Acutal avg.pool spacing		26Wbf/pool			
Acutal avg. pool habitat spacing		8Wbf/pool			

Instream Cover

Type	# Instances	Average %
	Major Cover Type	Bf surface area covered / instance
Overhanging vegetation	0	NA
Large woody debris	0	NA
Undercut bank	11	5
Boulder	7	7.1
Deep pool	0	NA
Instream vegetation	0	NA

Surface velocity:

m, 1T1 3.3T2 4.2T3 3.7

Est. Velocity 0.4m/s @ hab unit 0

Est Discharge = Davg hab unit no: 0.23 Ww hab unit no: 1.37

Est. Discharge m³/sec = 0.13 m³/sec a hab unit 13



Distance (m)	Habitat Unit	Length (m)	Gradient (%)	Depth			Width		Pools Only				Bed Material Type			Riparian Vegetation				Comments									
				Bankfull (m)	Wetted (m)		DW _{avg}	Bankfull (m)	Wetted (m)	Max. Depth (m)	Crest (m)	Residual (m)	Pool Type	Dominant	Sub - Dom.	Embedd. %	LWD 10-30cm	LWD >30cm	Total LWD Tally		Instream Cover Type	%	Instream Cover Type	%	Disturbance Indicators		Type	Structure	Canopy Closure
1	0Rn	14		0.27	0.13	0.07	0.06	0.09	1.35	1				gravel	sand	75		0	UB	5			sw		M	YF	100	confl. With east branch	
2	14R	18		0.32	0.15	0.15	0.11	0.1367	1.4	0.85				gravel	rubble	50	1	1	UB	5			sw		m	YF	75	PS right bank, YF LB, picture, 1 embed run	
3	32Rn	148											gravel	cobble		14	3	17	UB	5			cr		m	PS	95	4 imbed pool, 3 riffle, picture of eroding bank	
4	180R	22											cobble	gravel		10	4	14	UB	10					m	YF	100		
5	202Rn	15		0.22	0.14	0.16	0.16	0.15	1.5	0.8				gravel	cobble		4	6	10	UB	30	LWD	20	w		m	YF	100	
6	217																	0											

SUMMARY - Ray Brook at access road crossing upstream 217m – Dec. 2008

Total length surveyed:	217m
Average Dbf:	0.40m
Average Dw:	0.13m
Average Wbf:	1.4m
Average Ww:	0.9m
Avg. Residual Pool depth:	NA m
riffle/pool ratio	NA :1
Est. pool spacing @ 6Wbf:	8.5m
Acutal avg.pool spacing	NA m
% total length riffle	18%
Total LWD/100m:	0.27pieces/Wbf
Total 10-30cm LWD/100m:	0.19pieces/Wbf
Total >30 cm LWD/100m:	0.08pieces/Wbf

Average Stream Gradient (GIS):					
Average Canopy Closure: 94.0%					
% Riparian Type / Surveyed Length					
Deciduous	Coniferous	Mixed	Shrub/Herb	Grassland	Unvegetated
0	0	100	0	0	0
Riparian Structure / % Surveyed Length					
Initial	Shrub	Pole/sapling	Young Forest	Mature Forest	
0	0	68	32	0	
Average Embeddedness:			63%		
Embedded pools			4		
Acutal avg. pool habitat spacing			54		
Acutal avg.pool spacing			NA Wbf/pool		
Acutal avg. pool habitat spacing			38Wbf/pool		

Instream Cover		
Type	# Instances Major Cover Type	Average % Bf surface area covered / instance
Overhanging vegetation	0	NA
Large woody debris	1	20.0
Undercut bank	5	11
Boulder	0	NA
Deep pool	0	NA
Instream vegetation	0	NA